Paragon Analytics

Radiochemistry Case Narrative
Gamma Spectroscopy

Kent & Sullivan Inc.

Ross Adams

Paragon Work Order 0405097

1. This report consists of analysis results for thirty soil samples received by Paragon Analytics on 5/11/04. The analysis results for these samples are reported on a 'dry weight' basis in units of pCi/gram.

2. These samples were prepared according to Paragon Analytics procedure PA SOP739R8. Samples in batch GS040611-1 were digested before analysis to prevent contamination. Please see QASS 277615 in section 5 of this report.

3. The samples were analyzed for the presence of gamma emitting radionuclides according to Paragon Analytics procedure PA SOP713R8. The analyses were completed on 7/7/04.

4. Sample volumes were insufficient to allow preparation of duplicates. Duplicate analyses of samples MR-01 and 700-01 (PA ID's 0405097-2 and -19) were performed in lieu of prepared duplicates.

5. Duplicate analysis results above the DER warning limit of 1.42 have been flagged as "W" for Warn. Results above the control limit of 2.13 have been flagged as "D" for outside limits, high. For gamma spectroscopic analysis, SOP 715R13 states that 75% of the nuclides must be within the 2-sigma control limit to meet DER requirements. Elevated DER values may be attributable to sample inhomogeneity.

6. Activity concentrations above the calculated MDC are reported in some instances where minimum nuclide identification criteria are not met. Such tentative identifications result when the software attempts to calculate net activity concentrations for analytes where either one or both of the following criteria are not satisfied: the 'diagnostic' peak for a nuclide must be identified above the critical level, or the minimum library peak abundance must be attained. Nuclides not meeting these requirements have been flagged with a "TI" qualifier.

7. Paragon Analytics has found there to be a significant low bias to Pb-214 and Bi-214 results when using a mixed nuclide gamma source for efficiency calibrations. The magnitude of this bias has been determined to be approximately 32% for Bi-214, and 23% for Pb-214. Therefore, any reported results for Pb-214 and Bi-214 are flagged with a "J" qualifier, indicating the activity values to be an estimated value. Results are reported without further qualification.

8. There are cases where the sample density is less than the associated calibration standard density. Cases that exceed the limit of +/- 15% of the density of the calibration standard are flagged with a 'G', denoting a significant density difference between the sample and calibration standard. Consequently, the results may be biased high for the flagged results in

this workorder. If requested, Paragon Analytics will perform a transmission spike in order to estimate a magnitude of this bias. The results are reported without further qualification.

9. Due to elevated levels of sample activity, minor lines of high activity nuclides can interfere with quantification of other nuclides. Samples with elevated Ac-228 activity will interfere with the quantification of Mn-54. Samples with elevated Pa-234m activity will interfere with the quantification of Nb-94. In cases where these interferences are suspected, the affected nuclides have been assigned an "SI" flag denoting spectral interference.

10. The requested MDC of 0.2 pCi/gram and 1 pCi/g for Ra-228 and Pa-231 respectively was not met for the method blank associated with these samples. The blank was counted as long as the longest sample count per PA requirements. Data is not believed to be affected, as there is significant activity in the samples associated with this batch.

11. Due to elevated activity and subsequent elevated background from the Compton Continuum in several samples in this workorder, the requested MDC for Ra-228 and Pa-231 could not be met. These samples have been given a "M3" qualifier for Ra-228 and an "M" for Pa-231. As there is significant Ra-228 activity in these samples, the results are reported without further qualification.

12. Paragon Analytics follows the convention outlined in ANSI N42.23 for reporting significant digits in the TPU and MDC results. ANSI N42.23 states that the TPU result should be rounded to two significant digits and that the MDC result should be rounded to the same decimal place as the TPU result. In practice, this could result in an MDC result with a reported value of 0 for samples with significant activity, including the batch laboratory control sample.

13. There are cases where the magnitude of negative activity is greater than the 2-sigma TPU. Under typical conditions, where background data is normally distributed and analyzed by paired observations, this event is likely to occur at least 2.5% of the time. Review of the data does not indicate a problem with the instrument or reporting systems and results are reported without further qualification.

14. No further problems were encountered with either the client samples or the associated quality control samples. All remaining quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Radiochemistry Instrument Technician — Date: 7/22/04

Radiochemistry Final Data Review — Date: 7-26-04

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PARAGON ANALYTICS
Radiochemistry Data Package

Section 1

SAMPLE RESULTS SUMMARY

A summary report is not provided.

Please refer to the individual sample results data in Section 3.

PARAGON ANALYTICS

Radiochemistry Data Package

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Section 2

QC RESULTS SUMMARY

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: GS040611-1MB

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 11-Jun-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 90 minutes

Final Aliquot: 1.00 g
Result Units: pCi/g
File Name: 041033D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	8 +/- 35	61	U,M
14391-76-5	Ag-110m	1.0 +/- 6.7	12.1	U
14682-66-7	Al-26	-12 +/- 13	26	U
14596-10-2	Am-241	-6.9 +/- 9.1	16.9	U
13966-02-4	Be-7	-12 +/- 53	98	U
14913-49-6	Bi-212	100 +/- 100	170	U
14733-03-0	Bi-214	16 +/- 21	34	U,J
13982-30-4	Ce-139	2.7 +/- 3.1	5.0	U
14762-78-8	Ce-144	-6 +/- 27	48	U
14093-03-9	Co-56	14 +/- 15	24	U
13981-50-5	Co-57	-1.5 +/- 3.1	5.8	U
13981-38-9	Co-58	-2.5 +/- 6.6	12.9	U
10198-40-0	Co-60	-0.3 +/- 9.5	17.9	U
14392-02-0	Cr-51	-27 +/- 48	89	U
13967-70-9	Cs-134	-3.0 +/- 8.6	15.8	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
M - Requested MDC not met.
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: GS040611-1MB

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 11-Jun-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 90 minutes

Final Aliquot: 1.00 g
Result Units: pCi/g
File Name: 041033D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	2.2 +/- 6.8	12.0	U
14683-23-9	Eu-152	-39 +/- 48	99	U
15585-10-1	Eu-154	17 +/- 45	79	U
14391-16-3	Eu-155	5 +/- 13	23	U
14596-12-4	Fe-59	13 +/- 14	23	U
10043-66-0	I-131	-1.8 +/- 6.0	11.0	U
13966-00-2	K-40	-40 +/- 97	192	U
13966-31-9	Mn-54	0 +/- 8.4	15.2	U
13966-32-0	Na-22	1.2 +/- 9.2	16.8	U
14681-63-1	Nb-94	-5.4 +/- 9.7	18.0	U
13967-76-5	Nb-95	-6.7 +/- 7.6	15.0	U
15100-28-4	Pa-234m	-300 +/- 1500	2800	U
15092-94-1	Pb-212	0 +/- 11	19	U
15067-28-4	Pb-214	8 +/- 16	27	U,J
13967-48-1	Ru-106	-50 +/- 69	134	U

Comments:

Qualifiers/Flags:

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Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
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Abbreviations:

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MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: GS040611-1MB

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 11-Jun-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 90 minutes

Final Aliquot: 1.00 g
Result Units: pCi/g
File Name: 041033D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	7.3 +/- 8.2	13.2	U
14234-35-6	Sb-125	-7 +/- 18	34	U
13967-63-0	Sc-46	-0.8 +/- 8.0	14.8	U
15623-47-9	Th-227	15 +/- 31	52	U
15065-10-8	Th-234	-32 +/- 75	132	U
14913-50-9	Tl-208	-4.0 +/- 9.6	17.6	U
15117-96-1	U-235	0 +/- 32	64	U
13982-39-3	Zn-65	17 +/- 18	28	U
14331-85-2	Pa-231	-80 +/- 200	370	U,M

Comments:

Qualifiers/Flags:

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LT - Result is less than Requested MDC, greater than sample specific MDC.
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SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
M - Requested MDC not met.
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: GS040614-2MB

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 14-Jun-04
Date Prepared: 14-Jun-04
Date Analyzed: 07-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 1000 minutes

Final Aliquot: 100 g
Result Units: pCi/g
File Name: 041177D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	-0.013 +/- 0.091	0.153	U
14391-76-5	Ag-110m	0.008 +/- 0.010	0.016	U
14682-66-7	Al-26	0.006 +/- 0.012	0.020	U
14596-10-2	Am-241	0.016 +/- 0.061	0.102	U
13966-02-4	Be-7	-0.064 +/- 0.074	0.130	U
14913-49-6	Bi-212	-0.07 +/- 0.37	0.63	U
14733-03-0	Bi-214	0.019 +/- 0.053	0.088	U,J
13982-30-4	Ce-139	-0.014 +/- 0.012	0.021	U
14762-78-8	Ce-144	-0.013 +/- 0.038	0.066	U
14093-03-9	Co-56	0.010 +/- 0.017	0.029	U
13981-50-5	Co-57	0.0043 +/- 0.0052	0.0084	U
13981-38-9	Co-58	0.002 +/- 0.010	0.018	U
10198-40-0	Co-60	-0.009 +/- 0.013	0.023	U
14392-02-0	Cr-51	0.032 +/- 0.069	0.114	U
13967-70-9	Cs-134	-0.022 +/- 0.013	0.022	U

Comments:

Qualifiers/Flags:

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LT - Result is less than Requested MDC, greater than sample specific MDC.
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SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
M - Requested MDC not met.
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: GS040614-2MB

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 14-Jun-04
Date Prepared: 14-Jun-04
Date Analyzed: 07-Jul-04

Library: KENT_FANP

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 1000 minutes

Final Aliquot: 100 g
Result Units: pCi/g
File Name: 041177D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-0.003 +/- 0.011	0.019	U
14683-23-9	Eu-152	0.008 +/- 0.057	0.099	U
15585-10-1	Eu-154	-0.083 +/- 0.060	0.110	U
14391-16-3	Eu-155	0.027 +/- 0.024	0.039	U
14596-12-4	Fe-59	0.001 +/- 0.021	0.036	U
10043-66-0	I-131	0.005 +/- 0.010	0.017	U
13966-00-2	K-40	0.18 +/- 0.34	0.55	U
13966-31-9	Mn-54	0.007 +/- 0.011	0.018	U
13966-32-0	Na-22	-0.010 +/- 0.012	0.022	U
14681-63-1	Nb-94	0.007 +/- 0.013	0.022	U
13967-76-5	Nb-95	-0.006 +/- 0.011	0.019	U
15100-28-4	Pa-234m	1.2 +/- 1.8	3.0	U
15092-94-1	Pb-212	-0.004 +/- 0.034	0.057	U
15067-28-4	Pb-214	-0.021 +/- 0.050	0.083	U,J
13967-48-1	Ru-106	-0.03 +/- 0.10	0.18	U

Comments:

Qualifiers/Flags:

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Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
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TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
M - Requested MDC not met.
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: GS040614-2MB

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 14-Jun-04
Date Prepared: 14-Jun-04
Date Analyzed: 07-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 1000 minutes

Final Aliquot: 100 g
Result Units: pCi/g
File Name: 041177D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.013 +/- 0.012	0.020	U
14234-35-6	Sb-125	0.009 +/- 0.026	0.044	U
13967-63-0	Sc-46	-0.004 +/- 0.011	0.019	U
15623-47-9	Th-227	0.009 +/- 0.047	0.080	U
15065-10-8	Th-234	0.16 +/- 0.38	0.62	U
14913-50-9	Tl-208	0.007 +/- 0.026	0.043	U
15117-96-1	U-235	0.070 +/- 0.063	0.102	U
13982-39-3	Zn-65	-0.009 +/- 0.026	0.045	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
M - Requested MDC not met.
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Laboratory Control Sample(s)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: GS040611-1LCS

Library: 1

Sample Matrix: WATER
Prep SOP: PAI 739 Rev 8
Date Collected: 11-Jun-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040611-1C
Count Time: 31 minutes

Final Aliquot: 1000 ml
Result Units: pCi/l
File Name: 040962D07A

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
14596-10-2	Am-241	106000 +/- 12000	0	106000	99.8	85 - 115	P
10198-40-0	Co-60	44800 +/- 5300	200	45600	98.3	85 - 115	P
10045-97-3	Cs-137	36600 +/- 4300	200	37600	97.2	85 - 115	P

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Laboratory Control Sample(s)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: GS040614-2LCS

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 14-Jun-04
Date Prepared: 14-Jun-04
Date Analyzed: 02-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes

Final Aliquot: 100 g
Result Units: pCi/g
File Name: 041140D02A

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
14596-10-2	Am-241	990 +/- 120	10	1010	98.6	85 - 115	P
10198-40-0	Co-60	419 +/- 49	1	432	97.1	85 - 115	P
10045-97-3	Cs-137	377 +/- 44	2	357	106	85 - 115	P

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: HR-01
Lab ID: 0405097-1DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 96.7 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041123D03A

CASNO	Analyte	Sample Result +/- 2 s TPU	Duplicate Result +/- 2 s TPU	DER	Control Limit	Lab Qualifiers
15262-20-1	Ra-228	130 +/- 16	127 +/- 15	0.15	2.13	M3
14391-76-5	Ag-110m	0.49 +/- 0.57	0.35 +/- 0.68	0.16	2.13	U
14682-66-7	Al-26	0.12 +/- 0.50	0.17 +/- 0.71	0.05	2.13	U
14596-10-2	Am-241	6.0 +/- 4.4	2.2 +/- 4.4	0.62	2.13	U
13966-02-4	Be-7	5.6 +/- 8.1	-12 +/- 10	1.35	2.13	U
14913-49-6	Bi-212	125 +/- 19	130 +/- 20	0.20	2.13	
14733-03-0	Bi-214	182 +/- 22	178 +/- 21	0.15	2.13	J
13982-30-4	Ce-139	0.31 +/- 0.53	-1.12 +/- 0.71	1.61	2.13	U,W
14762-78-8	Ce-144	-0.9 +/- 3.3	-2.0 +/- 3.8	0.21	2.13	U
14093-03-9	Co-56	-30.6 +/- 6.1	-2.1 +/- 4.9	3.64	2.13	U,D
13981-50-5	Co-57	0.51 +/- 0.44	0.25 +/- 0.49	0.39	2.13	U
13981-38-9	Co-58	1.11 +/- 0.89	0.6 +/- 1.5	0.31	2.13	U
10198-40-0	Co-60	0.18 +/- 0.57	0.55 +/- 0.72	0.40	2.13	U
14392-02-0	Cr-51	13 +/- 14	-5 +/- 18	0.76	2.13	U
13967-70-9	Cs-134	2.16 +/- 0.51	2.13 +/- 0.58	0.04	2.13	TI
10045-97-3	Cs-137	0.04 +/- 0.79	0.15 +/- 0.68	0.11	2.13	U
14683-23-9	Eu-152	11.4 +/- 2.9	28.7 +/- 7.9	2.06	2.13	W,TI

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: HR-01
Lab ID: 0405097-1DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 96.7 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041123D03A

15585-10-1	Eu-154	-0.1 +/- 4.1	-3.1 +/- 5.4	0.45	2.13	U
14391-16-3	Eu-155	5.4 +/- 2.2	7.3 +/- 2.5	0.57	2.13	
14596-12-4	Fe-59	-1.8 +/- 3.3	-0.3 +/- 2.7	0.35	2.13	U
10043-66-0	I-131	2 +/- 64	33 +/- 68	0.33	2.13	U
13966-00-2	K-40	21.6 +/- 8.3	15.7 +/- 8.4	0.50	2.13	
13966-31-9	Mn-54	0.93 +/- 0.51	1.23 +/- 0.66	0.36	2.13	SI
13966-32-0	Na-22	-0.21 +/- 0.56	0.1 +/- 1.1	0.25	2.13	U
14681-63-1	Nb-94	0.61 +/- 0.55	0.95 +/- 0.98	0.30	2.13	U
13967-76-5	Nb-95	2.9 +/- 1.6	3.1 +/- 1.9	0.07	2.13	TI
15100-28-4	Pa-234m	261 +/- 95	360 +/- 130	0.61	2.13	
15092-94-1	Pb-212	128 +/- 15	125 +/- 15	0.16	2.13	
15067-28-4	Pb-214	201 +/- 24	194 +/- 23	0.22	2.13	J
13967-48-1	Ru-106	-1.6 +/- 5.3	1.8 +/- 6.1	0.42	2.13	U
14683-10-4	Sb-124	-0.63 +/- 0.96	0.8 +/- 1.1	0.94	2.13	U
14234-35-6	Sb-125	3.1 +/- 1.1	3.1 +/- 1.3	0.00	2.13	TI
13967-63-0	Sc-46	-0.76 +/- 0.84	0.60 +/- 0.99	1.04	2.13	U
15623-47-9	Th-227	17.2 +/- 4.2	13.5 +/- 4.0	0.64	2.13	
15065-10-8	Th-234	264 +/- 34	226 +/- 30	0.83	2.13	
14913-50-9	Tl-208	37.6 +/- 4.6	37.2 +/- 4.5	0.06	2.13	

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: HR-01
Lab ID: 0405097-1DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 96.7 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041123D03A

15117-96-1	U-235	11.1 +/- 3.0	11.2 +/- 3.3	0.01	2.13	
13982-39-3	Zn-65	-0.9 +/- 2.0	-6.0 +/- 2.7	1.50	2.13	U,W

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-01
Lab ID: 0405097-2DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 90 minutes
Report Basis: Dry Weight

Final Aliquot: 0.881 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041032D03A

CASNO	Analyte	Sample Result +/- 2 s TPU	Duplicate Result +/- 2 s TPU	DER	Control Limit	Lab Qualifiers
15262-20-1	Ra-228	68 +/- 27	92 +/- 46	0.44	2.13	M3
14391-76-5	Ag-110m	0.9 +/- 7.8	6 +/- 10	0.37	2.13	U
14682-66-7	Al-26	-3 +/- 10	-5 +/- 14	0.11	2.13	U
14596-10-2	Am-241	5 +/- 30	-40 +/- 58	0.68	2.13	U
13966-02-4	Be-7	77 +/- 90	70 +/- 130	0.07	2.13	U
14913-49-6	Bi-212	94 +/- 99	140 +/- 170	0.23	2.13	U
14733-03-0	Bi-214	72 +/- 24	68 +/- 30	0.10	2.13	J
13982-30-4	Ce-139	-4.8 +/- 7.1	-5.3 +/- 9.2	0.04	2.13	U
14762-78-8	Ce-144	5 +/- 44	-47 +/- 51	0.77	2.13	U
14093-03-9	Co-56	-3 +/- 26	-2 +/- 27	0.02	2.13	U
13981-50-5	Co-57	2.2 +/- 5.9	5.0 +/- 6.2	0.33	2.13	U
13981-38-9	Co-58	-8 +/- 12	8 +/- 16	0.85	2.13	U
10198-40-0	Co-60	-8 +/- 10	-6 +/- 12	0.14	2.13	U
14392-02-0	Cr-51	-130 +/- 150	-90 +/- 210	0.15	2.13	U
13967-70-9	Cs-134	33 +/- 72	-13 +/- 11	0.64	2.13	U
10045-97-3	Cs-137	-1.4 +/- 7.8	-5 +/- 10	0.27	2.13	U
14683-23-9	Eu-152	-25 +/- 47	30 +/- 55	0.77	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-01
Lab ID: 0405097-2DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 90 minutes
Report Basis: Dry Weight

Final Aliquot: 0.881 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041032D03A

15585-10-1	Eu-154	-22 +/- 46	-43 +/- 61	0.27	2.13	U
14391-16-3	Eu-155	-1 +/- 23	-7 +/- 27	0.19	2.13	U
14596-12-4	Fe-59	21 +/- 31	-3 +/- 40	0.47	2.13	U
10043-66-0	I-131	160 +/- 330	-230 +/- 440	0.70	2.13	U
13966-00-2	K-40	60 +/- 110	-20 +/- 160	0.46	2.13	U
13966-31-9	Mn-54	-13 +/- 12	0 +/- 10	0.80	2.13	U
13966-32-0	Na-22	-6.8 +/- 9.3	-6 +/- 12	0.05	2.13	U
14681-63-1	Nb-94	0.8 +/- 7.4	-11 +/- 12	0.88	2.13	U
13967-76-5	Nb-95	-1 +/- 13	2 +/- 18	0.16	2.13	U
15100-28-4	Pa-234m	1600 +/- 1300	1200 +/- 1700	0.19	2.13	U
15092-94-1	Pb-212	57 +/- 15	62 +/- 22	0.18	2.13	
15067-28-4	Pb-214	91 +/- 22	88 +/- 25	0.10	2.13	J
13967-48-1	Ru-106	-78 +/- 78	0 +/- 92	0.64	2.13	U
14683-10-4	Sb-124	-7 +/- 17	-16 +/- 18	0.34	2.13	U
14234-35-6	Sb-125	10 +/- 18	4 +/- 27	0.19	2.13	U
13967-63-0	Sc-46	-4 +/- 11	-6 +/- 14	0.10	2.13	U
15623-47-9	Th-227	-39 +/- 63	-17 +/- 80	0.22	2.13	U
15065-10-8	Th-234	180 +/- 120	140 +/- 170	0.19	2.13	U
14913-50-9	Tl-208	9.7 +/- 7.6	28 +/- 16	1.00	2.13	

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-01
Lab ID: 0405097-2DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 90 minutes
Report Basis: Dry Weight

Final Aliquot: 0.881 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041032D03A

15117-96-1	U-235	-2 +/- 46	21 +/- 50	0.34	2.13	U
13982-39-3	Zn-65	42 +/- 33	-12 +/- 29	1.22	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-08
Lab ID: 0405097-11DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 107 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041132D02A

CASNO	Analyte	Sample Result +/- 2 s TPU	Duplicate Result +/- 2 s TPU	DER	Control Limit	Lab Qualifiers
15262-20-1	Ra-228	1.46 +/- 0.59	1.62 +/- 0.49	0.21	2.13	M3
14391-76-5	Ag-110m	-0.04 +/- 0.14	-0.04 +/- 0.12	0.03	2.13	U
14682-66-7	Al-26	-0.12 +/- 0.14	0.026 +/- 0.081	0.90	2.13	U
14596-10-2	Am-241	-0.01 +/- 0.16	0.36 +/- 0.63	0.56	2.13	U
13966-02-4	Be-7	-0.8 +/- 1.8	0.1 +/- 1.5	0.40	2.13	U
14913-49-6	Bi-212	3.3 +/- 2.2	0.9 +/- 1.7	0.85	2.13	U
14733-03-0	Bi-214	2.94 +/- 0.64	3.04 +/- 0.57	0.11	2.13	J
13982-30-4	Ce-139	0.009 +/- 0.097	-0.049 +/- 0.075	0.47	2.13	U
14762-78-8	Ce-144	0.23 +/- 0.55	-0.17 +/- 0.51	0.52	2.13	U
14093-03-9	Co-56	0.25 +/- 0.59	0.49 +/- 0.41	0.33	2.13	U
13981-50-5	Co-57	0.025 +/- 0.069	0.005 +/- 0.066	0.21	2.13	U
13981-38-9	Co-58	0.06 +/- 0.18	-0.04 +/- 0.16	0.41	2.13	U
10198-40-0	Co-60	0.09 +/- 0.15	-0.02 +/- 0.10	0.66	2.13	U
14392-02-0	Cr-51	-2.9 +/- 3.7	-2.6 +/- 2.4	0.06	2.13	U
13967-70-9	Cs-134	0.08 +/- 0.12	-0.05 +/- 0.10	0.82	2.13	U
10045-97-3	Cs-137	0.08 +/- 0.15	0.06 +/- 0.12	0.11	2.13	U
14683-23-9	Eu-152	0.19 +/- 0.70	0.06 +/- 0.63	0.13	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-08
Lab ID: 0405097-11DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 107 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041132D02A

15585-10-1	Eu-154	0 +/- 0.77	-0.59 +/- 0.67	0.58	2.13	U
14391-16-3	Eu-155	0.05 +/- 0.23	0 +/- 0.28	0.13	2.13	U
14596-12-4	Fe-59	0.20 +/- 0.62	0.03 +/- 0.47	0.21	2.13	U
10043-66-0	I-131	-3 +/- 11	1.4 +/- 9.7	0.30	2.13	U
13966-00-2	K-40	35.2 +/- 6.7	33.7 +/- 5.7	0.17	2.13	
13966-31-9	Mn-54	-0.10 +/- 0.15	-0.04 +/- 0.11	0.31	2.13	U
13966-32-0	Na-22	0 +/- 0.16	-0.07 +/- 0.15	0.33	2.13	U
14681-63-1	Nb-94	-0.08 +/- 0.13	-0.08 +/- 0.11	0.00	2.13	U
13967-76-5	Nb-95	-0.17 +/- 0.25	-0.07 +/- 0.19	0.33	2.13	U
15100-28-4	Pa-234m	9 +/- 26	6 +/- 18	0.10	2.13	U
15092-94-1	Pb-212	2.00 +/- 0.40	2.01 +/- 0.37	0.02	2.13	
15067-28-4	Pb-214	2.94 +/- 0.51	3.26 +/- 0.51	0.44	2.13	J
13967-48-1	Ru-106	-0.9 +/- 1.2	0 +/- 0.94	0.58	2.13	U
14683-10-4	Sb-124	-0.02 +/- 0.22	0.01 +/- 0.18	0.10	2.13	U
14234-35-6	Sb-125	0.01 +/- 0.30	0.08 +/- 0.28	0.17	2.13	U
13967-63-0	Sc-46	-0.02 +/- 0.22	-0.11 +/- 0.15	0.33	2.13	U
15623-47-9	Th-227	-0.06 +/- 0.78	-0.12 +/- 0.66	0.06	2.13	U
15065-10-8	Th-234	3.0 +/- 1.3	4.0 +/- 2.1	0.43	2.13	TI
14913-50-9	Tl-208	0.64 +/- 0.21	0.36 +/- 0.14	1.12	2.13	

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-08
Lab ID: 0405097-11DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 107 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041132D02A

15117-96-1	U-235	-0.22 +/- 0.56	0.51 +/- 0.48	0.99	2.13	U
13982-39-3	Zn-65	-0.47 +/- 0.42	0.18 +/- 0.68	0.81	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-01
Lab ID: 0405097-19DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040959D07A

CASNO	Analyte	Sample Result +/- 2 s TPU	Duplicate Result +/- 2 s TPU	DER	Control Limit	Lab Qualifiers
15262-20-1	Ra-228	1150 +/- 140	1100 +/- 150	0.20	2.13	M3
14391-76-5	Ag-110m	-10.8 +/- 9.0	-14 +/- 16	0.17	2.13	U
14682-66-7	Al-26	0.4 +/- 9.1	-10 +/- 14	0.64	2.13	U
14596-10-2	Am-241	57 +/- 43	20 +/- 29	0.72	2.13	U
13966-02-4	Be-7	80 +/- 100	90 +/- 210	0.06	2.13	U
14913-49-6	Bi-212	750 +/- 160	840 +/- 310	0.26	2.13	
14733-03-0	Bi-214	950 +/- 120	1000 +/- 210	0.22	2.13	J
13982-30-4	Ce-139	-15 +/- 13	-12 +/- 15	0.13	2.13	U
14762-78-8	Ce-144	-2 +/- 61	54 +/- 94	0.50	2.13	U
14093-03-9	Co-56	104 +/- 48	107 +/- 88	0.03	2.13	U
13981-50-5	Co-57	1.1 +/- 8.3	-5 +/- 12	0.40	2.13	U
13981-38-9	Co-58	-1 +/- 20	-30 +/- 23	0.95	2.13	U
10198-40-0	Co-60	-6 +/- 10	-4 +/- 17	0.06	2.13	U
14392-02-0	Cr-51	40 +/- 180	110 +/- 370	0.17	2.13	U
13967-70-9	Cs-134	11 +/- 95	15 +/- 12	0.04	2.13	U
10045-97-3	Cs-137	-11 +/- 13	-5 +/- 27	0.19	2.13	U
14683-23-9	Eu-152	83 +/- 42	126 +/- 97	0.41	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-01
Lab ID: 0405097-19DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040959D07A

15585-10-1	Eu-154	-25 +/- 71	-76 +/- 82	0.47	2.13	U
14391-16-3	Eu-155	35 +/- 22	74 +/- 45	0.77	2.13	
14596-12-4	Fe-59	3 +/- 33	-30 +/- 61	0.47	2.13	U
10043-66-0	I-131	-140 +/- 380	-130 +/- 730	0.02	2.13	U
13966-00-2	K-40	90 +/- 110	80 +/- 190	0.05	2.13	U
13966-31-9	Mn-54	15.1 +/- 8.9	1 +/- 18	0.71	2.13	U
13966-32-0	Na-22	-7 +/- 15	-7 +/- 16	0.01	2.13	U
14681-63-1	Nb-94	-0.1 +/- 8.7	11 +/- 17	0.59	2.13	U
13967-76-5	Nb-95	-52 +/- 23	25 +/- 42	1.60	2.13	U,W
15100-28-4	Pa-234m	1200 +/- 1000	2000 +/- 2600	0.31	2.13	U
15092-94-1	Pb-212	612 +/- 76	569 +/- 79	0.40	2.13	
15067-28-4	Pb-214	1060 +/- 130	1040 +/- 130	0.09	2.13	J
13967-48-1	Ru-106	110 +/- 80	40 +/- 150	0.44	2.13	U
14683-10-4	Sb-124	-3 +/- 15	-3 +/- 23	0.02	2.13	U
14234-35-6	Sb-125	22 +/- 21	32 +/- 38	0.24	2.13	U
13967-63-0	Sc-46	-14 +/- 12	-10 +/- 18	0.16	2.13	U
15623-47-9	Th-227	100 +/- 1100	600 +/- 1900	0.21	2.13	U
15065-10-8	Th-234	1830 +/- 280	1200 +/- 230	1.73	2.13	W
14913-50-9	Tl-208	171 +/- 23	154 +/- 32	0.42	2.13	

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-01
Lab ID: 0405097-19DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040959D07A

15117-96-1	U-235	148 +/- 47	194 +/- 86	0.47	2.13	
13982-39-3	Zn-65	-47 +/- 36	43 +/- 58	1.31	2.13	U
14331-85-2	Pa-231	270 +/- 350	-220 +/- 680	0.65	2.13	U,M

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: *GSS0405097-1*

PARAGON ANALYTICS
Radiochemistry Data Package

3

Section 3

INDIVIDUAL SAMPLE RESULTS

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: HR-01
Lab ID: 0405097-1

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 94.4 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041129D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	130 +/- 16	4	M3
14391-76-5	Ag-110m	0.49 +/- 0.57	0.96	U
14682-66-7	Al-26	0.12 +/- 0.50	0.86	U
14596-10-2	Am-241	6.0 +/- 4.4	7.1	U
13966-02-4	Be-7	5.6 +/- 8.1	13.3	U
14913-49-6	Bi-212	125 +/- 19	14	
14733-03-0	Bi-214	182 +/- 22	2	J
13982-30-4	Ce-139	0.31 +/- 0.53	0.88	U
14762-78-8	Ce-144	-0.9 +/- 3.3	5.5	U
14093-03-9	Co-56	-30.6 +/- 6.1	9.4	U
13981-50-5	Co-57	0.51 +/- 0.44	0.72	U
13981-38-9	Co-58	1.11 +/- 0.89	1.42	U
10198-40-0	Co-60	0.18 +/- 0.57	0.95	U
14392-02-0	Cr-51	13 +/- 14	23	U
13967-70-9	Cs-134	2.16 +/- 0.51	0.88	TI

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: HR-01
Lab ID: 0405097-1

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 94.4 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041129D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.04 +/- 0.79	1.33	U
14683-23-9	Eu-152	11.4 +/- 2.9	4.9	TI
15585-10-1	Eu-154	-0.1 +/- 4.1	6.9	U
14391-16-3	Eu-155	5.4 +/- 2.2	3.5	
14596-12-4	Fe-59	-1.8 +/- 3.3	5.7	U
10043-66-0	I-131	2 +/- 64	108	U
13966-00-2	K-40	21.6 +/- 8.3	12.2	
13966-31-9	Mn-54	0.93 +/- 0.51	0.78	SI
13966-32-0	Na-22	-0.21 +/- 0.56	0.98	U
14681-63-1	Nb-94	0.61 +/- 0.55	0.88	U
13967-76-5	Nb-95	2.9 +/- 1.6	2.4	TI
15100-28-4	Pa-234m	261 +/- 95	135	
15092-94-1	Pb-212	128 +/- 15	2	
15067-28-4	Pb-214	201 +/- 24	2	J
13967-48-1	Ru-106	-1.6 +/- 5.3	9.0	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: HR-01
Lab ID: 0405097-1

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 94.4 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041129D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-0.63 +/- 0.96	1.63	U
14234-35-6	Sb-125	3.1 +/- 1.1	1.8	TI
13967-63-0	Sc-46	-0.76 +/- 0.84	1.46	U
15623-47-9	Th-227	17.2 +/- 4.2	5.7	
15065-10-8	Th-234	264 +/- 34	21	
14913-50-9	Tl-208	37.6 +/- 4.6	0.9	
15117-96-1	U-235	11.1 +/- 3.0	5.5	
13982-39-3	Zn-65	-0.9 +/- 2.0	3.5	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: HR-01
Lab ID: 0405097-1DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 96.7 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041123D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	127 +/- 15	5	M3
14391-76-5	Ag-110m	0.35 +/- 0.68	1.18	U
14682-66-7	Al-26	0.17 +/- 0.71	1.21	U
14596-10-2	Am-241	2.2 +/- 4.4	7.3	U
13966-02-4	Be-7	-12 +/- 10	18	U
14913-49-6	Bi-212	130 +/- 20	17	
14733-03-0	Bi-214	178 +/- 21	2	J
13982-30-4	Ce-139	-1.12 +/- 0.71	1.19	U,W
14762-78-8	Ce-144	-2.0 +/- 3.8	6.3	U
14093-03-9	Co-56	-2.1 +/- 4.9	8.3	U,D
13981-50-5	Co-57	0.25 +/- 0.49	0.80	U
13981-38-9	Co-58	0.6 +/- 1.5	2.4	U
10198-40-0	Co-60	0.55 +/- 0.72	1.19	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: HR-01
Lab ID: 0405097-1DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 96.7 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041123D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14392-02-0	Cr-51	-5 +/- 18	31	U
13967-70-9	Cs-134	2.13 +/- 0.58	1.03	TI
10045-97-3	Cs-137	0.15 +/- 0.68	1.13	U
14683-23-9	Eu-152	28.7 +/- 7.9	9.7	W,TI
15585-10-1	Eu-154	-3.1 +/- 5.4	9.4	U
14391-16-3	Eu-155	7.3 +/- 2.5	3.7	
14596-12-4	Fe-59	-0.3 +/- 2.7	4.6	U
10043-66-0	I-131	33 +/- 68	113	U
13966-00-2	K-40	15.7 +/- 8.4	12.9	
13966-31-9	Mn-54	1.23 +/- 0.66	1.02	SI
13966-32-0	Na-22	0.1 +/- 1.1	1.8	U
14681-63-1	Nb-94	0.95 +/- 0.98	1.60	U
13967-76-5	Nb-95	3.1 +/- 1.9	2.8	TI

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: HR-01
Lab ID: 0405097-1DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 96.7 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041123D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15100-28-4	Pa-234m	360 +/- 130	190	
15092-94-1	Pb-212	125 +/- 15	2	
15067-28-4	Pb-214	194 +/- 23	2	J
13967-48-1	Ru-106	1.8 +/- 6.1	10.2	U
14683-10-4	Sb-124	0.8 +/- 1.1	1.8	U
14234-35-6	Sb-125	3.1 +/- 1.3	2.0	TI
13967-63-0	Sc-46	0.60 +/- 0.99	1.64	U
15623-47-9	Th-227	13.5 +/- 4.0	5.8	
15065-10-8	Th-234	226 +/- 30	21	
14913-50-9	Tl-208	37.2 +/- 4.5	1.1	
15117-96-1	U-235	11.2 +/- 3.3	6.3	
13982-39-3	Zn-65	-6.0 +/- 2.7	4.8	U,W

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-01
Lab ID: 0405097-2

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 0.881 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041003D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	68 +/- 27	48	M3
14391-76-5	Ag-110m	0.9 +/- 7.8	13.4	U
14682-66-7	Al-26	-3 +/- 10	18	U
14596-10-2	Am-241	5 +/- 30	51	U
13966-02-4	Be-7	77 +/- 90	146	U
14913-49-6	Bi-212	94 +/- 99	160	U
14733-03-0	Bi-214	72 +/- 24	37	J
13982-30-4	Ce-139	-4.8 +/- 7.1	12.4	U
14762-78-8	Ce-144	5 +/- 44	74	U
14093-03-9	Co-56	-3 +/- 26	44	U
13981-50-5	Co-57	2.2 +/- 5.9	10.0	U
13981-38-9	Co-58	-8 +/- 12	22	U
10198-40-0	Co-60	-8 +/- 10	18	U
14392-02-0	Cr-51	-130 +/- 150	270	U
13967-70-9	Cs-134	33 +/- 72	118	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-01
Lab ID: 0405097-2

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 0.881 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041003D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-1.4 +/- 7.8	13.7	U
14683-23-9	Eu-152	-25 +/- 47	85	U
15585-10-1	Eu-154	-22 +/- 46	83	U
14391-16-3	Eu-155	-1 +/- 23	39	U
14596-12-4	Fe-59	21 +/- 31	51	U
10043-66-0	I-131	160 +/- 330	540	U
13966-00-2	K-40	60 +/- 110	180	U
13966-31-9	Mn-54	-13 +/- 12	23	U
13966-32-0	Na-22	-6.8 +/- 9.3	17.0	U
14681-63-1	Nb-94	0.8 +/- 7.4	12.7	U
13967-76-5	Nb-95	-1 +/- 13	22	U
15100-28-4	Pa-234m	1600 +/- 1300	2100	U
15092-94-1	Pb-212	57 +/- 15	18	
15067-28-4	Pb-214	91 +/- 22	32	J
13967-48-1	Ru-106	-78 +/- 78	141	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-01
Lab ID: 0405097-2

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 0.881 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041003D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-7 +/- 17	30	U
14234-35-6	Sb-125	10 +/- 18	29	U
13967-63-0	Sc-46	-4 +/- 11	20	U
15623-47-9	Th-227	-39 +/- 63	109	U
15065-10-8	Th-234	180 +/- 120	220	U
14913-50-9	Tl-208	9.7 +/- 7.6	12.0	U
15117-96-1	U-235	-2 +/- 46	78	U
13982-39-3	Zn-65	42 +/- 33	53	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-01
Lab ID: 0405097-2DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 90 minutes
Report Basis: Dry Weight

Final Aliquot: 0.881 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041032D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	92 +/- 46	87	M3
14391-76-5	Ag-110m	6 +/- 10	17	U
14682-66-7	Al-26	-5 +/- 14	27	U
14596-10-2	Am-241	-40 +/- 58	104	U
13966-02-4	Be-7	70 +/- 130	220	U
14913-49-6	Bi-212	140 +/- 170	280	U
14733-03-0	Bi-214	68 +/- 30	42	J
13982-30-4	Ce-139	-5.3 +/- 9.2	16.4	U
14762-78-8	Ce-144	-47 +/- 51	94	U
14093-03-9	Co-56	-2 +/- 27	49	U
13981-50-5	Co-57	5.0 +/- 6.2	10.2	U
13981-38-9	Co-58	8 +/- 16	27	U
10198-40-0	Co-60	-6 +/- 12	24	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-01
Lab ID: 0405097-2DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 90 minutes
Report Basis: Dry Weight

Final Aliquot: 0.881 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041032D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14392-02-0	Cr-51	-90 +/- 210	380	U
13967-70-9	Cs-134	-13 +/- 11	21	U
10045-97-3	Cs-137	-5 +/- 10	19	U
14683-23-9	Eu-152	30 +/- 55	93	U
15585-10-1	Eu-154	-43 +/- 61	120	U
14391-16-3	Eu-155	-7 +/- 27	48	U
14596-12-4	Fe-59	-3 +/- 40	75	U
10043-66-0	I-131	-230 +/- 440	820	U
13966-00-2	K-40	-20 +/- 160	290	U
13966-31-9	Mn-54	0 +/- 10	19	U
13966-32-0	Na-22	-6 +/- 12	24	U
14681-63-1	Nb-94	-11 +/- 12	22	U
13967-76-5	Nb-95	2 +/- 18	32	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-01
Lab ID: 0405097-2DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 90 minutes
Report Basis: Dry Weight

Final Aliquot: 0.881 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041032D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15100-28-4	Pa-234m	1200 +/- 1700	2800	U
15092-94-1	Pb-212	62 +/- 22	30	
15067-28-4	Pb-214	88 +/- 25	36	J
13967-48-1	Ru-106	0 +/- 92	167	U
14683-10-4	Sb-124	-16 +/- 18	34	U
14234-35-6	Sb-125	4 +/- 27	47	U
13967-63-0	Sc-46	-6 +/- 14	27	U
15623-47-9	Th-227	-17 +/- 80	138	U
15065-10-8	Th-234	140 +/- 170	280	U
14913-50-9	Tl-208	28 +/- 16	24	
15117-96-1	U-235	21 +/- 50	85	U
13982-39-3	Zn-65	-12 +/- 29	54	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-02
Lab ID: 0405097-3

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 0.945 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041004D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	96 +/- 37	55	M3
14391-76-5	Ag-110m	-9 +/- 11	20	U
14682-66-7	Al-26	-2 +/- 13	24	U
14596-10-2	Am-241	-34 +/- 41	74	U
13966-02-4	Be-7	-110 +/- 120	230	U
14913-49-6	Bi-212	100 +/- 140	240	U
14733-03-0	Bi-214	52 +/- 31	48	J
13982-30-4	Ce-139	-1.5 +/- 9.7	16.9	U
14762-78-8	Ce-144	28 +/- 60	101	U
14093-03-9	Co-56	-10 +/- 30	55	U
13981-50-5	Co-57	0 +/- 7.7	13.4	U
13981-38-9	Co-58	10 +/- 17	29	U
10198-40-0	Co-60	7 +/- 12	20	U
14392-02-0	Cr-51	30 +/- 210	360	U
13967-70-9	Cs-134	2 +/- 17	29	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-02
Lab ID: 0405097-3

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 0.945 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041004D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	3 +/- 10	18	U
14683-23-9	Eu-152	22 +/- 66	114	U
15585-10-1	Eu-154	35 +/- 59	99	U
14391-16-3	Eu-155	-2 +/- 30	53	U
14596-12-4	Fe-59	19 +/- 43	73	U
10043-66-0	I-131	-290 +/- 440	800	U
13966-00-2	K-40	80 +/- 140	240	U
13966-31-9	Mn-54	-11 +/- 12	22	U
13966-32-0	Na-22	-4 +/- 12	23	U
14681-63-1	Nb-94	-1 +/- 10	18	U
13967-76-5	Nb-95	-9 +/- 18	33	U
15100-28-4	Pa-234m	500 +/- 1900	3200	U
15092-94-1	Pb-212	72 +/- 23	29	
15067-28-4	Pb-214	88 +/- 25	38	J
13967-48-1	Ru-106	60 +/- 100	170	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: MR-02
Lab ID: 0405097-3

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 0.945 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041004D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-10 +/- 21	38	U
14234-35-6	Sb-125	-11 +/- 23	42	U
13967-63-0	Sc-46	-3 +/- 14	25	U
15623-47-9	Th-227	-96 +/- 83	154	U
15065-10-8	Th-234	-80 +/- 150	260	U
14913-50-9	Tl-208	24 +/- 11	16	
15117-96-1	U-235	-4 +/- 56	97	U
13982-39-3	Zn-65	-15 +/- 41	75	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-01
Lab ID: 0405097-4

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 93.9 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041216D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	9.7 +/- 1.5	1.1	M3
14391-76-5	Ag-110m	-0.11 +/- 0.25	0.46	U
14682-66-7	Al-26	-0.03 +/- 0.16	0.32	U
14596-10-2	Am-241	-0.18 +/- 0.71	1.25	U
13966-02-4	Be-7	1.0 +/- 2.2	3.7	U
14913-49-6	Bi-212	8.1 +/- 3.2	4.2	
14733-03-0	Bi-214	4.45 +/- 0.78	0.55	J
13982-30-4	Ce-139	-0.03 +/- 0.11	0.20	U
14762-78-8	Ce-144	0.60 +/- 0.73	1.19	U
14093-03-9	Co-56	0.88 +/- 0.47	0.61	TI
13981-50-5	Co-57	-0.045 +/- 0.095	0.169	U
13981-38-9	Co-58	0 +/- 0.23	0.42	U
10198-40-0	Co-60	-0.12 +/- 0.16	0.34	U
14392-02-0	Cr-51	-3.6 +/- 3.6	6.7	U
13967-70-9	Cs-134	0.61 +/- 0.24	0.30	TI

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-01
Lab ID: 0405097-4

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 93.9 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041216D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.31 +/- 0.22	0.33	U
14683-23-9	Eu-152	0.02 +/- 0.71	1.36	U
15585-10-1	Eu-154	-0.80 +/- 0.86	1.74	U
14391-16-3	Eu-155	0.56 +/- 0.48	0.77	U
14596-12-4	Fe-59	0.34 +/- 0.67	1.14	U
10043-66-0	I-131	-9 +/- 14	26	U
13966-00-2	K-40	27.8 +/- 5.3	2.9	
13966-31-9	Mn-54	0.15 +/- 0.19	0.31	U
13966-32-0	Na-22	0.02 +/- 0.17	0.31	U
14681-63-1	Nb-94	0.05 +/- 0.15	0.26	U
13967-76-5	Nb-95	0.14 +/- 0.30	0.52	U
15100-28-4	Pa-234m	20 +/- 27	44	U
15092-94-1	Pb-212	8.1 +/- 1.1	0.4	
15067-28-4	Pb-214	4.95 +/- 0.73	0.44	J
13967-48-1	Ru-106	0.3 +/- 1.4	2.4	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-01
Lab ID: 0405097-4

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 93.9 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041216D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.08 +/- 0.28	0.49	U
14234-35-6	Sb-125	0.40 +/- 0.35	0.62	U
13967-63-0	Sc-46	-0.08 +/- 0.25	0.47	U
15623-47-9	Th-227	8 +/- 20	32	U
15065-10-8	Th-234	10.2 +/- 2.8	4.0	
14913-50-9	Tl-208	2.22 +/- 0.40	0.31	
15117-96-1	U-235	0.59 +/- 0.65	1.05	U
13982-39-3	Zn-65	-0.32 +/- 0.90	1.59	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-02
Lab ID: 0405097-5

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 92.2 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041055D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	2.46 +/- 0.72	1.13	M3
14391-76-5	Ag-110m	-0.19 +/- 0.19	0.39	U
14682-66-7	Al-26	0.01 +/- 0.16	0.33	U
14596-10-2	Am-241	0.19 +/- 0.20	0.31	U
13966-02-4	Be-7	0 +/- 2.1	3.9	U
14913-49-6	Bi-212	7.7 +/- 3.7	5.0	
14733-03-0	Bi-214	3.03 +/- 0.68	0.59	J
13982-30-4	Ce-139	-0.06 +/- 0.12	0.22	U
14762-78-8	Ce-144	0.59 +/- 0.71	1.15	U
14093-03-9	Co-56	0.47 +/- 0.52	0.82	U
13981-50-5	Co-57	-0.018 +/- 0.085	0.152	U
13981-38-9	Co-58	-0.11 +/- 0.25	0.50	U
10198-40-0	Co-60	-0.15 +/- 0.19	0.43	U
14392-02-0	Cr-51	-3.0 +/- 3.8	7.4	U
13967-70-9	Cs-134	0.04 +/- 0.16	0.29	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-02
Lab ID: 0405097-5

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 92.2 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041055D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.19 +/- 0.22	0.35	U
14683-23-9	Eu-152	0.4 +/- 1.0	1.8	U
15585-10-1	Eu-154	-0.18 +/- 0.87	1.74	U
14391-16-3	Eu-155	0.27 +/- 0.27	0.43	U
14596-12-4	Fe-59	-0.31 +/- 0.75	1.52	U
10043-66-0	I-131	1 +/- 15	27	U
13966-00-2	K-40	31.6 +/- 6.5	3.5	
13966-31-9	Mn-54	0.01 +/- 0.17	0.32	U
13966-32-0	Na-22	-0.02 +/- 0.22	0.42	U
14681-63-1	Nb-94	0.02 +/- 0.16	0.29	U
13967-76-5	Nb-95	0.21 +/- 0.34	0.56	U
15100-28-4	Pa-234m	16 +/- 26	45	U
15092-94-1	Pb-212	3.47 +/- 0.58	0.35	
15067-28-4	Pb-214	3.47 +/- 0.61	0.56	J
13967-48-1	Ru-106	0.9 +/- 1.4	2.3	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-02
Lab ID: 0405097-5

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 92.2 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041055D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.07 +/- 0.29	0.51	U
14234-35-6	Sb-125	0.29 +/- 0.31	0.57	U
13967-63-0	Sc-46	-0.11 +/- 0.25	0.50	U
15623-47-9	Th-227	-1 +/- 25	40	U
15065-10-8	Th-234	4.3 +/- 1.5	2.8	
14913-50-9	Tl-208	1.12 +/- 0.30	0.28	
15117-96-1	U-235	-0.30 +/- 0.71	1.27	U
13982-39-3	Zn-65	0.1 +/- 1.0	1.7	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-03
Lab ID: 0405097-6

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 96.9 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041130D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1.30 +/- 0.47	0.95	M3
14391-76-5	Ag-110m	0 +/- 0.13	0.24	U
14682-66-7	Al-26	0.08 +/- 0.11	0.17	U
14596-10-2	Am-241	0.45 +/- 0.67	1.12	U
13966-02-4	Be-7	-0.7 +/- 1.3	2.7	U
14913-49-6	Bi-212	2.6 +/- 2.0	3.0	U
14733-03-0	Bi-214	1.81 +/- 0.44	0.41	J
13982-30-4	Ce-139	-0.008 +/- 0.083	0.149	U
14762-78-8	Ce-144	-0.60 +/- 0.49	0.96	U
14093-03-9	Co-56	0.13 +/- 0.35	0.63	U
13981-50-5	Co-57	-0.020 +/- 0.062	0.114	U
13981-38-9	Co-58	-0.02 +/- 0.16	0.32	U
10198-40-0	Co-60	0.068 +/- 0.098	0.163	U
14392-02-0	Cr-51	-0.5 +/- 2.4	4.5	U
13967-70-9	Cs-134	-0.06 +/- 0.12	0.23	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-03
Lab ID: 0405097-6

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 96.9 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041130D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.19 +/- 0.13	0.20	U
14683-23-9	Eu-152	0.07 +/- 0.58	1.11	U
15585-10-1	Eu-154	-0.35 +/- 0.63	1.29	U
14391-16-3	Eu-155	0.16 +/- 0.28	0.46	U
14596-12-4	Fe-59	-0.12 +/- 0.53	1.03	U
10043-66-0	I-131	-5 +/- 11	20	U
13966-00-2	K-40	26.0 +/- 4.9	2.0	
13966-31-9	Mn-54	-0.02 +/- 0.12	0.23	U
13966-32-0	Na-22	-0.05 +/- 0.14	0.28	U
14681-63-1	Nb-94	-0.01 +/- 0.11	0.21	U
13967-76-5	Nb-95	-0.29 +/- 0.23	0.47	U
15100-28-4	Pa-234m	2 +/- 20	37	U
15092-94-1	Pb-212	1.93 +/- 0.37	0.29	
15067-28-4	Pb-214	2.17 +/- 0.42	0.42	J
13967-48-1	Ru-106	0.5 +/- 1.0	1.7	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-03
Lab ID: 0405097-6

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 96.9 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041130D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0 +/- 0.21	0.38	U
14234-35-6	Sb-125	0.14 +/- 0.24	0.46	U
13967-63-0	Sc-46	0.03 +/- 0.18	0.34	U
15623-47-9	Th-227	0.16 +/- 0.51	0.88	U
15065-10-8	Th-234	2.3 +/- 1.7	2.7	U
14913-50-9	Tl-208	0.67 +/- 0.19	0.19	
15117-96-1	U-235	0.01 +/- 0.44	0.78	U
13982-39-3	Zn-65	0.06 +/- 0.65	1.14	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-04
Lab ID: 0405097-7

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 103 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041124D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	7.3 +/- 1.2	1.3	M3
14391-76-5	Ag-110m	-0.05 +/- 0.19	0.35	U
14682-66-7	Al-26	0.10 +/- 0.21	0.36	U
14596-10-2	Am-241	1.2 +/- 1.3	2.1	U
13966-02-4	Be-7	-2.8 +/- 3.0	5.5	U
14913-49-6	Bi-212	6.4 +/- 3.1	4.2	
14733-03-0	Bi-214	13.6 +/- 2.7	2.3	J
13982-30-4	Ce-139	0.05 +/- 0.29	0.48	U
14762-78-8	Ce-144	0.4 +/- 1.0	1.7	U
14093-03-9	Co-56	1.23 +/- 0.57	0.72	TI
13981-50-5	Co-57	0.03 +/- 0.14	0.23	U
13981-38-9	Co-58	-0.13 +/- 0.27	0.51	U
10198-40-0	Co-60	-0.18 +/- 0.22	0.43	U
14392-02-0	Cr-51	-1.0 +/- 5.0	8.8	U
13967-70-9	Cs-134	0.19 +/- 0.15	0.29	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-04
Lab ID: 0405097-7

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 103 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041124D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-0.11 +/- 0.25	0.46	U
14683-23-9	Eu-152	0.7 +/- 1.3	2.3	U
15585-10-1	Eu-154	-0.7 +/- 1.1	2.1	U
14391-16-3	Eu-155	0.27 +/- 0.53	0.89	U
14596-12-4	Fe-59	0.05 +/- 0.72	1.31	U
10043-66-0	I-131	8 +/- 18	30	U
13966-00-2	K-40	2.6 +/- 2.5	4.0	U
13966-31-9	Mn-54	0.09 +/- 0.23	0.38	U
13966-32-0	Na-22	-0.03 +/- 0.21	0.39	U
14681-63-1	Nb-94	-0.07 +/- 0.21	0.38	U
13967-76-5	Nb-95	-0.85 +/- 0.61	1.18	U
15100-28-4	Pa-234m	12 +/- 33	57	U
15092-94-1	Pb-212	8.0 +/- 1.1	0.5	
15067-28-4	Pb-214	15.4 +/- 1.9	0.7	J
13967-48-1	Ru-106	-0.6 +/- 1.7	3.2	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-04
Lab ID: 0405097-7

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 103 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041124D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.19 +/- 0.30	0.51	U
14234-35-6	Sb-125	0.38 +/- 0.52	0.93	U
13967-63-0	Sc-46	-0.11 +/- 0.28	0.53	U
15623-47-9	Th-227	-3 +/- 44	73	U
15065-10-8	Th-234	16.9 +/- 4.0	5.3	
14913-50-9	Tl-208	2.16 +/- 0.41	0.35	
15117-96-1	U-235	1.21 +/- 0.97	1.78	U
13982-39-3	Zn-65	-0.52 +/- 0.66	1.29	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-05
Lab ID: 0405097-8

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 101 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041131D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1.53 +/- 0.46	0.75	M3
14391-76-5	Ag-110m	-0.04 +/- 0.12	0.23	U
14682-66-7	Al-26	-0.060 +/- 0.084	0.217	U
14596-10-2	Am-241	0.45 +/- 0.68	1.13	U
13966-02-4	Be-7	-0.8 +/- 1.5	3.0	U
14913-49-6	Bi-212	1.7 +/- 1.3	1.9	U
14733-03-0	Bi-214	2.57 +/- 0.51	0.37	J
13982-30-4	Ce-139	-0.070 +/- 0.082	0.156	U
14762-78-8	Ce-144	-0.12 +/- 0.49	0.89	U
14093-03-9	Co-56	0.74 +/- 0.42	0.55	TI
13981-50-5	Co-57	-0.021 +/- 0.069	0.126	U
13981-38-9	Co-58	-0.06 +/- 0.16	0.32	U
10198-40-0	Co-60	-0.06 +/- 0.15	0.31	U
14392-02-0	Cr-51	-1.4 +/- 2.4	4.6	U
13967-70-9	Cs-134	-0.014 +/- 0.098	0.184	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-05
Lab ID: 0405097-8

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 101 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041131D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.12 +/- 0.13	0.21	U
14683-23-9	Eu-152	0.51 +/- 0.60	0.96	U
15585-10-1	Eu-154	-0.28 +/- 0.59	1.21	U
14391-16-3	Eu-155	0.14 +/- 0.30	0.50	U
14596-12-4	Fe-59	-0.19 +/- 0.45	0.93	U
10043-66-0	I-131	-5 +/- 10	19	U
13966-00-2	K-40	30.7 +/- 5.4	1.7	
13966-31-9	Mn-54	0.04 +/- 0.13	0.24	U
13966-32-0	Na-22	-0.06 +/- 0.12	0.26	U
14681-63-1	Nb-94	0.04 +/- 0.10	0.18	U
13967-76-5	Nb-95	-0.18 +/- 0.32	0.62	U
15100-28-4	Pa-234m	9 +/- 18	32	U
15092-94-1	Pb-212	1.95 +/- 0.38	0.32	
15067-28-4	Pb-214	3.09 +/- 0.50	0.36	J
13967-48-1	Ru-106	-0.15 +/- 0.81	1.58	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-05
Lab ID: 0405097-8

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 101 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041131D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0 +/- 0.17	0.32	U
14234-35-6	Sb-125	-0.20 +/- 0.27	0.53	U
13967-63-0	Sc-46	0.07 +/- 0.18	0.31	U
15623-47-9	Th-227	-0.17 +/- 0.72	1.29	U
15065-10-8	Th-234	5.0 +/- 2.6	3.8	TI
14913-50-9	Tl-208	0.65 +/- 0.17	0.15	
15117-96-1	U-235	-0.34 +/- 0.50	0.93	U
13982-39-3	Zn-65	-0.04 +/- 0.70	1.22	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-06
Lab ID: 0405097-9

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 89.5 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041125D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	2.93 +/- 0.74	1.09	M3
14391-76-5	Ag-110m	-0.05 +/- 0.20	0.38	U
14682-66-7	Al-26	-0.01 +/- 0.14	0.29	U
14596-10-2	Am-241	-0.56 +/- 0.76	1.39	U
13966-02-4	Be-7	-0.2 +/- 2.1	3.9	U
14913-49-6	Bi-212	4.0 +/- 2.7	4.0	
14733-03-0	Bi-214	2.54 +/- 0.58	0.57	J
13982-30-4	Ce-139	-0.07 +/- 0.11	0.21	U
14762-78-8	Ce-144	0.41 +/- 0.69	1.14	U
14093-03-9	Co-56	0.50 +/- 0.60	0.98	U
13981-50-5	Co-57	0 +/- 0.082	0.145	U
13981-38-9	Co-58	-0.08 +/- 0.18	0.37	U
10198-40-0	Co-60	0.02 +/- 0.19	0.36	U
14392-02-0	Cr-51	0.6 +/- 3.6	6.3	U
13967-70-9	Cs-134	0.01 +/- 0.13	0.23	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-06
Lab ID: 0405097-9

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 89.5 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041125D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.23 +/- 0.16	0.24	U
14683-23-9	Eu-152	0.43 +/- 0.81	1.41	U
15585-10-1	Eu-154	-0.10 +/- 0.86	1.64	U
14391-16-3	Eu-155	0.10 +/- 0.35	0.60	U
14596-12-4	Fe-59	-0.07 +/- 0.62	1.19	U
10043-66-0	I-131	0 +/- 12	22	U
13966-00-2	K-40	30.8 +/- 6.0	3.2	
13966-31-9	Mn-54	0.11 +/- 0.18	0.30	U
13966-32-0	Na-22	-0.06 +/- 0.21	0.40	U
14681-63-1	Nb-94	-0.03 +/- 0.15	0.28	U
13967-76-5	Nb-95	0.12 +/- 0.27	0.46	U
15100-28-4	Pa-234m	-10 +/- 28	54	U
15092-94-1	Pb-212	2.56 +/- 0.47	0.37	
15067-28-4	Pb-214	2.80 +/- 0.50	0.50	J
13967-48-1	Ru-106	0.3 +/- 1.4	2.5	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-06
Lab ID: 0405097-9

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 89.5 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041125D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-0.02 +/- 0.23	0.43	U
14234-35-6	Sb-125	0.16 +/- 0.35	0.60	U
13967-63-0	Sc-46	0.09 +/- 0.23	0.41	U
15623-47-9	Th-227	-6 +/- 21	34	U
15065-10-8	Th-234	4.4 +/- 2.3	3.5	TI
14913-50-9	Tl-208	0.88 +/- 0.27	0.32	
15117-96-1	U-235	0.11 +/- 0.63	1.09	U
13982-39-3	Zn-65	0.51 +/- 0.83	1.38	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-07
Lab ID: 0405097-10

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 92.0 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041217D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1.61 +/- 0.52	0.84	M3
14391-76-5	Ag-110m	-0.17 +/- 0.15	0.30	U
14682-66-7	Al-26	0.11 +/- 0.11	0.17	U
14596-10-2	Am-241	0.18 +/- 0.46	0.80	U
13966-02-4	Be-7	1.8 +/- 1.7	2.6	U
14913-49-6	Bi-212	1.1 +/- 1.7	2.9	U
14733-03-0	Bi-214	1.90 +/- 0.44	0.41	J
13982-30-4	Ce-139	0.003 +/- 0.073	0.131	U
14762-78-8	Ce-144	0.16 +/- 0.48	0.82	U
14093-03-9	Co-56	0.31 +/- 0.44	0.73	U
13981-50-5	Co-57	-0.001 +/- 0.065	0.116	U
13981-38-9	Co-58	-0.06 +/- 0.18	0.36	U
10198-40-0	Co-60	0.07 +/- 0.13	0.23	U
14392-02-0	Cr-51	-0.5 +/- 2.3	4.3	U
13967-70-9	Cs-134	-0.2 +/- 1.2	2.0	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-07
Lab ID: 0405097-10

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 92.0 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041217D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.16 +/- 0.15	0.24	U
14683-23-9	Eu-152	-0.12 +/- 0.70	1.39	U
15585-10-1	Eu-154	-0.47 +/- 0.61	1.32	U
14391-16-3	Eu-155	0.51 +/- 0.26	0.35	TI
14596-12-4	Fe-59	0.30 +/- 0.52	0.90	U
10043-66-0	I-131	0 +/- 10	19	U
13966-00-2	K-40	21.4 +/- 4.5	2.7	
13966-31-9	Mn-54	0 +/- 0.12	0.23	U
13966-32-0	Na-22	-0.08 +/- 0.15	0.31	U
14681-63-1	Nb-94	-0.01 +/- 0.11	0.20	U
13967-76-5	Nb-95	0.09 +/- 0.19	0.34	U
15100-28-4	Pa-234m	0 +/- 19	36	U
15092-94-1	Pb-212	1.90 +/- 0.36	0.27	
15067-28-4	Pb-214	2.22 +/- 0.40	0.35	J
13967-48-1	Ru-106	-0.9 +/- 1.1	2.2	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-07
Lab ID: 0405097-10

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 92.0 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041217D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.15 +/- 0.19	0.32	U
14234-35-6	Sb-125	-0.07 +/- 0.22	0.43	U
13967-63-0	Sc-46	0 +/- 0.16	0.31	U
15623-47-9	Th-227	0.15 +/- 0.71	1.21	U
15065-10-8	Th-234	2.7 +/- 2.3	3.7	U
14913-50-9	Tl-208	0.50 +/- 0.17	0.19	
15117-96-1	U-235	0.20 +/- 0.40	0.68	U
13982-39-3	Zn-65	0.45 +/- 0.57	0.94	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-08
Lab ID: 0405097-11

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 104 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041056D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1.46 +/- 0.59	1.10	M3
14391-76-5	Ag-110m	-0.04 +/- 0.14	0.27	U
14682-66-7	Al-26	-0.12 +/- 0.14	0.36	U
14596-10-2	Am-241	-0.01 +/- 0.16	0.29	U
13966-02-4	Be-7	-0.8 +/- 1.8	3.5	U
14913-49-6	Bi-212	3.3 +/- 2.2	3.1	TI
14733-03-0	Bi-214	2.94 +/- 0.64	0.49	J
13982-30-4	Ce-139	0.009 +/- 0.097	0.170	U
14762-78-8	Ce-144	0.23 +/- 0.55	0.93	U
14093-03-9	Co-56	0.25 +/- 0.59	1.02	U
13981-50-5	Co-57	0.025 +/- 0.069	0.118	U
13981-38-9	Co-58	0.06 +/- 0.18	0.33	U
10198-40-0	Co-60	0.09 +/- 0.15	0.25	U
14392-02-0	Cr-51	-2.9 +/- 3.7	7.1	U
13967-70-9	Cs-134	0.08 +/- 0.12	0.20	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-08
Lab ID: 0405097-11

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 104 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041056D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.08 +/- 0.15	0.26	U
14683-23-9	Eu-152	0.19 +/- 0.70	1.31	U
15585-10-1	Eu-154	0 +/- 0.77	1.48	U
14391-16-3	Eu-155	0.05 +/- 0.23	0.39	U
14596-12-4	Fe-59	0.20 +/- 0.62	1.12	U
10043-66-0	I-131	-3 +/- 11	21	U
13966-00-2	K-40	35.2 +/- 6.7	2.9	
13966-31-9	Mn-54	-0.10 +/- 0.15	0.32	U
13966-32-0	Na-22	0 +/- 0.16	0.32	U
14681-63-1	Nb-94	-0.08 +/- 0.13	0.25	U
13967-76-5	Nb-95	-0.17 +/- 0.25	0.51	U
15100-28-4	Pa-234m	9 +/- 26	46	U
15092-94-1	Pb-212	2.00 +/- 0.40	0.33	
15067-28-4	Pb-214	2.94 +/- 0.51	0.39	J
13967-48-1	Ru-106	-0.9 +/- 1.2	2.5	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-08
Lab ID: 0405097-11

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 104 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041056D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-0.02 +/- 0.22	0.41	U
14234-35-6	Sb-125	0.01 +/- 0.30	0.55	U
13967-63-0	Sc-46	-0.02 +/- 0.22	0.42	U
15623-47-9	Th-227	-0.06 +/- 0.78	1.39	U
15065-10-8	Th-234	3.0 +/- 1.3	2.6	
14913-50-9	Tl-208	0.64 +/- 0.21	0.21	
15117-96-1	U-235	-0.22 +/- 0.56	1.02	U
13982-39-3	Zn-65	-0.47 +/- 0.42	0.90	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-08
Lab ID: 0405097-11DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 107 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041132D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1.62 +/- 0.49	0.76	M3
14391-76-5	Ag-110m	-0.04 +/- 0.12	0.23	U
14682-66-7	Al-26	0.026 +/- 0.081	0.158	U
14596-10-2	Am-241	0.36 +/- 0.63	1.07	U
13966-02-4	Be-7	0.1 +/- 1.5	2.7	U
14913-49-6	Bi-212	0.9 +/- 1.7	3.0	U
14733-03-0	Bi-214	3.04 +/- 0.57	0.43	J
13982-30-4	Ce-139	-0.049 +/- 0.075	0.142	U
14762-78-8	Ce-144	-0.17 +/- 0.51	0.93	U
14093-03-9	Co-56	0.49 +/- 0.41	0.62	U
13981-50-5	Co-57	0.005 +/- 0.066	0.116	U
13981-38-9	Co-58	-0.04 +/- 0.16	0.32	U
10198-40-0	Co-60	-0.02 +/- 0.10	0.21	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-08
Lab ID: 0405097-11DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 107 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041132D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14392-02-0	Cr-51	-2.6 +/- 2.4	4.9	U
13967-70-9	Cs-134	-0.05 +/- 0.10	0.20	U
10045-97-3	Cs-137	0.06 +/- 0.12	0.21	U
14683-23-9	Eu-152	0.06 +/- 0.63	1.18	U
15585-10-1	Eu-154	-0.59 +/- 0.67	1.40	U
14391-16-3	Eu-155	0 +/- 0.28	0.50	U
14596-12-4	Fe-59	0.03 +/- 0.47	0.88	U
10043-66-0	I-131	1.4 +/- 9.7	17.2	U
13966-00-2	K-40	33.7 +/- 5.7	2.0	
13966-31-9	Mn-54	-0.04 +/- 0.11	0.22	U
13966-32-0	Na-22	-0.07 +/- 0.15	0.30	U
14681-63-1	Nb-94	-0.08 +/- 0.11	0.21	U
13967-76-5	Nb-95	-0.07 +/- 0.19	0.37	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-08
Lab ID: 0405097-11DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 107 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041132D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15100-28-4	Pa-234m	6 +/- 18	31	U
15092-94-1	Pb-212	2.01 +/- 0.37	0.28	
15067-28-4	Pb-214	3.26 +/- 0.51	0.37	J
13967-48-1	Ru-106	0 +/- 0.94	1.74	U
14683-10-4	Sb-124	0.01 +/- 0.18	0.33	U
14234-35-6	Sb-125	0.08 +/- 0.28	0.58	U
13967-63-0	Sc-46	-0.11 +/- 0.15	0.32	U
15623-47-9	Th-227	-0.12 +/- 0.66	1.18	U
15065-10-8	Th-234	4.0 +/- 2.1	3.1	TI
14913-50-9	Tl-208	0.36 +/- 0.14	0.17	
15117-96-1	U-235	0.51 +/- 0.48	0.76	U
13982-39-3	Zn-65	0.18 +/- 0.68	1.15	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-09
Lab ID: 0405097-12

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 108 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041126D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	2.66 +/- 0.67	1.07	M3
14391-76-5	Ag-110m	-0.10 +/- 0.16	0.30	U
14682-66-7	Al-26	-0.02 +/- 0.13	0.27	U
14596-10-2	Am-241	-0.42 +/- 0.76	1.34	U
13966-02-4	Be-7	-0.2 +/- 2.2	3.9	U
14913-49-6	Bi-212	2.3 +/- 2.3	3.7	U
14733-03-0	Bi-214	4.60 +/- 0.77	0.48	J
13982-30-4	Ce-139	-0.01 +/- 0.12	0.21	U
14762-78-8	Ce-144	-0.23 +/- 0.67	1.20	U
14093-03-9	Co-56	1.21 +/- 0.63	0.88	TI
13981-50-5	Co-57	0.052 +/- 0.089	0.148	U
13981-38-9	Co-58	-0.15 +/- 0.25	0.48	U
10198-40-0	Co-60	-0.11 +/- 0.19	0.37	U
14392-02-0	Cr-51	1.8 +/- 3.4	5.7	U
13967-70-9	Cs-134	0.01 +/- 0.12	0.22	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-09
Lab ID: 0405097-12

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 108 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041126D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-0.10 +/- 0.15	0.29	U
14683-23-9	Eu-152	1.28 +/- 0.88	1.24	TI
15585-10-1	Eu-154	-0.37 +/- 0.89	1.70	U
14391-16-3	Eu-155	-0.07 +/- 0.37	0.64	U
14596-12-4	Fe-59	0.47 +/- 0.75	1.25	U
10043-66-0	I-131	-1 +/- 12	21	U
13966-00-2	K-40	35.5 +/- 6.2	3.2	
13966-31-9	Mn-54	-0.06 +/- 0.18	0.33	U
13966-32-0	Na-22	-0.03 +/- 0.20	0.38	U
14681-63-1	Nb-94	-0.05 +/- 0.14	0.26	U
13967-76-5	Nb-95	0.03 +/- 0.33	0.57	U
15100-28-4	Pa-234m	5 +/- 24	43	U
15092-94-1	Pb-212	3.13 +/- 0.52	0.36	
15067-28-4	Pb-214	5.40 +/- 0.78	0.51	J
13967-48-1	Ru-106	-0.9 +/- 1.2	2.4	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-09
Lab ID: 0405097-12

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 108 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041126D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-0.06 +/- 0.21	0.40	U
14234-35-6	Sb-125	0.17 +/- 0.34	0.66	U
13967-63-0	Sc-46	-0.09 +/- 0.23	0.44	U
15623-47-9	Th-227	-0.9 +/- 1.1	2.1	U
15065-10-8	Th-234	4.4 +/- 2.1	3.5	
14913-50-9	Tl-208	0.81 +/- 0.23	0.25	
15117-96-1	U-235	0.48 +/- 0.65	1.06	U
13982-39-3	Zn-65	0.02 +/- 0.87	1.50	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-10
Lab ID: 0405097-13

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 99.8 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041218D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1.97 +/- 0.56	0.98	M3
14391-76-5	Ag-110m	0.02 +/- 0.12	0.22	U
14682-66-7	Al-26	-0.03 +/- 0.12	0.26	U
14596-10-2	Am-241	0.14 +/- 0.47	0.81	U
13966-02-4	Be-7	0.4 +/- 1.5	2.6	U
14913-49-6	Bi-212	2.5 +/- 2.0	3.0	U
14733-03-0	Bi-214	2.89 +/- 0.57	0.49	J
13982-30-4	Ce-139	-0.036 +/- 0.089	0.162	U
14762-78-8	Ce-144	0.19 +/- 0.48	0.82	U
14093-03-9	Co-56	0.51 +/- 0.50	0.79	U
13981-50-5	Co-57	0.013 +/- 0.071	0.123	U
13981-38-9	Co-58	-0.06 +/- 0.18	0.35	U
10198-40-0	Co-60	-0.04 +/- 0.13	0.27	U
14392-02-0	Cr-51	0 +/- 2.4	4.4	U
13967-70-9	Cs-134	-0.2 +/- 1.3	2.2	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-10
Lab ID: 0405097-13

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 99.8 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041218D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.08 +/- 0.13	0.22	U
14683-23-9	Eu-152	-0.11 +/- 0.65	1.28	U
15585-10-1	Eu-154	-0.07 +/- 0.70	1.33	U
14391-16-3	Eu-155	0.21 +/- 0.31	0.50	U
14596-12-4	Fe-59	0.27 +/- 0.53	0.92	U
10043-66-0	I-131	-0.4 +/- 9.7	17.6	U
13966-00-2	K-40	25.7 +/- 4.9	2.7	
13966-31-9	Mn-54	-0.03 +/- 0.13	0.25	U
13966-32-0	Na-22	-0.05 +/- 0.14	0.28	U
14681-63-1	Nb-94	-0.06 +/- 0.10	0.20	U
13967-76-5	Nb-95	0.09 +/- 0.22	0.38	U
15100-28-4	Pa-234m	8 +/- 22	38	U
15092-94-1	Pb-212	2.31 +/- 0.40	0.28	
15067-28-4	Pb-214	2.86 +/- 0.47	0.41	J
13967-48-1	Ru-106	-0.2 +/- 1.0	2.0	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: GR-10
Lab ID: 0405097-13

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 99.8 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041218D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-0.03 +/- 0.20	0.37	U
14234-35-6	Sb-125	0.02 +/- 0.22	0.40	U
13967-63-0	Sc-46	0.08 +/- 0.19	0.33	U
15623-47-9	Th-227	-5 +/- 18	29	U
15065-10-8	Th-234	5.0 +/- 2.1	3.1	TI
14913-50-9	Tl-208	0.83 +/- 0.21	0.20	
15117-96-1	U-235	0.43 +/- 0.48	0.78	U
13982-39-3	Zn-65	0.47 +/- 0.65	1.07	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: QM-01
Lab ID: 0405097-14

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 240 minutes
Report Basis: Dry Weight

Final Aliquot: 91.3 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041058D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	0.64 +/- 0.19	0.35	M3
14391-76-5	Ag-110m	0.019 +/- 0.044	0.075	U
14682-66-7	Al-26	-0.001 +/- 0.042	0.079	U
14596-10-2	Am-241	-0.023 +/- 0.042	0.073	U
13966-02-4	Be-7	0.46 +/- 0.63	1.03	U
14913-49-6	Bi-212	0.65 +/- 0.58	0.91	U
14733-03-0	Bi-214	0.44 +/- 0.12	0.17	J
13982-30-4	Ce-139	-0.005 +/- 0.027	0.047	U
14762-78-8	Ce-144	-0.05 +/- 0.15	0.27	U
14093-03-9	Co-56	0.07 +/- 0.15	0.25	U
13981-50-5	Co-57	-0.001 +/- 0.019	0.033	U
13981-38-9	Co-58	-0.011 +/- 0.064	0.115	U
10198-40-0	Co-60	-0.021 +/- 0.047	0.088	U
14392-02-0	Cr-51	-1.3 +/- 1.1	2.0	U
13967-70-9	Cs-134	0 +/- 0.042	0.072	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: QM-01
Lab ID: 0405097-14

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 240 minutes
Report Basis: Dry Weight

Final Aliquot: 91.3 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041058D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.219 +/- 0.058	0.064	
14683-23-9	Eu-152	0.12 +/- 0.23	0.40	U
15585-10-1	Eu-154	-0.06 +/- 0.25	0.45	U
14391-16-3	Eu-155	0.043 +/- 0.062	0.103	U
14596-12-4	Fe-59	0.10 +/- 0.21	0.35	U
10043-66-0	I-131	-2.4 +/- 5.7	10.0	U
13966-00-2	K-40	15.1 +/- 2.3	1.3	
13966-31-9	Mn-54	0.029 +/- 0.045	0.075	U
13966-32-0	Na-22	-0.013 +/- 0.049	0.090	U
14681-63-1	Nb-94	0.051 +/- 0.044	0.070	U
13967-76-5	Nb-95	-0.023 +/- 0.079	0.140	U
15100-28-4	Pa-234m	5.4 +/- 7.3	12.0	U
15092-94-1	Pb-212	0.62 +/- 0.11	0.11	
15067-28-4	Pb-214	0.56 +/- 0.11	0.14	J
13967-48-1	Ru-106	-0.01 +/- 0.39	0.68	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: QM-01
Lab ID: 0405097-14

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 240 minutes
Report Basis: Dry Weight

Final Aliquot: 91.3 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041058D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.020 +/- 0.077	0.132	U
14234-35-6	Sb-125	-0.032 +/- 0.086	0.154	U
13967-63-0	Sc-46	0.026 +/- 0.063	0.108	U
15623-47-9	Th-227	-0.09 +/- 0.23	0.40	U
15065-10-8	Th-234	0.52 +/- 0.32	0.63	U
14913-50-9	Tl-208	0.140 +/- 0.055	0.076	
15117-96-1	U-235	-0.03 +/- 0.21	0.35	U
13982-39-3	Zn-65	0.04 +/- 0.11	0.19	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: QM-02
Lab ID: 0405097-15

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 81.8 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041135D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	0.66 +/- 0.30	0.50	M3
14391-76-5	Ag-110m	0.044 +/- 0.093	0.150	U
14682-66-7	Al-26	0.034 +/- 0.075	0.134	U
14596-10-2	Am-241	-0.19 +/- 0.37	0.71	U
13966-02-4	Be-7	0.2 +/- 1.0	1.8	U
14913-49-6	Bi-212	0 +/- 1.0	1.9	U
14733-03-0	Bi-214	0.57 +/- 0.24	0.33	J
13982-30-4	Ce-139	-0.014 +/- 0.045	0.083	U
14762-78-8	Ce-144	-0.21 +/- 0.27	0.52	U
14093-03-9	Co-56	0.09 +/- 0.24	0.41	U
13981-50-5	Co-57	0.011 +/- 0.037	0.064	U
13981-38-9	Co-58	-0.07 +/- 0.11	0.22	U
10198-40-0	Co-60	0.056 +/- 0.077	0.128	U
14392-02-0	Cr-51	0.6 +/- 2.0	3.5	U
13967-70-9	Cs-134	0.045 +/- 0.070	0.122	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: QM-02
Lab ID: 0405097-15

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 81.8 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041135D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.203 +/- 0.099	0.132	
14683-23-9	Eu-152	0.12 +/- 0.29	0.52	U
15585-10-1	Eu-154	0.21 +/- 0.36	0.61	U
14391-16-3	Eu-155	-0.04 +/- 0.16	0.30	U
14596-12-4	Fe-59	-0.03 +/- 0.28	0.54	U
10043-66-0	I-131	4.4 +/- 9.5	16.2	U
13966-00-2	K-40	11.8 +/- 2.5	1.6	
13966-31-9	Mn-54	0.013 +/- 0.075	0.136	U
13966-32-0	Na-22	-0.040 +/- 0.079	0.164	U
14681-63-1	Nb-94	-0.061 +/- 0.074	0.146	U
13967-76-5	Nb-95	-0.02 +/- 0.13	0.24	U
15100-28-4	Pa-234m	0 +/- 11	21	U
15092-94-1	Pb-212	0.53 +/- 0.16	0.20	
15067-28-4	Pb-214	0.60 +/- 0.17	0.25	J
13967-48-1	Ru-106	-0.95 +/- 0.64	1.38	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: QM-02
Lab ID: 0405097-15

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 81.8 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041135D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.02 +/- 0.13	0.23	U
14234-35-6	Sb-125	-0.04 +/- 0.17	0.31	U
13967-63-0	Sc-46	0.027 +/- 0.099	0.178	U
15623-47-9	Th-227	0.19 +/- 0.29	0.48	U
15065-10-8	Th-234	0.19 +/- 0.72	1.26	U
14913-50-9	Tl-208	0.234 +/- 0.095	0.117	
15117-96-1	U-235	-0.15 +/- 0.27	0.51	U
13982-39-3	Zn-65	-0.01 +/- 0.18	0.34	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: QM-03
Lab ID: 0405097-16

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 120 minutes
Report Basis: Dry Weight

Final Aliquot: 94.6 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041130D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	0.71 +/- 0.26	0.46	M3
14391-76-5	Ag-110m	-0.005 +/- 0.076	0.134	U
14682-66-7	Al-26	0.013 +/- 0.054	0.098	U
14596-10-2	Am-241	0.17 +/- 0.26	0.42	U
13966-02-4	Be-7	-0.54 +/- 0.79	1.46	U
14913-49-6	Bi-212	0.08 +/- 0.85	1.49	U
14733-03-0	Bi-214	0.46 +/- 0.17	0.23	J
13982-30-4	Ce-139	-0.015 +/- 0.039	0.069	U
14762-78-8	Ce-144	0.04 +/- 0.23	0.39	U
14093-03-9	Co-56	0.15 +/- 0.20	0.33	U
13981-50-5	Co-57	-0.012 +/- 0.030	0.053	U
13981-38-9	Co-58	-0.033 +/- 0.083	0.154	U
10198-40-0	Co-60	-0.008 +/- 0.063	0.116	U
14392-02-0	Cr-51	0.7 +/- 1.4	2.3	U
13967-70-9	Cs-134	-0.017 +/- 0.079	0.139	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: QM-03
Lab ID: 0405097-16

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 120 minutes
Report Basis: Dry Weight

Final Aliquot: 94.6 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041130D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.367 +/- 0.092	0.098	
14683-23-9	Eu-152	0.04 +/- 0.29	0.53	U
15585-10-1	Eu-154	0.05 +/- 0.32	0.56	U
14391-16-3	Eu-155	0.119 +/- 0.091	0.141	U
14596-12-4	Fe-59	0.09 +/- 0.29	0.51	U
10043-66-0	I-131	2.7 +/- 7.0	11.8	U
13966-00-2	K-40	15.9 +/- 2.5	1.4	
13966-31-9	Mn-54	0.058 +/- 0.059	0.095	U
13966-32-0	Na-22	-0.021 +/- 0.077	0.141	U
14681-63-1	Nb-94	0.068 +/- 0.056	0.089	U
13967-76-5	Nb-95	0 +/- 0.10	0.18	U
15100-28-4	Pa-234m	-2 +/- 11	20	U
15092-94-1	Pb-212	0.52 +/- 0.13	0.16	
15067-28-4	Pb-214	0.42 +/- 0.12	0.18	J
13967-48-1	Ru-106	0.11 +/- 0.51	0.88	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: QM-03
Lab ID: 0405097-16

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 120 minutes
Report Basis: Dry Weight

Final Aliquot: 94.6 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041130D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.02 +/- 0.11	0.18	U
14234-35-6	Sb-125	0 +/- 0.13	0.23	U
13967-63-0	Sc-46	-0.079 +/- 0.082	0.158	U
15623-47-9	Th-227	-0.20 +/- 0.37	0.65	U
15065-10-8	Th-234	0.58 +/- 0.85	1.40	U
14913-50-9	Tl-208	0.161 +/- 0.074	0.105	
15117-96-1	U-235	-0.10 +/- 0.20	0.35	U
13982-39-3	Zn-65	-0.09 +/- 0.18	0.33	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 300-01
Lab ID: 0405097-17

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 1.37 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041005D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	950 +/- 130	80	M3
14391-76-5	Ag-110m	-6 +/- 12	22	U
14682-66-7	Al-26	4 +/- 13	22	U
14596-10-2	Am-241	62 +/- 57	92	U
13966-02-4	Be-7	80 +/- 150	250	U
14913-49-6	Bi-212	450 +/- 210	300	
14733-03-0	Bi-214	660 +/- 140	150	J
13982-30-4	Ce-139	-9 +/- 13	23	U
14762-78-8	Ce-144	-115 +/- 86	149	U
14093-03-9	Co-56	86 +/- 44	67	TI
13981-50-5	Co-57	0 +/- 11	18	U
13981-38-9	Co-58	-10 +/- 18	33	U
10198-40-0	Co-60	1 +/- 14	24	U
14392-02-0	Cr-51	-120 +/- 260	460	U
13967-70-9	Cs-134	11 +/- 10	19	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 300-01
Lab ID: 0405097-17

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 1.37 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041005D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-5 +/- 13	22	U
14683-23-9	Eu-152	71 +/- 80	131	U
15585-10-1	Eu-154	37 +/- 62	104	U
14391-16-3	Eu-155	44 +/- 43	69	U
14596-12-4	Fe-59	-8 +/- 45	78	U
10043-66-0	I-131	90 +/- 660	1120	U
13966-00-2	K-40	70 +/- 120	200	U
13966-31-9	Mn-54	3 +/- 15	25	U
13966-32-0	Na-22	-17 +/- 16	28	U
14681-63-1	Nb-94	12 +/- 12	19	U
13967-76-5	Nb-95	-40 +/- 31	56	U
15100-28-4	Pa-234m	2800 +/- 1800	2800	TI
15092-94-1	Pb-212	512 +/- 68	32	
15067-28-4	Pb-214	830 +/- 100	40	J
13967-48-1	Ru-106	-20 +/- 110	190	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 300-01
Lab ID: 0405097-17

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 1.37 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041005D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-6 +/- 20	34	U
14234-35-6	Sb-125	8 +/- 29	48	U
13967-63-0	Sc-46	-4 +/- 17	29	U
15623-47-9	Th-227	600 +/- 1300	2200	U
15065-10-8	Th-234	960 +/- 240	370	
14913-50-9	Tl-208	130 +/- 21	16	
15117-96-1	U-235	58 +/- 58	94	U
13982-39-3	Zn-65	-29 +/- 48	85	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 300-02
Lab ID: 0405097-18

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 97.1 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041220D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	50.4 +/- 6.2	2.2	M3
14391-76-5	Ag-110m	-0.38 +/- 0.38	0.68	U
14682-66-7	Al-26	0.11 +/- 0.35	0.60	U
14596-10-2	Am-241	-0.1 +/- 1.6	2.7	U
13966-02-4	Be-7	3.8 +/- 4.8	7.8	U
14913-49-6	Bi-212	54.3 +/- 9.4	7.9	
14733-03-0	Bi-214	42.3 +/- 6.3	4.1	J
13982-30-4	Ce-139	0.08 +/- 0.27	0.45	U
14762-78-8	Ce-144	-0.2 +/- 1.7	2.9	U
14093-03-9	Co-56	0.1 +/- 2.0	3.4	U
13981-50-5	Co-57	0.11 +/- 0.22	0.37	U
13981-38-9	Co-58	-0.64 +/- 0.53	0.97	U
10198-40-0	Co-60	-0.06 +/- 0.38	0.66	U
14392-02-0	Cr-51	1.7 +/- 7.9	13.3	U
13967-70-9	Cs-134	0.75 +/- 0.27	0.53	TI

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 300-02
Lab ID: 0405097-18

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 97.1 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041220D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.34 +/- 0.36	0.59	U
14683-23-9	Eu-152	3.8 +/- 2.0	3.0	TI
15585-10-1	Eu-154	-2.1 +/- 2.4	4.4	U
14391-16-3	Eu-155	2.5 +/- 1.1	1.8	
14596-12-4	Fe-59	-0.8 +/- 1.3	2.4	U
10043-66-0	I-131	-3 +/- 30	52	U
13966-00-2	K-40	13.8 +/- 5.4	7.6	
13966-31-9	Mn-54	0.21 +/- 0.41	0.68	U
13966-32-0	Na-22	-0.22 +/- 0.54	0.96	U
14681-63-1	Nb-94	0.33 +/- 0.32	0.52	U
13967-76-5	Nb-95	-0.9 +/- 1.0	1.8	U
15100-28-4	Pa-234m	43 +/- 51	83	U
15092-94-1	Pb-212	48.2 +/- 5.8	0.8	
15067-28-4	Pb-214	46.7 +/- 5.6	1.0	J
13967-48-1	Ru-106	-1.5 +/- 3.3	5.7	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 300-02
Lab ID: 0405097-18

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 97.1 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041220D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.07 +/- 0.55	0.94	U
14234-35-6	Sb-125	0.34 +/- 0.77	1.29	U
13967-63-0	Sc-46	-0.41 +/- 0.50	0.90	U
15623-47-9	Th-227	2.6 +/- 1.7	2.7	U
15065-10-8	Th-234	81 +/- 12	10	
14913-50-9	Tl-208	14.4 +/- 1.8	0.6	
15117-96-1	U-235	2.6 +/- 1.4	2.2	
13982-39-3	Zn-65	-1.3 +/- 1.2	2.1	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-01
Lab ID: 0405097-19

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041007D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1150 +/- 140	60	M3
14391-76-5	Ag-110m	-10.8 +/- 9.0	15.8	U
14682-66-7	Al-26	0.4 +/- 9.1	15.7	U
14596-10-2	Am-241	57 +/- 43	69	U
13966-02-4	Be-7	80 +/- 100	170	U
14913-49-6	Bi-212	750 +/- 160	190	
14733-03-0	Bi-214	950 +/- 120	30	J
13982-30-4	Ce-139	-15 +/- 13	22	U
14762-78-8	Ce-144	-2 +/- 61	103	U
14093-03-9	Co-56	104 +/- 48	71	TI
13981-50-5	Co-57	1.1 +/- 8.3	13.9	U
13981-38-9	Co-58	-1 +/- 20	33	U
10198-40-0	Co-60	-6 +/- 10	18	U
14392-02-0	Cr-51	40 +/- 180	300	U
13967-70-9	Cs-134	11 +/- 95	156	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-01
Lab ID: 0405097-19

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041007D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-11 +/- 13	23	U
14683-23-9	Eu-152	83 +/- 42	63	TI
15585-10-1	Eu-154	-25 +/- 71	122	U
14391-16-3	Eu-155	35 +/- 22	34	
14596-12-4	Fe-59	3 +/- 33	57	U
10043-66-0	I-131	-140 +/- 380	640	U
13966-00-2	K-40	90 +/- 110	170	U
13966-31-9	Mn-54	15.1 +/- 8.9	13.8	SI
13966-32-0	Na-22	-7 +/- 15	26	U
14681-63-1	Nb-94	-0.1 +/- 8.7	14.7	U
13967-76-5	Nb-95	-52 +/- 23	41	U
15100-28-4	Pa-234m	1200 +/- 1000	1700	U
15092-94-1	Pb-212	612 +/- 76	23	
15067-28-4	Pb-214	1060 +/- 130	30	J
13967-48-1	Ru-106	110 +/- 80	126	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-01
Lab ID: 0405097-19

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041007D10A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-3 +/- 15	25	U
14234-35-6	Sb-125	22 +/- 21	34	U
13967-63-0	Sc-46	-14 +/- 12	21	U
15623-47-9	Th-227	100 +/- 1100	1800	U
15065-10-8	Th-234	1830 +/- 280	310	
14913-50-9	Tl-208	171 +/- 23	13	
15117-96-1	U-235	148 +/- 47	97	
13982-39-3	Zn-65	-47 +/- 36	63	U
14331-85-2	Pa-231	270 +/- 350	580	U,M

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-01
Lab ID: 0405097-19DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040959D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1100 +/- 150	100	M3
14391-76-5	Ag-110m	-14 +/- 16	31	U
14682-66-7	Al-26	-10 +/- 14	30	U
14596-10-2	Am-241	20 +/- 29	47	U
13966-02-4	Be-7	90 +/- 210	350	U
14913-49-6	Bi-212	840 +/- 310	420	
14733-03-0	Bi-214	1000 +/- 210	210	J
13982-30-4	Ce-139	-12 +/- 15	27	U
14762-78-8	Ce-144	54 +/- 94	155	U
14093-03-9	Co-56	107 +/- 88	129	U
13981-50-5	Co-57	-5 +/- 12	20	U
13981-38-9	Co-58	-30 +/- 23	45	U
10198-40-0	Co-60	-4 +/- 17	32	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-01
Lab ID: 0405097-19DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040959D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14392-02-0	Cr-51	110 +/- 370	630	U
13967-70-9	Cs-134	15 +/- 12	25	U
10045-97-3	Cs-137	-5 +/- 27	47	U
14683-23-9	Eu-152	126 +/- 97	146	U
15585-10-1	Eu-154	-76 +/- 82	162	U
14391-16-3	Eu-155	74 +/- 45	70	
14596-12-4	Fe-59	-30 +/- 61	114	U
10043-66-0	I-131	-130 +/- 730	1270	U
13966-00-2	K-40	80 +/- 190	320	U
13966-31-9	Mn-54	1 +/- 18	31	U
13966-32-0	Na-22	-7 +/- 16	31	U
14681-63-1	Nb-94	11 +/- 17	28	U
13967-76-5	Nb-95	25 +/- 42	67	U,W

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-01
Lab ID: 0405097-19DUP

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040959D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15100-28-4	Pa-234m	2000 +/- 2600	4200	U
15092-94-1	Pb-212	569 +/- 79	40	
15067-28-4	Pb-214	1040 +/- 130	60	J
13967-48-1	Ru-106	40 +/- 150	250	U
14683-10-4	Sb-124	-3 +/- 23	40	U
14234-35-6	Sb-125	32 +/- 38	61	U
13967-63-0	Sc-46	-10 +/- 18	35	U
15623-47-9	Th-227	600 +/- 1900	3100	U
15065-10-8	Th-234	1200 +/- 230	340	W
14913-50-9	Tl-208	154 +/- 32	31	
15117-96-1	U-235	194 +/- 86	143	
13982-39-3	Zn-65	43 +/- 58	90	U
14331-85-2	Pa-231	-220 +/- 680	1160	U,M

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 halflives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-02
Lab ID: 0405097-20

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 119 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041221D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	249 +/- 29	5	M3,G
14391-76-5	Ag-110m	-0.35 +/- 0.77	1.33	U,G
14682-66-7	Al-26	-0.35 +/- 0.76	1.32	U,G
14596-10-2	Am-241	2.6 +/- 3.8	6.2	U,G
13966-02-4	Be-7	-9 +/- 14	24	U,G
14913-49-6	Bi-212	264 +/- 34	17	G
14733-03-0	Bi-214	323 +/- 38	2	G,J
13982-30-4	Ce-139	0.13 +/- 0.62	1.02	U,G
14762-78-8	Ce-144	-0.8 +/- 3.9	6.5	U,G
14093-03-9	Co-56	-4.4 +/- 5.5	9.2	U,G
13981-50-5	Co-57	-0.01 +/- 0.51	0.84	U,G
13981-38-9	Co-58	0.1 +/- 1.1	1.8	U,G
10198-40-0	Co-60	-0.56 +/- 0.83	1.41	U,G
14392-02-0	Cr-51	5 +/- 18	29	U,G
13967-70-9	Cs-134	3.41 +/- 0.69	1.13	G,TI

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-02
Lab ID: 0405097-20

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 119 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041221D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-0.7 +/- 1.1	1.9	U,G
14683-23-9	Eu-152	2.5 +/- 3.5	6.1	U,G
15585-10-1	Eu-154	7.7 +/- 5.1	7.8	U,G
14391-16-3	Eu-155	17.9 +/- 3.3	3.9	G
14596-12-4	Fe-59	-1.3 +/- 4.1	6.9	U,G
10043-66-0	I-131	-10 +/- 70	117	U,G
13966-00-2	K-40	22.4 +/- 9.5	14.3	G
13966-31-9	Mn-54	3.28 +/- 0.85	1.15	G,SI
13966-32-0	Na-22	0.60 +/- 0.75	1.23	U,G
14681-63-1	Nb-94	1.11 +/- 0.64	1.01	G,SI
13967-76-5	Nb-95	5.0 +/- 1.9	2.7	G,TI
15100-28-4	Pa-234m	610 +/- 130	160	G
15092-94-1	Pb-212	235 +/- 28	2	G
15067-28-4	Pb-214	342 +/- 40	2	G,J
13967-48-1	Ru-106	5.1 +/- 6.8	11.3	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

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R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-02
Lab ID: 0405097-20

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 01-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 119 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041221D04A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.1 +/- 1.2	2.0	U,G
14234-35-6	Sb-125	5.4 +/- 1.5	2.3	G,TI
13967-63-0	Sc-46	-0.2 +/- 1.1	1.8	U,G
15623-47-9	Th-227	32.3 +/- 6.0	7.2	G
15065-10-8	Th-234	469 +/- 57	23	G
14913-50-9	Tl-208	71.0 +/- 9.5	8.4	G
15117-96-1	U-235	22.5 +/- 3.9	5.8	G
13982-39-3	Zn-65	-4.6 +/- 2.5	4.4	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-03
Lab ID: 0405097-21

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.04 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041033D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1220 +/- 170	120	M3
14391-76-5	Ag-110m	12 +/- 19	32	U
14682-66-7	Al-26	-9 +/- 22	43	U
14596-10-2	Am-241	40 +/- 120	210	U
13966-02-4	Be-7	-110 +/- 250	450	U
14913-49-6	Bi-212	680 +/- 310	430	
14733-03-0	Bi-214	970 +/- 210	190	J
13982-30-4	Ce-139	-10 +/- 20	35	U
14762-78-8	Ce-144	10 +/- 110	190	U
14093-03-9	Co-56	123 +/- 54	72	TI
13981-50-5	Co-57	21 +/- 15	24	U
13981-38-9	Co-58	-13 +/- 27	50	U
10198-40-0	Co-60	3 +/- 21	37	U
14392-02-0	Cr-51	-80 +/- 420	730	U
13967-70-9	Cs-134	26 +/- 15	30	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-03
Lab ID: 0405097-21

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.04 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041033D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-32 +/- 21	39	U
14683-23-9	Eu-152	70 +/- 120	210	U
15585-10-1	Eu-154	40 +/- 100	170	U
14391-16-3	Eu-155	121 +/- 66	102	TI
14596-12-4	Fe-59	-21 +/- 61	113	U
10043-66-0	I-131	-340 +/- 770	1370	U
13966-00-2	K-40	330 +/- 240	370	U
13966-31-9	Mn-54	27 +/- 23	35	U
13966-32-0	Na-22	-16 +/- 20	39	U
14681-63-1	Nb-94	12 +/- 19	32	U
13967-76-5	Nb-95	-300 +/- 470	780	U
15100-28-4	Pa-234m	-1000 +/- 3000	5600	U
15092-94-1	Pb-212	671 +/- 95	54	
15067-28-4	Pb-214	1190 +/- 150	60	J
13967-48-1	Ru-106	-30 +/- 180	310	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

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G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-03
Lab ID: 0405097-21

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.04 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041033D03A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-1 +/- 29	51	U
14234-35-6	Sb-125	21 +/- 52	88	U
13967-63-0	Sc-46	-22 +/- 25	48	U
15623-47-9	Th-227	20 +/- 170	280	U
15065-10-8	Th-234	1230 +/- 360	530	
14913-50-9	Tl-208	200 +/- 38	34	
15117-96-1	U-235	90 +/- 120	190	U
13982-39-3	Zn-65	-480 +/- 200	340	U
14331-85-2	Pa-231	-20 +/- 830	1400	U,M

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-04
Lab ID: 0405097-22

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040611-1D
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 1.53 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041401D01B

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	191 +/- 37	51	M3
14391-76-5	Ag-110m	-4.4 +/- 7.7	14.0	U
14682-66-7	Al-26	-2.8 +/- 7.4	14.0	U
14596-10-2	Am-241	-1 +/- 62	106	U
13966-02-4	Be-7	-60 +/- 100	180	U
14913-49-6	Bi-212	50 +/- 110	190	U
14733-03-0	Bi-214	232 +/- 37	26	J
13982-30-4	Ce-139	16.5 +/- 9.3	14.2	TI
14762-78-8	Ce-144	-25 +/- 61	106	U
14093-03-9	Co-56	48 +/- 17	20	TI
13981-50-5	Co-57	0 +/- 7.4	12.7	U
13981-38-9	Co-58	5 +/- 12	20	U
10198-40-0	Co-60	-7.5 +/- 8.4	16.0	U
14392-02-0	Cr-51	-100 +/- 170	300	U
13967-70-9	Cs-134	10 +/- 66	109	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-04
Lab ID: 0405097-22

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040611-1D
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 1.53 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041401D01B

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-3.2 +/- 7.7	13.9	U
14683-23-9	Eu-152	28 +/- 43	72	U
15585-10-1	Eu-154	26 +/- 38	63	U
14391-16-3	Eu-155	-3 +/- 32	55	U
14596-12-4	Fe-59	9 +/- 24	42	U
10043-66-0	I-131	-10 +/- 340	590	U
13966-00-2	K-40	61 +/- 84	139	U
13966-31-9	Mn-54	2.3 +/- 8.7	15.0	U
13966-32-0	Na-22	5.4 +/- 6.7	10.9	U
14681-63-1	Nb-94	1.4 +/- 8.0	13.8	U
13967-76-5	Nb-95	14 +/- 13	20	U
15100-28-4	Pa-234m	500 +/- 1200	2100	U
15092-94-1	Pb-212	146 +/- 27	25	
15067-28-4	Pb-214	256 +/- 37	25	J
13967-48-1	Ru-106	-62 +/- 75	137	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 700-04
Lab ID: 0405097-22

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040611-1D
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 1.53 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041401D01B

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-7 +/- 14	25	U
14234-35-6	Sb-125	-15 +/- 20	36	U
13967-63-0	Sc-46	-7.0 +/- 8.7	16.6	U
15623-47-9	Th-227	-333 +/- 92	167	U
15065-10-8	Th-234	360 +/- 200	320	TI
14913-50-9	Tl-208	40 +/- 11	12	
15117-96-1	U-235	61 +/- 56	90	U
13982-39-3	Zn-65	-5 +/- 26	46	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-01
Lab ID: 0405097-23

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 1.16 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040955D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	156 +/- 77	134	M3
14391-76-5	Ag-110m	20 +/- 17	24	U
14682-66-7	Al-26	-5 +/- 14	37	U
14596-10-2	Am-241	-3 +/- 29	52	U
13966-02-4	Be-7	-20 +/- 230	440	U
14913-49-6	Bi-212	130 +/- 330	580	U
14733-03-0	Bi-214	242 +/- 69	62	J
13982-30-4	Ce-139	4 +/- 15	27	U
14762-78-8	Ce-144	53 +/- 75	124	U
14093-03-9	Co-56	58 +/- 52	76	U
13981-50-5	Co-57	4 +/- 11	19	U
13981-38-9	Co-58	-13 +/- 23	50	U
10198-40-0	Co-60	-6 +/- 14	34	U
14392-02-0	Cr-51	110 +/- 360	640	U
13967-70-9	Cs-134	3 +/- 16	29	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-01
Lab ID: 0405097-23

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 1.16 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040955D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-14 +/- 19	39	U
14683-23-9	Eu-152	-10 +/- 100	210	U
15585-10-1	Eu-154	-72 +/- 90	208	U
14391-16-3	Eu-155	8 +/- 34	59	U
14596-12-4	Fe-59	-3 +/- 49	106	U
10043-66-0	I-131	-350 +/- 730	1430	U
13966-00-2	K-40	50 +/- 250	460	U
13966-31-9	Mn-54	2 +/- 18	35	U
13966-32-0	Na-22	-27 +/- 19	50	U
14681-63-1	Nb-94	-5 +/- 20	38	U
13967-76-5	Nb-95	-2 +/- 32	61	U
15100-28-4	Pa-234m	1100 +/- 3000	5400	U
15092-94-1	Pb-212	126 +/- 42	52	
15067-28-4	Pb-214	279 +/- 59	64	J
13967-48-1	Ru-106	50 +/- 170	310	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

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SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

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G - Sample density differs by more than 15% of LCS density.

Abbreviations:

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MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-01
Lab ID: 0405097-23

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 22-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 1.16 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040955D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0 +/- 26	49	U
14234-35-6	Sb-125	18 +/- 40	70	U
13967-63-0	Sc-46	0 +/- 22	44	U
15623-47-9	Th-227	0 +/- 100	180	U
15065-10-8	Th-234	250 +/- 210	330	U
14913-50-9	Tl-208	31 +/- 22	31	U
15117-96-1	U-235	19 +/- 86	148	U
13982-39-3	Zn-65	-19 +/- 61	120	U
14331-85-2	Pa-231	-10 +/- 600	1080	U,M

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-02
Lab ID: 0405097-24

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.93 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041030D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	810 +/- 110	60	M3
14391-76-5	Ag-110m	7 +/- 10	17	U
14682-66-7	Al-26	-5.3 +/- 9.6	19.2	U
14596-10-2	Am-241	11 +/- 22	36	U
13966-02-4	Be-7	60 +/- 140	230	U
14913-49-6	Bi-212	530 +/- 180	230	
14733-03-0	Bi-214	920 +/- 160	100	J
13982-30-4	Ce-139	-14 +/- 17	29	U
14762-78-8	Ce-144	5 +/- 59	100	U
14093-03-9	Co-56	185 +/- 68	81	TI
13981-50-5	Co-57	8.1 +/- 7.3	11.8	U
13981-38-9	Co-58	-10 +/- 14	26	U
10198-40-0	Co-60	-7 +/- 11	21	U
14392-02-0	Cr-51	-30 +/- 230	400	U
13967-70-9	Cs-134	0 +/- 10	18	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-02
Lab ID: 0405097-24

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.93 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041030D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-5 +/- 10	19	U
14683-23-9	Eu-152	95 +/- 50	67	TI
15585-10-1	Eu-154	-24 +/- 69	126	U
14391-16-3	Eu-155	25 +/- 20	33	U
14596-12-4	Fe-59	-11 +/- 35	65	U
10043-66-0	I-131	250 +/- 460	770	U
13966-00-2	K-40	100 +/- 120	190	U
13966-31-9	Mn-54	1 +/- 12	20	U
13966-32-0	Na-22	-7 +/- 11	21	U
14681-63-1	Nb-94	-3 +/- 11	19	U
13967-76-5	Nb-95	-30 +/- 27	51	U
15100-28-4	Pa-234m	1900 +/- 1300	1900	U
15092-94-1	Pb-212	538 +/- 70	28	
15067-28-4	Pb-214	990 +/- 120	30	J
13967-48-1	Ru-106	13 +/- 92	160	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-02
Lab ID: 0405097-24

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.93 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041030D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-9 +/- 17	30	U
14234-35-6	Sb-125	5 +/- 28	47	U
13967-63-0	Sc-46	-13 +/- 15	28	U
15623-47-9	Th-227	1 +/- 54	92	U
15065-10-8	Th-234	1050 +/- 170	210	
14913-50-9	Tl-208	166 +/- 26	16	G
15117-96-1	U-235	152 +/- 57	94	
13982-39-3	Zn-65	1 +/- 31	54	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-03
Lab ID: 0405097-25

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040960D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	200 +/- 48	69	M3
14391-76-5	Ag-110m	-5.2 +/- 8.8	17.6	U
14682-66-7	Al-26	7.4 +/- 6.6	4.0	TI
14596-10-2	Am-241	0 +/- 14	24	U
13966-02-4	Be-7	-10 +/- 110	210	U
14913-49-6	Bi-212	260 +/- 150	210	
14733-03-0	Bi-214	161 +/- 36	33	J
13982-30-4	Ce-139	4.6 +/- 7.7	12.9	U
14762-78-8	Ce-144	10 +/- 48	83	U
14093-03-9	Co-56	5 +/- 25	47	U
13981-50-5	Co-57	-3.8 +/- 6.2	11.1	U
13981-38-9	Co-58	-5 +/- 13	26	U
10198-40-0	Co-60	-7 +/- 10	22	U
14392-02-0	Cr-51	160 +/- 210	340	U
13967-70-9	Cs-134	8.5 +/- 6.2	13.0	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-03
Lab ID: 0405097-25

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040960D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-6.3 +/- 9.9	19.4	U
14683-23-9	Eu-152	28 +/- 56	97	U
15585-10-1	Eu-154	-24 +/- 51	104	U
14391-16-3	Eu-155	21 +/- 20	32	U
14596-12-4	Fe-59	-24 +/- 30	67	U
10043-66-0	I-131	-50 +/- 410	750	U
13966-00-2	K-40	20 +/- 130	240	U
13966-31-9	Mn-54	3.2 +/- 9.8	17.4	U
13966-32-0	Na-22	0 +/- 9.3	18.2	U
14681-63-1	Nb-94	7 +/- 10	17	U
13967-76-5	Nb-95	-10 +/- 15	29	U
15100-28-4	Pa-234m	1100 +/- 1600	2600	U
15092-94-1	Pb-212	124 +/- 26	25	
15067-28-4	Pb-214	157 +/- 31	36	J
13967-48-1	Ru-106	-18 +/- 81	154	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-03
Lab ID: 0405097-25

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.45 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040960D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	-7 +/- 13	26	U
14234-35-6	Sb-125	15 +/- 22	36	U
13967-63-0	Sc-46	-9 +/- 11	24	U
15623-47-9	Th-227	19 +/- 64	107	U
15065-10-8	Th-234	300 +/- 110	190	
14913-50-9	Tl-208	38 +/- 16	21	
15117-96-1	U-235	38 +/- 48	79	U
13982-39-3	Zn-65	-27 +/- 59	105	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-04
Lab ID: 0405097-26

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 02-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 99.3 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041139D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	124 +/- 15	3	M3
14391-76-5	Ag-110m	0.48 +/- 0.50	0.87	U
14682-66-7	Al-26	0.04 +/- 0.41	0.71	U
14596-10-2	Am-241	1.3 +/- 3.7	6.2	U
13966-02-4	Be-7	-1.5 +/- 7.2	12.1	U
14913-49-6	Bi-212	116 +/- 17	12	
14733-03-0	Bi-214	113 +/- 13	2	J
13982-30-4	Ce-139	0.40 +/- 0.33	0.53	U
14762-78-8	Ce-144	-2.3 +/- 2.9	4.8	U
14093-03-9	Co-56	-16.5 +/- 4.2	7.1	U
13981-50-5	Co-57	0.11 +/- 0.36	0.61	U
13981-38-9	Co-58	0.13 +/- 0.72	1.22	U
10198-40-0	Co-60	-0.32 +/- 0.47	0.83	U
14392-02-0	Cr-51	2 +/- 13	22	U
13967-70-9	Cs-134	1.35 +/- 0.41	0.78	TI

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-04
Lab ID: 0405097-26

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 02-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 99.3 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041139D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.43 +/- 0.38	0.62	U
14683-23-9	Eu-152	14.8 +/- 5.1	6.6	TI
15585-10-1	Eu-154	-3.7 +/- 3.5	6.2	U
14391-16-3	Eu-155	6.7 +/- 2.2	3.2	
14596-12-4	Fe-59	-2.0 +/- 2.1	3.6	U
10043-66-0	I-131	-16 +/- 53	90	U
13966-00-2	K-40	27.6 +/- 7.9	10.5	
13966-31-9	Mn-54	2.22 +/- 0.61	0.80	SI
13966-32-0	Na-22	0.43 +/- 0.47	0.77	U
14681-63-1	Nb-94	0.47 +/- 0.52	0.86	U
13967-76-5	Nb-95	-2.2 +/- 1.3	2.3	U
15100-28-4	Pa-234m	215 +/- 89	129	
15092-94-1	Pb-212	109 +/- 13	1	
15067-28-4	Pb-214	127 +/- 15	2	J
13967-48-1	Ru-106	-1.6 +/- 4.7	8.0	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-04
Lab ID: 0405097-26

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 02-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 99.3 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041139D02A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.42 +/- 0.81	1.34	U
14234-35-6	Sb-125	6.1 +/- 1.7	2.7	TI
13967-63-0	Sc-46	-0.18 +/- 0.96	1.64	U
15623-47-9	Th-227	10.1 +/- 3.0	4.4	
15065-10-8	Th-234	200 +/- 26	17	
14913-50-9	Tl-208	31.5 +/- 3.8	0.9	
15117-96-1	U-235	8.9 +/- 2.5	4.2	
13982-39-3	Zn-65	-1.4 +/- 1.7	3.0	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-05
Lab ID: 0405097-27

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 02-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 95.0 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041061D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	115 +/- 14	4	M3
14391-76-5	Ag-110m	-0.24 +/- 0.64	1.19	U
14682-66-7	Al-26	0.66 +/- 0.57	0.90	U
14596-10-2	Am-241	2.44 +/- 0.95	1.45	TI
13966-02-4	Be-7	-5.1 +/- 8.7	14.9	U
14913-49-6	Bi-212	117 +/- 19	15	
14733-03-0	Bi-214	97 +/- 12	2	J
13982-30-4	Ce-139	-0.84 +/- 0.53	0.89	U
14762-78-8	Ce-144	0.2 +/- 3.0	5.1	U
14093-03-9	Co-56	15.3 +/- 4.0	4.4	TI
13981-50-5	Co-57	0.11 +/- 0.37	0.61	U
13981-38-9	Co-58	0.36 +/- 0.82	1.37	U
10198-40-0	Co-60	-0.12 +/- 0.57	1.01	U
14392-02-0	Cr-51	5 +/- 16	26	U
13967-70-9	Cs-134	1.58 +/- 0.47	0.85	TI

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

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MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-05
Lab ID: 0405097-27

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 02-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 95.0 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041061D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0.70 +/- 0.65	1.06	U
14683-23-9	Eu-152	8.1 +/- 3.6	5.1	TI
15585-10-1	Eu-154	-4.3 +/- 3.9	7.2	U
14391-16-3	Eu-155	8.9 +/- 1.9	2.4	
14596-12-4	Fe-59	-2.2 +/- 2.3	4.2	U
10043-66-0	I-131	61 +/- 59	96	U
13966-00-2	K-40	22.4 +/- 8.0	10.8	
13966-31-9	Mn-54	1.71 +/- 0.56	0.73	SI
13966-32-0	Na-22	-0.22 +/- 0.59	1.06	U
14681-63-1	Nb-94	0.74 +/- 0.69	1.12	U
13967-76-5	Nb-95	-3.0 +/- 2.0	3.4	U
15100-28-4	Pa-234m	199 +/- 82	113	
15092-94-1	Pb-212	101 +/- 12	1	
15067-28-4	Pb-214	104 +/- 12	2	J
13967-48-1	Ru-106	-1.5 +/- 5.3	9.2	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

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SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

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G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: 900-05
Lab ID: 0405097-27

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 07-May-04
Date Prepared: 14-Jun-04
Date Analyzed: 02-Jul-04

Prep Batch: GS040614-2
QCBatchID: GS040614-2-1
Run ID: GS040614-2A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 95.0 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041061D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	0.44 +/- 0.91	1.52	U
14234-35-6	Sb-125	0.3 +/- 1.4	2.3	U
13967-63-0	Sc-46	-0.93 +/- 0.88	1.57	U
15623-47-9	Th-227	7.3 +/- 2.7	3.9	
15065-10-8	Th-234	154 +/- 19	12	
14913-50-9	Tl-208	29.9 +/- 3.7	0.9	
15117-96-1	U-235	8.8 +/- 3.0	4.6	
13982-39-3	Zn-65	-0.9 +/- 1.9	3.3	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: OSA-01
Lab ID: 0405097-28

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.52 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041031D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1040 +/- 140	70	M3
14391-76-5	Ag-110m	-7 +/- 13	24	U
14682-66-7	Al-26	2 +/- 12	22	U
14596-10-2	Am-241	-1 +/- 24	41	U
13966-02-4	Be-7	-190 +/- 160	300	U
14913-49-6	Bi-212	440 +/- 200	280	
14733-03-0	Bi-214	890 +/- 170	120	J
13982-30-4	Ce-139	5 +/- 12	21	U
14762-78-8	Ce-144	20 +/- 66	110	U
14093-03-9	Co-56	172 +/- 70	83	TI
13981-50-5	Co-57	-0.6 +/- 8.0	13.6	U
13981-38-9	Co-58	13 +/- 17	28	U
10198-40-0	Co-60	1 +/- 13	23	U
14392-02-0	Cr-51	-120 +/- 280	500	U
13967-70-9	Cs-134	6 +/- 12	19	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: OSA-01
Lab ID: 0405097-28

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.52 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041031D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-7 +/- 13	24	U
14683-23-9	Eu-152	89 +/- 61	90	U
15585-10-1	Eu-154	-33 +/- 67	124	U
14391-16-3	Eu-155	54 +/- 41	66	U
14596-12-4	Fe-59	-19 +/- 43	80	U
10043-66-0	I-131	160 +/- 520	880	U
13966-00-2	K-40	70 +/- 140	240	U
13966-31-9	Mn-54	4 +/- 14	24	U
13966-32-0	Na-22	-13 +/- 14	27	U
14681-63-1	Nb-94	5 +/- 12	21	U
13967-76-5	Nb-95	3 +/- 31	53	U
15100-28-4	Pa-234m	-200 +/- 2000	3600	U
15092-94-1	Pb-212	527 +/- 71	33	
15067-28-4	Pb-214	970 +/- 120	40	J
13967-48-1	Ru-106	80 +/- 120	200	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

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TI - Nuclide identification is tentative.

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Abbreviations:

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BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: OSA-01
Lab ID: 0405097-28

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-2
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.52 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041031D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	8 +/- 19	32	U
14234-35-6	Sb-125	21 +/- 31	51	U
13967-63-0	Sc-46	-5 +/- 16	30	U
15623-47-9	Th-227	7 +/- 65	110	U
15065-10-8	Th-234	910 +/- 180	250	
14913-50-9	Tl-208	157 +/- 27	20	
15117-96-1	U-235	144 +/- 70	106	
13982-39-3	Zn-65	6 +/- 38	65	U
14331-85-2	Pa-231	-290 +/- 590	1010	U,M

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: OSA-02
Lab ID: 0405097-29

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.35 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040961D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	299 +/- 61	73	M3
14391-76-5	Ag-110m	-2 +/- 11	21	U
14682-66-7	Al-26	2 +/- 11	21	U
14596-10-2	Am-241	0 +/- 18	30	U
13966-02-4	Be-7	50 +/- 140	250	U
14913-49-6	Bi-212	20 +/- 200	350	U
14733-03-0	Bi-214	285 +/- 53	40	J
13982-30-4	Ce-139	-0.3 +/- 9.3	16.2	U
14762-78-8	Ce-144	-31 +/- 56	100	U
14093-03-9	Co-56	45 +/- 31	44	TI
13981-50-5	Co-57	-0.6 +/- 7.2	12.4	U
13981-38-9	Co-58	-11 +/- 15	30	U
10198-40-0	Co-60	6 +/- 11	19	U
14392-02-0	Cr-51	-260 +/- 260	490	U
13967-70-9	Cs-134	6.7 +/- 7.6	17.0	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: OSA-02
Lab ID: 0405097-29

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.35 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040961D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	0 +/- 11	21	U
14683-23-9	Eu-152	30 +/- 64	112	U
15585-10-1	Eu-154	-10 +/- 56	108	U
14391-16-3	Eu-155	43 +/- 24	37	TI
14596-12-4	Fe-59	-15 +/- 49	93	U
10043-66-0	I-131	120 +/- 520	900	U
13966-00-2	K-40	70 +/- 170	290	U
13966-31-9	Mn-54	1 +/- 13	23	U
13966-32-0	Na-22	-14 +/- 13	29	U
14681-63-1	Nb-94	-1 +/- 12	21	U
13967-76-5	Nb-95	-19 +/- 24	48	U
15100-28-4	Pa-234m	2100 +/- 1600	2200	U
15092-94-1	Pb-212	142 +/- 31	34	
15067-28-4	Pb-214	314 +/- 49	33	J
13967-48-1	Ru-106	-60 +/- 100	200	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

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Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: OSA-02
Lab ID: 0405097-29

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.35 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040961D07A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	4 +/- 16	29	U
14234-35-6	Sb-125	12 +/- 24	45	U
13967-63-0	Sc-46	-1 +/- 15	28	U
15623-47-9	Th-227	0 +/- 1200	1900	U
15065-10-8	Th-234	450 +/- 140	240	
14913-50-9	Tl-208	42 +/- 18	25	
15117-96-1	U-235	57 +/- 56	90	U
13982-39-3	Zn-65	14 +/- 23	38	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: OSA-03
Lab ID: 0405097-30

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.19 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041032D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	262 +/- 53	61	M3
14391-76-5	Ag-110m	-3 +/- 11	20	U
14682-66-7	Al-26	0 +/- 10	20	U
14596-10-2	Am-241	10 +/- 16	27	U
13966-02-4	Be-7	-50 +/- 130	250	U
14913-49-6	Bi-212	260 +/- 190	280	U
14733-03-0	Bi-214	267 +/- 48	33	J
13982-30-4	Ce-139	-5.0 +/- 8.8	15.9	U
14762-78-8	Ce-144	19 +/- 46	78	U
14093-03-9	Co-56	58 +/- 32	43	TI
13981-50-5	Co-57	1.5 +/- 5.6	9.7	U
13981-38-9	Co-58	-5 +/- 14	27	U
10198-40-0	Co-60	2 +/- 11	20	U
14392-02-0	Cr-51	-50 +/- 210	390	U
13967-70-9	Cs-134	-2.2 +/- 9.3	17.1	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

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MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: OSA-03
Lab ID: 0405097-30

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.19 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041032D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10045-97-3	Cs-137	-1 +/- 11	20	U
14683-23-9	Eu-152	-5 +/- 66	123	U
15585-10-1	Eu-154	21 +/- 59	103	U
14391-16-3	Eu-155	19 +/- 20	32	U
14596-12-4	Fe-59	-3 +/- 37	70	U
10043-66-0	I-131	200 +/- 490	840	U
13966-00-2	K-40	10 +/- 140	260	U
13966-31-9	Mn-54	5.8 +/- 9.6	16.3	U
13966-32-0	Na-22	5 +/- 12	21	U
14681-63-1	Nb-94	0 +/- 10	18	U
13967-76-5	Nb-95	-5 +/- 17	31	U
15100-28-4	Pa-234m	-500 +/- 1800	3400	U
15092-94-1	Pb-212	128 +/- 28	28	
15067-28-4	Pb-214	287 +/- 45	31	J
13967-48-1	Ru-106	-130 +/- 110	210	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

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BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405097
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Field ID: OSA-03
Lab ID: 0405097-30

Library: KENT_FANP

Sample Matrix: SOLID
Prep SOP: PAI 739 Rev 8
Date Collected: 06-May-04
Date Prepared: 11-Jun-04
Date Analyzed: 23-Jun-04

Prep Batch: GS040611-1
QCBatchID: GS040611-1-1
Run ID: GS040614-2A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 1.19 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 041032D08A

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
14683-10-4	Sb-124	7 +/- 15	26	U
14234-35-6	Sb-125	3 +/- 24	45	U
13967-63-0	Sc-46	5 +/- 16	28	U
15623-47-9	Th-227	27 +/- 46	76	U
15065-10-8	Th-234	370 +/- 140	220	
14913-50-9	Tl-208	32 +/- 16	23	
15117-96-1	U-235	13 +/- 50	86	U
13982-39-3	Zn-65	14 +/- 50	85	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

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M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

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R - Nuclide has exceeded 8 halflives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: *GSS0405097-1*

PARAGON ANALYTICS
Radiochemistry Data Package

4

Section 4

RAW DATA

041129D02.SPC Analyzed by

****

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

****

Geo.11 / Solid

Sample ID: 0405097-1 GS040614-2 Code: 041129D02A

Sampling Start:	05/06/2004 12:00:00	Counting Start:	07/01/2004 09:10:52
Sampling Stop:	05/06/2004 12:00:00	Decay Time.	1.34E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	9.44E+001 g	Real Time	1854 Sec
Collection Efficiency	1.0000	Spc. File	.041129D02.SPC

Detector #: 2 (Detector 2)

Energy(keV)= -0.75 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004
FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.34	94.16	187	135	109	2377	0.85 a	
2	63.21	127.88	935	170	131	3161	1.05 a	
3	74.77	150.98	4200	213	139	3580	0.96 a	HiResid
4	77.02	155.47	6816	222	122	2983	0.88 b	HiResid
5	79.28	160.00	17	80	66	1193	0.37 c	NET< CL HiResid
6	80.97	163.37	71	127	104	2387	0.64 d	NET< CL HiResid
7	83.93	169.30	1311	165	122	2983	0.85 e	HiResid
8	87.14	175.71	3274	222	156	4177	1.18 f	HiResid
9	89.84	181.10	1999	191	139	3580	0.97 g	HiResid
10	92.82	187.06	4083	229	156	4177	1.14 h	HiResid
11	94.32	190.06	438	195	156	4177	1.22 i	HiResid
12	98.38	198.18	130	94	75	1388	0.55 a	
13	99.38	200.17	282	153	123	2775	0.99 b	
14	103.36	208.13	8	70	58	925	0.40 c	NET< CL
15	105.54	212.50	386	154	123	2775	0.98 d	
16	108.97	219.35	161	169	138	3238	1.08 e	
17	112.79	226.98	187	133	107	2313	0.79 f	
18	115.28	231.96	184	133	107	2313	0.74 g	
19	129.05	259.50	761	141	107	2303	0.84 a	
20	144.04	289.46	598	154	120	2666	0.99 a	
21	154.09	309.56	504	102	76	1413	0.55 a	
22	163.37	328.11	190	127	102	2113	0.81 a	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
23	185.98	373.31	5723	219	130	2885	1.10 a	
24	205.19	411.70	89	100	81	1459	0.71 a	
25	209.19	419.71	1420	152	109	2188	0.91 b	
26	225.16	451.64	106	136	111	2085	1.14 a	NET< CL
27	228.51	458.33	141	151	123	2383	1.24 b	
28	235.92	473.14	643	138	105	1898	1.21 a	HiResid
29	238.58	478.46	15927	277	94	1627	1.02 b	HiResid
30	241.72	484.73	5604	216	128	2441	1.41 c	HiResid
31	256.31	513.90	211	97	76	1167	0.81 a	
32	258.75	518.78	290	111	87	1400	0.99 b	
33	270.26	541.78	2114	184	131	2239	1.83 a	Wide Pk
34	274.65	550.57	247	127	101	1628	1.32 b	
35	277.29	555.84	711	134	101	1628	1.31 c	
36	288.16	577.58	55	64	51	649	0.50 a	
37	295.19	591.64	9886	226	89	1348	1.09 a	
38	300.10	601.45	1006	115	79	1155	0.91 b	
39	321.29	643.80	76	83	67	906	0.86 a	
40	323.91	649.05	88	84	67	906	0.86 b	
41	327.94	657.09	805	119	86	1268	1.07 c	
42	338.25	677.72	3211	146	76	1076	1.06 a	
43	351.82	704.85	16485	274	80	1078	1.15 a	
44	386.90	774.96	95	75	60	725	0.88 a	
45	389.12	779.41	143	97	77	1015	1.14 b	
46	401.74	804.64	162	85	67	825	1.02 a	
47	405.14	811.43	149	95	75	963	1.11 b	
48	409.51	820.18	494	102	75	963	1.22 c	
49	427.15	855.43	77	59	47	483	0.70 a	
50	462.91	926.93	841	98	65	791	1.23 a	
51	480.58	962.24	59	50	39	377	0.73 a	
52	486.98	975.03	110	80	64	754	1.33 b	
53	510.74	1022.55	1561	117	71	825	1.63 a	
54	562.50	1126.02	107	61	48	479	0.95 a	
55	580.04	1161.08	84	59	46	448	0.93 a	
56	583.16	1167.31	4596	152	57	597	1.37 b	
57	609.28	1219.54	11733	227	55	563	1.39 a	
58	615.34	1231.65	46	42	33	266	0.73 a	
59	665.51	1331.94	292	77	57	558	1.43 a	
60	702.49	1405.86	75	66	53	512	1.30 a	
61	719.77	1440.41	44	57	46	410	1.17 a	NET< CL
62	727.28	1455.43	942	87	50	465	1.32 a	
63	742.68	1486.21	118	75	59	546	1.80 a	
64	755.55	1511.94	123	60	46	390	1.37 a	
65	768.34	1537.51	1034	95	58	548	1.66 a	
66	772.21	1545.26	149	59	44	383	1.16 b	
67	785.89	1572.59	364	69	48	417	1.25 a	
68	794.99	1590.78	552	74	47	386	1.51 a	
69	806.13	1613.06	201	61	44	361	1.24 a	
70	835.68	1672.14	89	48	36	299	1.06 a	
71	839.70	1680.18	140	72	56	549	1.85 b	

041129D02.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
72	860.55	1721.86	543	75	48	406	1.83 a	
73	904.04	1808.79	-10	31	26	171	0.80 a	NET< CL
74	904.08	1808.87	99	67	53	445	2.19 b	
75	911.26	1823.23	3358	129	46	376	1.76 c	
76	934.10	1868.89	514	66	40	308	1.51 a	
77	964.65	1929.96	627	71	41	313	1.62 a	
78	968.95	1938.55	1968	102	41	313	1.62 b	
79	1001.10	2002.83	143	50	36	248	1.55 a	
80	1069.99	2140.54	17	29	23	128	0.86 a	NET< CL
81	1094.41	2189.36	78	55	43	284	2.26 a	
82	1110.52	2221.58	42	42	33	213	1.41 a	
83	1120.29	2241.11	2422	109	39	265	1.88 a	
84	1155.16	2310.82	289	56	36	230	1.85 a	
85	1208.36	2417.17	37	45	35	231	1.97 a	
86	1238.08	2476.58	870	73	35	227	2.04 a	
87	1254.14	2508.69	35	30	22	123	0.94 a	
88	1280.86	2562.11	168	51	36	239	1.91 a	
89	1377.61	2755.52	629	66	35	226	2.03 a	
90	1385.39	2771.06	76	41	31	188	1.69 b	
91	1401.49	2803.25	180	50	35	221	1.93 a	
92	1408.07	2816.41	279	54	35	221	1.99 b	
93	1460.06	2920.34	166	59	44	284	3.00 a	
94	1496.11	2992.41	53	48	38	250	2.18 a	
95	1509.30	3018.78	218	52	36	234	2.04 a	
96	1543.58	3087.31	22	40	32	201	1.75 a	NET< CL
97	1582.27	3164.66	131	56	42	243	3.23 a	
98	1588.05	3176.22	283	51	32	170	2.23 b	
99	1592.26	3184.64	213	57	40	231	3.07 c	
100	1620.31	3240.71	92	39	28	140	1.99 a	
101	1630.67	3261.42	121	44	31	163	2.24 b	
102	1661.20	3322.45	100	40	28	133	2.47 a	
103	1729.46	3458.91	389	50	25	114	2.10 a	
104	1764.38	3528.72	1901	92	24	95	2.45 a	
105	1847.21	3694.31	255	43	24	94	2.38 a	

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.34	187	135	109	186	135	109	
2	63.21	935	170	131	930	170	131	
3	74.77	4200	213	139	4196	213	139	
4	77.02	6816	222	122	6812	222	122	
7	83.93	1311	165	122	1310	165	122	
8	87.14	3274	222	156	3272	222	157	
9	89.84	1999	191	139	1998	191	139	
10	92.82	4083	229	156	4070	229	157	
18	115.28	184	133	107	183	133	107	
19	129.05	761	141	107	760	141	107	
20	144.04	598	154	120	595	154	120	
22	163.37	190	127	102	190	127	102	
23	185.98	5723	219	130	5715	219	130	
29	238.58	15927	277	94	15920	277	94	
37	295.19	9886	226	89	9883	226	89	
42	338.25	3211	146	76	3209	147	76	
43	351.82	16485	274	80	16480	274	80	
53	510.74	1561	117	71	1520	117	72	
56	583.16	4596	152	57	4592	152	57	
57	609.28	11733	227	55	11729	227	55	
72	860.55	543	75	48	542	75	48	
75	911.26	3358	129	46	3356	129	46	
78	968.95	1968	102	41	1966	102	41	
93	1460.06	166	59	44	161	59	44	
104	1764.38	1901	92	24	1900	92	24	

041129D02.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-1 GS040614-2 Code: 041129D02A

Sampling Start:	05/06/2004 12:00:00	Counting Start:	07/01/2004 09:10:52
Sampling Stop:	05/06/2004 12:00:00	Decay Time.	1.34e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	9.44e+001 g	Real Time	1854 Sec
Collection Efficiency	1.0000	Spectrum File	.041129D02.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 2 (Detector 2)

Efficiency File: (D02)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[8.73E-04*En^-4.04E+00 + 6.76E+01*En^8.33E-01] 06/01/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	2.64E+02 +- 1.42E+01	. . . .	. . . .	3.92E+13
	63.29		2.59E+02 +- 4.75E+01	7.37E+01	3.65E+01	3.92E+13
	92.50		2.64E+02 +- 1.49E+01	2.05E+01	1.02E+01	3.92E+13
Eu-155	105.31		5.38E+00 +- 2.15E+00	3.46E+00	1.71E+00	4.35E+04
Pb-212	Average:	x	1.28E+02 +- 2.21E+00	. . . .	. . . .	1.67E+04
	115.18		8.67E+01 +- 6.31E+01	1.03E+02	5.08E+01	1.67E+04
	238.63		1.28E+02 +- 2.23E+00	1.54E+00	7.58E-01	1.67E+04
	300.09		1.29E+02 +- 1.47E+01	2.06E+01	1.01E+01	1.67E+04
U-235	Average:	x	1.11E+01 +- 2.74E+00	. . . .	. . . .	6.17E+12
	143.76		1.35E+01 +- 3.50E+00	5.53E+00	2.73E+00	6.17E+12
	163.35		9.67E+00 +- 6.50E+00	1.06E+01	5.22E+00	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
	205.31		5.27E+00 +- 5.93E+00	9.74E+00	4.79E+00	6.17E+12
Th-227	236.00		1.72E+01 +- 3.69E+00	5.72E+00	2.82E+00	1.90E+05
Tl-208	Average:	x	3.76E+01 +- 1.19E+00	. . . .	. . . .	1.27E+14
	277.36		4.19E+01 +- 7.91E+00	1.21E+01	5.97E+00	1.27E+14
	583.14		3.73E+01 +- 1.24E+00	9.47E-01	4.63E-01	1.27E+14
	860.47		4.14E+01 +- 5.71E+00	7.55E+00	3.67E+00	1.27E+14
Pb-214	Average:	x	2.01E+02 +- 2.70E+00	. . . .	. . . .	1.40E+07
	295.22		2.01E+02 +- 4.61E+00	3.68E+00	1.81E+00	1.40E+07
	351.99		2.01E+02 +- 3.34E+00	1.97E+00	9.69E-01	1.40E+07
Cr-51	320.07		1.29E+01 +- 1.41E+01	2.31E+01	1.13E+01	6.65E+02
Ra-228	Average:	x	1.30E+02 +- 3.33E+00	. . . .	. . . .	5.04E+04
	338.40		1.27E+02 +- 5.79E+00	6.14E+00	3.02E+00	5.04E+04
	911.07		1.32E+02 +- 5.06E+00	3.74E+00	1.82E+00	5.04E+04

000134

041129D02.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
	968.90		1.33E+02 +- 6.87E+00	5.75E+00	2.78E+00	5.04E+04
Sb-125	Average:x		3.13E+00 +- 1.07E+00	. . . .	. . . .	2.43E+04
	427.95		1.41E+00 +- 1.09E+00	1.76E+00	8.57E-01	2.43E+04
	463.51		4.72E+01 +- 5.53E+00	7.50E+00	3.67E+00	2.43E+04
Cs-134	Average:x		2.16E+00 +- 4.43E-01	. . . .	. . . .	1.81E+04
	563.26		9.03E+00 +- 5.16E+00	8.23E+00	4.00E+00	1.81E+04
	604.66	N	4.12E-01 +- 5.32E-01	8.76E-01B	4.28E-01	1.81E+04
	795.76		6.03E+00 +- 8.10E-01	1.06E+00	5.15E-01	1.81E+04
Bi-214	Average:x		1.82E+02 +- 3.24E+00	. . . .	. . . .	1.40E+07
	609.32		1.81E+02 +- 3.50E+00	1.75E+00	8.55E-01	1.40E+07
	1120.28		1.90E+02 +- 8.54E+00	6.28E+00	3.04E+00	1.40E+07
Nb-94	702.50		6.12E-01 +- 5.42E-01	8.83E-01	4.31E-01	1.78E+08
Bi-212	727.17		1.25E+02 +- 1.15E+01	1.36E+01	6.64E+00	1.67E+04
Mn-54	834.81		9.34E-01 +- 4.99E-01	7.82E-01	3.77E-01	7.49E+03
Pa-234m	1001.03		2.61E+02 +- 9.04E+01	1.35E+02	6.52E+01	3.92E+13
Eu-152	Average:x		1.14E+01 +- 2.60E+00	. . . .	. . . .	1.17E+05
	1112.07		3.67E+00 +- 3.67E+00	5.98E+00	2.87E+00	1.17E+05
	1408.08		1.91E+01 +- 3.68E+00	4.93E+00	2.37E+00	1.17E+05
Ag-110M	Average:x		4.91E-01 +- 5.66E-01	. . . .	. . . .	6.00E+03
	1384.27		5.15E+00 +- 2.80E+00	4.35E+00	2.08E+00	6.00E+03
	657.75	N	2.92E-01 +- 5.78E-01	9.61E-01	4.68E-01	6.00E+03
K-40	1460.75		2.16E+01 +- 7.94E+00	1.22E+01	5.90E+00	1.12E+13
Am-241	59.54	N	6.01E+00 +- 4.35E+00	7.09E+00B	3.49E+00	3.80E+06
Co-57	122.07	N	5.07E-01 +- 4.40E-01	7.20E-01	3.55E-01	6.48E+03
Ce-144	133.53	N	-9.17E-01 +- 3.31E+00	5.53E+00	2.73E+00	6.82E+03
Ce-139	165.85	N	3.11E-01 +- 5.30E-01	8.76E-01b	4.32E-01	3.30E+03
I-131	364.48	N	2.34E+00 +- 6.43E+01	1.08E+02	5.28E+01	1.93E+02
Be-7	477.56	N	5.63E+00 +- 8.06E+00	1.33E+01B	6.49E+00	1.28E+03
Sb-124	602.71	N	-6.28E-01 +- 9.53E-01	1.63E+00	7.99E-01	1.44E+03
Ru-106	621.84	N	-1.56E+00 +- 5.29E+00	9.00E+00	4.39E+00	8.84E+03
Cs-137	661.62	N	3.59E-02 +- 7.94E-01	1.33E+00R	6.52E-01	2.64E+05
Nb-95	765.82	N	2.92E+00 +- 1.54E+00	2.38E+00R	1.17E+00	1.54E+03
Co-58	810.75	N	1.11E+00 +- 8.80E-01	1.42E+00b	6.91E-01	1.70E+03
Sc-46	889.26	N	-7.58E-01 +- 8.35E-01	1.46E+00	7.10E-01	2.01E+03
Eu-154	1004.80	N	-6.07E-02 +- 4.06E+00	6.86E+00r	3.35E+00	7.45E+04
Fe-59	1099.22	N	-1.79E+00 +- 3.31E+00	5.75E+00r	2.81E+00	1.08E+03
Zn-65	1115.52	N	-9.16E-01 +- 2.04E+00	3.51E+00R	1.72E+00	5.85E+03
Co-56	1238.28	N	-3.06E+01 +- 4.93E+00	9.39E+00R	4.65E+00	1.86E+03
Na-22	1274.54	N	-2.06E-01 +- 5.64E-01	9.81E-01B	4.72E-01	2.28E+04
Co-60	1332.51	N	1.81E-01 +- 5.66E-01	9.54E-01	4.58E-01	4.62E+04
Al-26	1808.65	N	1.24E-01 +- 5.04E-01	8.63E-01	4.08E-01	6.31E+09

MEASURED TOTAL: 1.44E+03 +- 2.47E+02 pCi/g

041129D02.SPC Analyzed by

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.34	94.16	186	135	109	2377	0.85	Unknown
3	74.77	150.98	4196 Pb	213	139	3580	0.96	Unknown
4	77.02	155.47	6812 Xky	222	122	2983	0.88	Unknown
5	79.28	160.00	17	80	66	1193	0.37	Deleted
6	80.97	163.37	71	127	104	2387	0.64	Deleted
7	83.93	169.30	1310 Pb	165	122	2983	0.85	Unknown
8	87.14	175.71	3272 Xky	222	157	4177	1.18	Unknown
9	89.84	181.10	1998	191	139	3580	0.97	Unknown
11	94.32	190.06	438	195	156	4177	1.22	Unknown
12	98.38	198.18	130	94	75	1388	0.55	1120DEsc
13	99.38	200.17	282	153	123	2775	0.99	1120DEsc
14	103.36	208.13	8	70	58	925	0.40	Deleted
16	108.97	219.35	161	169	138	3238	1.08	Unknown
17	112.79	226.98	187	133	107	2313	0.79	Unknown
19	129.05	259.50	760	141	107	2303	0.84	Unknown
21	154.09	309.56	504	102	76	1413	0.55	Unknown
25	209.19	419.71	1420 Ac 228	152	109	2188	0.91	Unknown
26	225.16	451.64	106	136	111	2085	1.14	Deleted
27	228.51	458.33	141	151	123	2383	1.24	Unknown
30	241.72	484.73	5604 Pb 214	216	128	2441	1.41	Unknown
31	256.31	513.90	211	97	76	1167	0.81	Unknown
32	258.75	518.78	290	111	87	1400	0.99	1281DEsc
33	270.26	541.78	2114 Ac 228	184	131	2239	1.83	Unknown
34	274.65	550.57	247	127	101	1628	1.32	Unknown
36	288.16	577.58	55	64	51	649	0.50	Unknown
40	323.91	649.05	88	84	67	906	0.86	Unknown
41	327.94	657.09	805 Ac 228	119	86	1268	1.07	Unknown
44	386.90	774.96	95	75	60	725	0.88	1408DEsc
45	389.12	779.41	143	97	77	1015	1.14	Unknown
46	401.74	804.64	162	85	67	825	1.02	Unknown
47	405.14	811.43	149	95	75	963	1.11	Unknown
48	409.51	820.18	494	102	75	963	1.22	Unknown
51	480.58	962.24	59	50	39	377	0.73	Unknown
52	486.98	975.03	110	80	64	754	1.33	1509DEsc
53	510.74	1022.55	1520 Ann Peak	117	72	825	1.63	Unknown
55	580.04	1161.08	84	59	46	448	0.93	Unknown
58	615.34	1231.65	46	42	33	266	0.73	Unknown
59	665.51	1331.94	292 Bi 214	77	57	558	1.43	Unknown
61	719.77	1440.41	44	57	46	410	1.17	Deleted
63	742.68	1486.21	118	75	59	546	1.80	1764DEsc
64	755.55	1511.94	123	60	46	390	1.37	Unknown
65	768.34	1537.51	1034 Bi 214	95	58	548	1.66	1281SEsc
66	772.21	1545.26	149	59	44	383	1.16	Unknown
67	785.89	1572.59	364 Ac 228	69	48	417	1.25	Unknown
69	806.13	1613.06	201	61	44	361	1.24	Unknown
71	839.70	1680.18	140	72	56	549	1.85	Unknown
73	904.04	1808.79	-10	31	26	171	0.80	Deleted
74	904.08	1808.87	99	67	53	445	2.19	Unknown
76	934.10	1868.89	514 Ac 228	66	40	308	1.51	Unknown

041129D02.SPC Analyzed by

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
77	964.65	1929.96	627 Ac 228	71	41	313	1.62	Unknown
80	1069.99	2140.54	17	29	23	128	0.86	Deleted
81	1094.41	2189.36	78	55	43	284	2.26	Unknown
84	1155.16	2310.82	289 Bi 214	56	36	230	1.85	Unknown
85	1208.36	2417.17	37	45	35	231	1.97	Unknown
86	1238.08	2476.58	870 Bi 214	73	35	227	2.04	Unknown
87	1254.14	2508.69	35	30	22	124	0.94	1764SEsc
88	1280.86	2562.11	168 Bi 214	51	36	239	1.91	Unknown
89	1377.61	2755.52	629	66	35	226	2.03	Unknown
91	1401.49	2803.25	180	50	35	221	1.93	Unknown
94	1496.11	2992.41	53	48	38	250	2.18	Unknown
95	1509.30	3018.78	218	52	36	234	2.04	Unknown
96	1543.58	3087.31	22	40	32	201	1.75	Deleted
97	1582.27	3164.66	131	56	42	243	3.23	Unknown
98	1588.05	3176.22	283	51	32	170	2.23	Unknown
99	1592.26	3184.64	213	57	40	231	3.07	Unknown
100	1620.31	3240.71	92	39	28	140	1.99	Unknown
101	1630.67	3261.42	121	44	31	163	2.24	Unknown
102	1661.20	3322.45	100	40	28	133	2.47	Unknown
103	1729.46	3458.91	389	50	25	114	2.10	Unknown
104	1764.38	3528.72	1900	92	24	95	2.45	Unknown
105	1847.21	3694.31	255	43	24	94	2.38	Unknown

041123D03.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-1D GS040614-2 Code: 041123D03A

Sampling Start:	05/06/2004 12:00:00	Counting Start:	07/01/2004 09:11:21
Sampling Stop:	05/06/2004 12:00:00	Decay Time.	1.34E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	9.67E+001 g	Real Time	1854 Sec
Collection Efficiency	1.0000	Spc. File	.041123D03.SPC

Detector #: 3 (Detector 3)

Energy(keV)= -0.82 + 0.500*Ch + 1.08E-07*Ch^2 +-1.09E-11*Ch^3 07/01/2004
FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	63.31	128.24	986	172	132	3493	0.85 a	
2	67.49	136.59	115	114	92	2096	0.47 b	
3	74.80	151.21	3810	254	182	6134	0.90	
4	77.11	155.84	8063	293	190	6153	0.94	
5	79.41	160.43	314	138	109	2655	0.87	
6	84.00	169.61	1562	233	181	5172	1.20	
7	87.18	175.96	380	259	210	7555	0.19	
8	89.89	181.39	-2939	238	215	8562	1065.18	NET< CL
9	92.78	187.17	3982	251	178	5037	1.40	
10	99.15	199.89	-213	299	247	7145	0.85	NET< CL Wide Pk
11	105.31	212.22	548	174	138	3229	1.15 a	
12	108.79	219.17	118	187	153	3691	1.29 b	NET< CL
13	115.42	232.42	112	114	92	1889	0.65 a	
14	129.14	259.87	787	158	122	2739	1.02 a	
15	143.97	289.51	576	173	137	3186	1.13 a	
16	154.26	310.08	629	207	165	4014	1.55 a	
17	163.31	328.18	99	126	103	2119	0.85 a	NET< CL
18	170.12	341.80	142	138	112	2326	0.99 a	
19	186.10	373.74	5418	225	140	3107	1.31 a	
20	205.44	412.41	135	82	65	1040	0.56 a	
21	209.29	420.12	1337	162	119	2426	1.12 b	
22	215.87	433.28	149	140	114	2204	1.20 a	
23	236.16	473.82	494	136	106	1904	1.12 a	HiResid

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
24	238.69	478.89	15278	285	117	2176	1.23 b	HiResid
25	241.80	485.12	5238	213	129	2448	1.40 c	HiResid
26	256.27	514.04	192	112	89	1563	1.14 a	
27	259.00	519.50	347	104	80	1340	1.04 b	
28	270.26	542.00	1591	155	109	2082	1.53 a	
29	277.49	556.47	430	107	81	1386	0.95 a	
30	288.05	577.57	103	94	76	1206	1.05 a	
31	295.28	592.02	9159	223	94	1639	1.25 a	
32	300.18	601.82	895	120	85	1434	1.07 b	
33	328.05	657.53	746	122	90	1496	1.30 a	
34	338.32	678.07	3036	153	88	1425	1.30 a	
35	351.89	705.19	15530	268	82	1235	1.36 a	HiResid
36	401.92	805.22	227	121	97	1451	1.87 a	
37	405.09	811.54	150	95	76	1055	1.24 b	
38	409.65	820.67	487	110	83	1187	1.47 c	
39	427.33	856.00	63	64	51	600	0.85 a	
40	462.87	927.05	847	103	70	855	1.47 a	
41	480.65	962.59	169	174	142	1918	3.70 a	Wide Pk
42	487.15	975.59	173	65	49	500	1.01 b	
43	510.73	1022.71	1491	126	82	993	1.93 a	
44	562.59	1126.37	140	82	64	761	1.56 a	
45	583.19	1167.55	4384	153	64	747	1.62 a	HiResid
46	609.28	1219.70	10828	222	63	729	1.68 a	HiResid
47	665.56	1332.19	251	63	44	430	1.21 a	
48	702.25	1405.51	109	112	91	1089	3.01 a	Wide Pk
49	719.91	1440.82	88	67	53	523	1.57 a	
50	727.34	1455.66	922	92	57	575	1.74 b	
51	755.46	1511.88	121	71	55	537	1.84 a	
52	768.38	1537.69	1084	96	58	583	1.87 a	
53	772.53	1545.99	147	60	45	424	1.37 b	
54	785.93	1572.76	395	75	52	480	1.77 a	
55	794.89	1590.68	478	81	56	523	1.93 b	
56	806.19	1613.26	170	58	43	387	1.46 a	
57	835.60	1672.03	110	57	44	428	1.37 a	
58	860.58	1721.96	489	75	50	453	1.89 a	
59	911.26	1823.24	3036	127	53	492	2.05 a	HiResid
60	934.11	1868.92	406	68	45	389	1.72 a	
61	965.08	1930.80	713	86	56	475	2.81 a	
62	969.04	1938.72	1782	99	43	335	1.97 b	
63	1000.91	2002.41	183	63	46	369	2.33 a	
64	1079.09	2158.65	49	36	28	180	1.08 a	
65	1120.26	2240.91	2184	108	45	331	2.47 a	
66	1155.30	2310.94	227	64	47	345	2.59 a	
67	1238.19	2476.58	739	72	39	263	2.29 a	
68	1281.35	2562.82	191	56	40	263	2.45 a	
69	1377.75	2755.45	560	66	38	240	2.41 a	
70	1385.25	2770.45	77	38	28	160	1.59 b	
71	1401.40	2802.71	172	56	40	248	2.83 a	
72	1408.30	2816.50	291	52	33	190	2.16 b	

041123D03.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
73	1460.54	2920.90	114	55	42	269	2.78 a	
74	1509.64	3019.00	189	56	40	266	2.53 a	
75	1582.38	3164.35	74	53	41	256	2.74 a	
76	1588.60	3176.78	271	56	37	226	2.53 b	
77	1592.54	3184.66	94	38	27	151	1.70 c	
78	1620.69	3240.90	104	43	31	162	2.29 a	
79	1631.12	3261.75	92	40	29	151	2.18 b	
80	1662.05	3323.54	99	40	29	128	2.79 a	
81	1729.64	3458.61	368	50	27	108	2.76 a	
82	1764.53	3528.33	1670	91	32	147	3.09 a	HiResid
83	1847.64	3694.40	200	48	32	150	2.97 a	

041123D03.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	63.31	986	172	132	980	172	132	
2	67.49	115	114	92	109	114	92	
3	74.80	3810	254	182	3806	254	182	
4	77.11	8063	293	190	8059	293	190	
6	84.00	1562	233	181	1560	234	181	
9	92.78	3982	251	178	3966	251	179	
15	143.97	576	173	137	575	173	137	
19	186.10	5418	225	140	5408	225	140	
20	205.44	135	82	65	135	82	65	
24	238.69	15278	285	117	15271	285	117	
31	295.28	9159	223	94	9156	223	94	
34	338.32	3036	153	88	3034	153	88	
35	351.89	15530	268	82	15524	268	82	
43	510.73	1491	126	82	1442	126	83	
45	583.19	4384	153	64	4379	153	64	
46	609.28	10828	222	63	10825	222	63	
59	911.26	3036	127	53	3033	127	53	
63	1000.91	183	63	46	182	63	47	
73	1460.54	114	55	42	106	55	42	
82	1764.53	1670	91	32	1669	91	32	

041123D03.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-1D GS040614-2 Code: 041123D03A

Sampling Start:	05/06/2004 12:00:00	Counting Start:	07/01/2004 09:11:21
Sampling Stop:	05/06/2004 12:00:00	Decay Time.	1.34e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	9.67e+001 g	Real Time	1854 Sec
Collection Efficiency	1.0000	Spectrum File	.041123D03.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 3 (Detector 3)

Efficiency File: (D03)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[2.98E-03*En^-3.47E+00 + 7.49E+01*En^8.79E-01] 05/26/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	2.26E+02 +- 1.35E+01	. . . .	. . . .	3.92E+13
	63.29		1.95E+02 +- 3.42E+01	5.30E+01	2.62E+01	3.92E+13
	92.50		2.32E+02 +- 1.47E+01	2.10E+01	1.04E+01	3.92E+13
Eu-155	105.31		7.28E+00 +- 2.31E+00	3.69E+00	1.83E+00	4.35E+04
Pb-212	Average:	x	1.25E+02 +- 2.32E+00	. . . .	. . . .	1.67E+04
	115.18		5.18E+01 +- 5.28E+01	8.66E+01	4.27E+01	1.67E+04
	238.63		1.25E+02 +- 2.34E+00	1.95E+00	9.64E-01	1.67E+04
	300.09		1.18E+02 +- 1.57E+01	2.28E+01	1.12E+01	1.67E+04
U-235	Average:	x	1.11E+01 +- 3.08E+00	. . . .	. . . .	6.17E+12
	143.76		1.31E+01 +- 3.95E+00	6.30E+00	3.12E+00	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
	205.31		8.08E+00 +- 4.93E+00	7.95E+00	3.89E+00	6.17E+12
Th-227	236.00		1.35E+01 +- 3.70E+00	5.83E+00	2.88E+00	1.90E+05
Tl-208	Average:	x	3.72E+01 +- 1.26E+00	. . . .	. . . .	1.27E+14
	277.36		2.59E+01 +- 6.44E+00	9.93E+00	4.88E+00	1.27E+14
	583.14		3.75E+01 +- 1.31E+00	1.12E+00	5.46E-01	1.27E+14
	860.47		4.01E+01 +- 6.13E+00	8.34E+00	4.06E+00	1.27E+14
Pb-214	Average:	x	1.94E+02 +- 2.73E+00	. . . .	. . . .	1.40E+07
	295.22		1.91E+02 +- 4.66E+00	3.99E+00	1.97E+00	1.40E+07
	351.99		1.95E+02 +- 3.37E+00	2.09E+00	1.03E+00	1.40E+07
Ra-228	Average:	x	1.27E+02 +- 3.55E+00	. . . .	. . . .	5.04E+04
	338.40		1.23E+02 +- 6.24E+00	7.26E+00	3.58E+00	5.04E+04
	911.07		1.28E+02 +- 5.39E+00	4.58E+00	2.23E+00	5.04E+04
	968.90		1.30E+02 +- 7.22E+00	6.40E+00	3.10E+00	5.04E+04
Sb-125	Average:	x	3.13E+00 +- 1.21E+00	. . . .	. . . .	2.43E+04

041123D03.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NOTE	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
	427.95		1.21E+00 +- 1.23E+00	2.02E+00	9.82E-01	2.43E+04
	463.51		4.96E+01 +- 6.05E+00	8.38E+00	4.11E+00	2.43E+04
Cs-134	Average:x		2.13E+00 +- 5.22E-01	. . . .	. . . .	1.81E+04
	563.26		1.24E+01 +- 7.22E+00	1.16E+01	5.68E+00	1.81E+04
	604.66	N	5.16E-01 +- 6.29E-01	1.03E+00B	5.06E-01	1.81E+04
	795.76		5.59E+00 +- 9.44E-01	1.34E+00	6.53E-01	1.81E+04
Bi-214	Average:x		1.78E+02 +- 3.37E+00	. . . .	. . . .	1.40E+07
	609.32		1.77E+02 +- 3.62E+00	2.10E+00	1.03E+00	1.40E+07
	1120.28		1.86E+02 +- 9.21E+00	7.87E+00	3.82E+00	1.40E+07
Nb-94	702.50		9.49E-01 +- 9.78E-01	1.61E+00	7.91E-01	1.78E+08
Bi-212	727.17		1.30E+02 +- 1.30E+01	1.65E+01	8.07E+00	1.67E+04
Mn-54	834.81		1.23E+00 +- 6.44E-01	1.02E+00	4.94E-01	7.49E+03
Pa-234m	1001.03		3.60E+02 +- 1.24E+02	1.89E+02	9.18E+01	3.92E+13
Ag-110M	Average:x		3.50E-01 +- 6.81E-01	. . . .	. . . .	6.00E+03
	1384.27		5.75E+00 +- 2.88E+00	4.42E+00	2.11E+00	6.00E+03
	657.75	N	3.00E-02 +- 7.01E-01	1.18E+00	5.76E-01	6.00E+03
K-40	1460.75		1.57E+01 +- 8.17E+00	1.29E+01	6.24E+00	1.12E+13
Am-241	59.54	N	2.15E+00 +- 4.41E+00	7.29E+00B	3.61E+00	3.80E+06
Co-57	122.07	N	2.48E-01 +- 4.86E-01	8.02E-01	3.97E-01	6.48E+03
Ce-144	133.53	N	-1.98E+00 +- 3.78E+00	6.33E+00	3.13E+00	6.82E+03
Ce-139	165.85	N	-1.12E+00 +- 7.00E-01	1.19E+00B	5.87E-01	3.30E+03
Cr-51	320.07	N	-4.87E+00 +- 1.84E+01	3.08E+01	1.52E+01	6.65E+02
I-131	364.48	N	3.34E+01 +- 6.82E+01	1.13E+02	5.55E+01	1.93E+02
Be-7	477.56	N	-1.20E+01 +- 1.02E+01	1.75E+01	8.60E+00	1.28E+03
Sb-124	602.71	N	7.50E-01 +- 1.11E+00	1.83E+00B	8.94E-01	1.44E+03
Ru-106	621.84	N	1.82E+00 +- 6.12E+00	1.02E+01	4.99E+00	8.84E+03
Cs-137	661.62	N	1.53E-01 +- 6.77E-01	1.13E+00B	5.53E-01	2.64E+05
Nb-95	765.82	N	3.08E+00 +- 1.81E+00	2.84E+00R	1.40E+00	1.54E+03
Co-58	810.75	N	5.71E-01 +- 1.46E+00	2.40E+00r	1.18E+00	1.70E+03
Sc-46	889.26	N	5.99E-01 +- 9.91E-01	1.64E+00	7.98E-01	2.01E+03
Eu-154	1004.80	N	-3.13E+00 +- 5.43E+00	9.36E+00r	4.59E+00	7.45E+04
Fe-59	1099.22	N	-2.81E-01 +- 2.70E+00	4.60E+00	2.23E+00	1.08E+03
Zn-65	1115.52	N	-5.99E+00 +- 2.61E+00	4.80E+00R	2.36E+00	5.85E+03
Co-56	1238.28	N	-2.11E+00 +- 4.90E+00	8.26E+00r	4.08E+00	1.86E+03
Na-22	1274.54	N	1.00E-01 +- 1.08E+00	1.82E+00R	8.87E-01	2.28E+04
Co-60	1332.51	N	5.46E-01 +- 7.20E-01	1.19E+00	5.73E-01	4.62E+04
Eu-152	1408.08	N	2.87E+01 +- 7.14E+00	9.75E+00r	4.77E+00	1.17E+05
Al-26	1808.65	N	1.67E-01 +- 7.10E-01	1.21E+00	5.76E-01	6.31E+09

MEASURED TOTAL: 1.50E+03 +- 2.80E+02 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
2	67.49	136.59	109	114	92	2096	0.47	Unknown
3	74.80	151.21	3806	254	182	6134	0.90	Unknown

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
4	77.11	155.84	8059	293	190	6153	0.94	Unknown
5	79.41	160.43	314	138	109	2655	0.87	Unknown
6	84.00	169.61	1560	234	181	5172	1.20	Unknown
7	87.18	175.96	380	259	210	7555	0.19	Unknown
8	89.89	181.39	-2939	238	215	8562	1065.18	Deleted
10	99.15	199.89	-213	299	247	7145	0.85	Deleted
12	108.79	219.17	118	187	153	3691	1.29	Deleted
14	129.14	259.87	787	158	122	2739	1.02	Unknown
16	154.26	310.08	629	207	165	4014	1.55	Unknown
17	163.31	328.18	99	126	103	2119	0.85	Deleted
18	170.12	341.80	142	138	112	2326	0.99	Unknown
21	209.29	420.12	1337	162	119	2426	1.12	Unknown
22	215.87	433.28	149	140	114	2204	1.20	1238DEsc
25	241.80	485.12	5238	213	129	2448	1.40	Unknown
26	256.27	514.04	192	112	89	1563	1.14	Unknown
27	259.00	519.50	347	104	80	1340	1.04	1281DEsc
28	270.26	542.00	1591	155	109	2082	1.53	Unknown
30	288.05	577.57	103	94	76	1206	1.05	Unknown
33	328.05	657.53	746	122	90	1496	1.30	Unknown
36	401.92	805.22	227	121	97	1451	1.87	Unknown
37	405.09	811.54	150	95	76	1055	1.24	Unknown
38	409.65	820.67	487	110	83	1187	1.47	Unknown
41	480.65	962.59	169	174	142	1918	3.70	Unknown
42	487.15	975.59	173	65	49	500	1.01	1510DEsc
43	510.73	1022.71	1442	126	83	993	1.93	Unknown
47	665.56	1332.19	251	63	44	430	1.21	Unknown
49	719.91	1440.82	88	67	53	523	1.57	Unknown
51	755.46	1511.88	121	71	55	537	1.84	Unknown
52	768.38	1537.69	1084	96	58	583	1.87	1281SEsc
53	772.53	1545.99	147	60	45	424	1.37	Unknown
54	785.93	1572.76	395	75	52	480	1.77	Unknown
56	806.19	1613.26	170	58	43	387	1.46	Unknown
60	934.11	1868.92	406	68	45	389	1.72	Unknown
61	965.08	1930.80	713	86	56	475	2.81	Unknown
64	1079.09	2158.65	49	36	28	180	1.08	1589SEsc
66	1155.30	2310.94	227	64	47	345	2.59	Unknown
67	1238.19	2476.58	739	72	39	263	2.29	Unknown
68	1281.35	2562.82	191	56	40	263	2.45	Unknown
69	1377.75	2755.45	560	66	38	240	2.41	Unknown
71	1401.40	2802.71	172	56	40	248	2.83	Unknown
72	1408.30	2816.50	291	52	33	190	2.16	Unknown
74	1509.64	3019.00	189	56	40	266	2.53	Unknown
75	1582.38	3164.35	74	53	41	256	2.74	Unknown
76	1588.60	3176.78	271	56	37	226	2.53	Unknown
77	1592.54	3184.66	94	38	27	151	1.70	Unknown
78	1620.69	3240.90	104	43	31	162	2.29	Unknown
79	1631.13	3261.75	92	40	29	151	2.18	Unknown
80	1662.05	3323.54	99	40	29	128	2.79	Unknown
81	1729.64	3458.61	368	50	27	108	2.76	Unknown

041123D03.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
82	1764.53	3528.33	1669	91	32	147	3.09	Unknown
83	1847.64	3694.40	200	48	32	150	2.97	Unknown

041003D10.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-2 GS040611-1 Code: 041003D10A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 11:27:50
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.10E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	8.81E-001 g	Real Time	3621 Sec
Collection Efficiency	1.0000	Spc. File	.041003D10.SPC

Detector #: 10 (Detector 10)

Energy(keV)= -1.24 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/22/2004

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.27	94.82	47	35	26	155	0.79	a
2	53.14	108.55	59	44	34	210	1.37	a
3	63.33	128.88	117	49	37	247	1.28	a
4	66.24	134.68	116	53	40	278	1.40	b
5	74.81	151.78	97	46	35	236	1.20	a
6	77.06	156.29	217	48	31	203	1.01	b
7	87.20	176.53	77	44	34	223	1.22	a
8	92.80	187.70	178	52	37	255	1.35	b
9	139.83	281.56	75	41	31	189	1.14	a
10	185.80	373.30	180	42	26	146	1.03	a
11	198.61	398.87	72	44	34	199	1.40	a
12	238.68	478.85	254	43	24	128	1.05	a
13	241.95	485.36	94	40	29	171	1.25	b
14	295.34	591.93	202	46	30	160	1.75	a
15	338.41	677.89	66	30	21	94	1.19	a
16	352.16	705.33	434	53	27	131	1.73	a
17	511.27	1022.89	258	48	30	144	2.45	a
18	558.68	1117.51	41	26	19	75	1.49	a
19	583.72	1167.48	62	29	20	77	1.83	a
20	609.72	1219.37	312	50	29	142	2.30	a
21	727.37	1454.18	25	26	20	74	1.95	a
22	837.63	1674.24	27	25	19	65	2.00	a
23	911.31	1821.29	78	27	17	56	2.03	a
24	1120.88	2239.57	72	32	22	72	2.99	a

041003D10.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	1461.66	2919.69	85	28	18	38	4.03	a
26	1764.29	3523.69	92	26	15	28	3.97	a

041003D10.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET100618.BKG (0418003-30 Weekly Background)

Bkg.File Detector #: 10

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.27	47	35	26	-19	39	33	NET<CL
2	53.14	59	44	34	50	45	35	
3	63.33	117	49	37	64	53	42	
4	66.24	116	53	40	81	56	44	
5	74.81	97	46	35	50	50	39	
6	77.06	217	48	31	150	51	37	
7	87.20	77	44	34	48	47	37	
8	92.80	178	52	37	59	56	45	
9	139.83	75	41	31	43	44	35	
10	185.80	180	42	26	95	45	34	
11	198.61	72	45	34	34	47	37	NET<CL
12	238.68	254	43	24	199	45	29	
13	241.95	94	40	29	51	43	34	
14	295.34	202	46	30	98	49	37	
15	338.41	66	30	21	60	32	23	
16	352.16	434	53	27	254	56	38	
17	511.27	258	48	30	-35	54	46	NET<CL
18	558.68	41	26	19	7	29	23	NET<CL
19	583.72	62	29	20	40	31	24	
20	609.72	312	50	29	154	53	39	
22	837.63	27	25	19	15	30	24	NET<CL
23	911.31	78	28	17	58	30	21	
24	1120.88	72	32	22	42	34	26	
25	1461.66	85	28	18	19	31	25	NET<CL
26	1764.29	92	26	15	59	29	20	

041003D10.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-2 GS040611-1 Code: 041003D10A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 11:27:50
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.10e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	3600 Sec
Sample Size	8.81e-001 g	Real Time	3621 Sec
Collection Efficiency	1.0000	Spectrum File	.041003D10.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 10 (Detector 10)

Efficiency File: (D10)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[4.18E-02*En^-2.24E+00 + 3.41E+01*En^6.74E-01] 05/24/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	1.79E+02	+- 1.23E+02	. . . .	. . . .	3.92E+13
	63.29		3.59E+02	+- 2.98E+02	4.83E+02	2.34E+02	3.92E+13
	92.50		1.42E+02	+- 1.35E+02	2.21E+02	1.07E+02	3.92E+13
U-235	143.76	N	-2.32E+00	+- 4.56E+01	7.78E+01	3.76E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	. . . .	6.17E+12
Pb-212	238.63		5.75E+01	+- 1.31E+01	1.78E+01	8.49E+00	1.67E+04
Pb-214	Average:	x	9.10E+01	+- 1.88E+01	. . . .	. . . .	1.40E+07
	295.22		6.83E+01	+- 3.42E+01	5.35E+01	2.58E+01	1.40E+07
	351.99		1.01E+02	+- 2.24E+01	3.16E+01	1.53E+01	1.40E+07
Ra-228	Average:	x	6.77E+01	+- 2.54E+01	. . . .	. . . .	5.04E+04
	338.40		7.75E+01	+- 4.15E+01	6.34E+01	3.00E+01	5.04E+04
	911.07		6.18E+01	+- 3.21E+01	4.85E+01	2.28E+01	5.04E+04
Tl-208	583.14		9.68E+00	+- 7.54E+00	1.20E+01	5.68E+00	1.27E+14
Bi-214	Average:	x	7.18E+01	+- 2.29E+01	. . . .	. . . .	1.40E+07
	609.32		7.01E+01	+- 2.42E+01	3.65E+01	1.76E+01	1.40E+07
	1120.28		8.70E+01	+- 7.15E+01	1.15E+02	5.46E+01	1.40E+07
Bi-212	727.17		9.38E+01	+- 9.84E+01	1.60E+02	7.48E+01	1.67E+04
K-40	1460.75	N	6.43E+01	+- 1.06E+02	1.76E+02	8.36E+01	1.12E+13
Am-241	59.54	N	4.73E+00	+- 3.00E+01	5.08E+01B	2.45E+01	3.80E+06
Eu-155	105.31	N	-5.72E-01	+- 2.27E+01	3.89E+01	1.87E+01	4.35E+04
Co-57	122.07	N	2.17E+00	+- 5.93E+00	9.97E+00	4.79E+00	6.48E+03
Ce-144	133.53	N	5.41E+00	+- 4.36E+01	7.42E+01	3.56E+01	6.82E+03
Ce-139	165.85	N	-4.81E+00	+- 7.05E+00	1.24E+01	5.99E+00	3.30E+03
Th-227	236.00	N	-3.88E+01	+- 6.24E+01	1.09E+02R	5.32E+01	1.90E+05
Cr-51	320.07	N	-1.28E+02	+- 1.47E+02	2.66E+02	1.27E+02	6.65E+02

041003D10.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g	)	MDA	Critical Level	Halflife (hrs)
I-131	364.48	N	1.61E+02 +-	3.25E+02	5.45E+02	2.59E+02	1.93E+02
Sb-125	427.95	N	9.73E+00 +-	1.75E+01	2.93E+01	1.39E+01	2.43E+04
Be-7	477.56	N	7.70E+01 +-	8.95E+01	1.47E+02	6.91E+01	1.28E+03
Sb-124	602.71	N	-7.15E+00 +-	1.73E+01	2.99E+01B	1.45E+01	1.44E+03
Cs-134	604.66	N	3.30E+01 +-	7.15E+01	1.18E+02P	5.87E+01	1.81E+04
Ru-106	621.84	N	-7.77E+01 +-	7.75E+01	1.41E+02	6.75E+01	8.84E+03
Ag-110M	657.75	N	8.64E-01 +-	7.78E+00	1.34E+01	6.35E+00	6.00E+03
Cs-137	661.62	N	-1.43E+00 +-	7.81E+00	1.37E+01	6.50E+00	2.64E+05
Nb-94	702.50	N	7.63E-01 +-	7.39E+00	1.27E+01	6.04E+00	1.78E+08
Nb-95	765.82	N	-1.33E+00 +-	1.29E+01	2.25E+01	1.07E+01	1.54E+03
Co-58	810.75	N	-8.37E+00 +-	1.20E+01	2.17E+01	1.03E+01	1.70E+03
Mn-54	834.81	N	-1.30E+01 +-	1.22E+01	2.28E+01R	1.10E+01	7.49E+03
Sc-46	889.26	N	-3.93E+00 +-	1.13E+01	2.01E+01	9.54E+00	2.01E+03
Pa-234m	1001.03	N	1.59E+03 +-	1.29E+03	2.05E+03	9.59E+02	3.92E+13
Eu-154	1004.80	N	-2.18E+01 +-	4.62E+01	8.30E+01	3.93E+01	7.45E+04
Fe-59	1099.22	N	2.11E+01 +-	3.08E+01	5.12E+01	2.41E+01	1.08E+03
Zn-65	1115.52	N	4.18E+01 +-	3.29E+01	5.31E+01P	2.56E+01	5.85E+03
Co-56	1238.28	N	-2.94E+00 +-	2.56E+01	4.44E+01	2.12E+01	1.86E+03
Na-22	1274.54	N	-6.79E+00 +-	9.26E+00	1.70E+01	8.03E+00	2.28E+04
Co-60	1332.51	N	-8.25E+00 +-	9.96E+00	1.83E+01	8.67E+00	4.62E+04
Eu-152	1408.08	N	-2.54E+01 +-	4.68E+01	8.48E+01	4.00E+01	1.17E+05
Al-26	1808.65	N	-2.93E+00 +-	9.98E+00	1.80E+01	8.42E+00	6.31E+09

MEASURED TOTAL: 2.58E+03 +- 2.37E+03 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.27	94.82	-19	39	33	155	0.79	Deleted
2	53.14	108.55	50	45	35	210	1.37	Unknown
4	66.24	134.68	81	56	44	278	1.40	Unknown
5	74.81	151.78	50	50	39	236	1.20	Unknown
6	77.06	156.29	150	51	37	203	1.01	Unknown
7	87.20	176.53	48	47	37	223	1.22	Unknown
9	139.83	281.56	43	44	35	189	1.14	Unknown
11	198.61	398.87	34	47	37	199	1.40	Deleted
13	241.95	485.36	51	43	34	171	1.25	Unknown
17	511.27	1022.89	-35	54	46	144	2.45	Deleted
18	558.68	1117.51	7	29	23	75	1.49	Deleted
22	837.63	1674.24	15	30	24	65	2.00	Deleted
26	1764.29	3523.69	59	29	20	28	3.97	Unknown

041032D03.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-2D GS040611-1 Code: 041032D03A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 12:39:15
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.10E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	5400 Sec
Sample Size	8.81E-001 g	Real Time	5428 Sec
Collection Efficiency	1.0000	Spc. File	.041032D03.SPC

Detector #: 3 (Detector 3)

Energy(keV)= -0.83 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/22/2004
FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.90	151.37	55	25	17	68	0.47 a	
2	77.11	155.79	85	38	27	135	0.97 b	
3	87.26	176.08	26	27	21	97	0.65 a	
4	92.84	187.22	88	38	27	128	1.20 a	
5	139.98	281.45	28	21	15	58	0.52 a	
6	185.98	373.41	79	28	18	69	0.64 a	
7	198.88	399.20	36	27	20	80	0.80 a	
8	238.73	478.85	134	36	22	92	0.98 a	
9	295.52	592.35	63	29	20	79	1.11 a	
10	328.49	658.26	16	16	12	35	0.64 a	
11	338.69	678.66	38	25	18	66	1.19 a	
12	352.18	705.61	123	31	17	56	1.24 a	
13	511.15	1023.38	152	39	25	83	2.94 a	Wide Pk
14	511.91	1024.91	14	14	10	23	0.75 b	
15	583.48	1167.96	62	22	12	30	1.52 a	
16	609.37	1219.70	74	26	16	46	1.62 a	
17	911.10	1822.84	46	20	12	28	2.03 a	

041032D03.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET030618.BKG (0418003-23 Weekly Background)

Bkg.File Detector #: 3

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
2	77.11	85	38	27	74	40	30	
3	87.26	26	27	21	21	29	23	NET<CL
4	92.84	88	38	27	34	42	33	
5	139.98	28	21	15	13	28	22	NET<CL
6	185.98	79	28	18	53	31	23	
7	198.88	36	27	20	21	31	24	NET<CL
8	238.73	134	36	22	114	38	26	
9	295.52	63	29	20	55	30	22	
11	338.69	38	25	18	32	27	20	
12	352.18	123	31	17	112	33	20	
13	511.15	152	39	25	13	44	36	NET<CL
15	583.48	62	22	12	50	29	21	
16	609.37	74	26	16	65	28	19	
17	911.10	46	20	12	36	22	15	

041032D03.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-2D GS040611-1 Code: 041032D03A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 12:39:15
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.10e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	5400 Sec
Sample Size	8.81e-001 g	Real Time	5428 Sec
Collection Efficiency	1.0000	Spectrum File	.041032D03.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 3 (Detector 3)

Efficiency File: (D03)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[5.26E-03*En^-3.50E+00 + 1.28E+02*En^8.28E-01] 04/17/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	92.50		1.38E+02 +- 1.71E+02	2.81E+02	1.35E+02	3.92E+13
U-235	143.76	N	2.09E+01 +- 5.01E+01	8.45E+01	4.01E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		6.23E+01 +- 2.08E+01	2.98E+01	1.42E+01	1.67E+04
Pb-214	Average:x		8.79E+01 +- 2.27E+01	. . . .	. . . .	1.40E+07
	295.22		7.62E+01 +- 4.23E+01	6.45E+01	3.04E+01	1.40E+07
	351.99		9.26E+01 +- 2.69E+01	3.59E+01	1.68E+01	1.40E+07
Ra-228	Average:x		9.15E+01 +- 4.52E+01	. . . .	. . . .	5.04E+04
	338.40		8.47E+01 +- 7.26E+01	1.16E+02	5.44E+01	5.04E+04
	911.07		9.58E+01 +- 5.78E+01	8.67E+01	3.98E+01	5.04E+04
Tl-208	583.14		2.75E+01 +- 1.58E+01	2.42E+01	1.14E+01	1.27E+14
Bi-214	609.32		6.79E+01 +- 2.92E+01	4.21E+01	1.96E+01	1.40E+07
Am-241	59.54	N	-4.00E+01 +- 5.79E+01	1.04E+02	4.97E+01	3.80E+06
Eu-155	105.31	N	-7.36E+00 +- 2.72E+01	4.80E+01	2.27E+01	4.35E+04
Co-57	122.07	N	5.04E+00 +- 6.19E+00	1.02E+01	4.77E+00	6.48E+03
Ce-144	133.53	N	-4.67E+01 +- 5.10E+01	9.36E+01	4.45E+01	6.82E+03
Ce-139	165.85	N	-5.28E+00 +- 9.19E+00	1.64E+01	7.82E+00	3.30E+03
Th-227	236.00	N	-1.71E+01 +- 7.96E+01	1.39E+02R	6.68E+01	1.90E+05
Cr-51	320.07	N	-9.00E+01 +- 2.11E+02	3.85E+02	1.80E+02	6.65E+02
I-131	364.48	N	-2.25E+02 +- 4.43E+02	8.18E+02	3.81E+02	1.93E+02
Sb-125	427.95	N	3.72E+00 +- 2.69E+01	4.70E+01	2.18E+01	2.43E+04
Be-7	477.56	N	6.64E+01 +- 1.30E+02	2.20E+02	1.01E+02	1.28E+03
Sb-124	602.71	N	-1.57E+01 +- 1.82E+01	3.44E+01B	1.61E+01	1.44E+03
Cs-134	604.66	N	-1.33E+01 +- 1.05E+01	2.07E+01B	9.67E+00	1.81E+04
Ru-106	621.84	N	0.00E+00 +- 9.25E+01	1.67E+02	7.61E+01	8.84E+03

041032D03.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Ag-110M	657.75	N	5.59E+00	+- 1.02E+01	1.72E+01	7.78E+00	6.00E+03
Cs-137	661.62	N	-4.86E+00	+- 1.02E+01	1.93E+01	8.83E+00	2.64E+05
Nb-94	702.50	N	-1.14E+01	+- 1.16E+01	2.22E+01	1.04E+01	1.78E+08
Bi-212	727.17	N	1.39E+02	+- 1.70E+02	2.79E+02	1.27E+02	1.67E+04
Nb-95	765.82	N	2.21E+00	+- 1.80E+01	3.18E+01	1.46E+01	1.54E+03
Co-58	810.75	N	8.43E+00	+- 1.57E+01	2.67E+01	1.21E+01	1.70E+03
Mn-54	834.81	N	-2.89E-01	+- 1.02E+01	1.87E+01	8.41E+00	7.49E+03
Sc-46	889.26	N	-5.79E+00	+- 1.39E+01	2.68E+01	1.21E+01	2.01E+03
Pa-234m	1001.03	N	1.18E+03	+- 1.71E+03	2.85E+03	1.26E+03	3.92E+13
Eu-154	1004.80	N	-4.26E+01	+- 6.07E+01	1.20E+02	5.44E+01	7.45E+04
Fe-59	1099.22	N	-2.59E+00	+- 4.03E+01	7.45E+01	3.34E+01	1.08E+03
Zn-65	1115.52	N	-1.18E+01	+- 2.85E+01	5.41E+01	2.46E+01	5.85E+03
Co-56	1238.28	N	-2.26E+00	+- 2.65E+01	4.94E+01	2.21E+01	1.86E+03
Na-22	1274.54	N	-5.97E+00	+- 1.22E+01	2.40E+01	1.08E+01	2.28E+04
Co-60	1332.51	N	-6.09E+00	+- 1.24E+01	2.45E+01	1.10E+01	4.62E+04
Eu-152	1408.08	N	3.00E+01	+- 5.44E+01	9.31E+01	4.03E+01	1.17E+05
K-40	1460.75	N	-2.32E+01	+- 1.58E+02	2.89E+02	1.32E+02	1.12E+13
Al-26	1808.65	N	-4.76E+00	+- 1.38E+01	2.72E+01	1.20E+01	6.31E+09

MEASURED TOTAL: 1.94E+03 +- 2.49E+03 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.90	151.37	55	25	17	68	0.47	Unknown
2	77.11	155.79	74	40	30	135	0.97	Unknown
3	87.26	176.08	21	29	23	97	0.65	Deleted
5	139.98	281.45	13	28	22	58	0.52	Deleted
7	198.88	399.20	21	31	24	80	0.80	Deleted
10	328.49	658.26	16	16	12	35	0.64	Unknown
13	511.15	1023.38	13	44	36	83	2.94	Deleted
14	511.91	1024.91	14	14	10	23	0.75	Unknown

041004D10.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-3 GS040611-1 Code: 041004D10A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 12:39:24
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.10E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	9.45E-001 g	Real Time	1805 Sec
Collection Efficiency	1.0000	Spc. File	.041004D10.SPC

Detector #: 10 (Detector 10)

Energy(keV)= -1.24 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/22/2004

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.39	95.08	29	31	24	111	1.14 a	
2	66.82	135.84	22	32	25	132	0.98 a	NET< CL
3	74.64	151.46	89	44	32	173	1.71 a	
4	77.15	156.45	96	33	22	104	0.93 b	
5	92.75	187.60	41	31	23	116	0.92 a	
6	139.73	281.36	49	22	14	52	0.71 a	
7	185.83	373.37	99	42	31	141	1.90 a	
8	198.57	398.79	28	26	19	78	0.97 a	
9	238.76	479.01	161	38	23	113	1.25 a	
10	295.24	591.74	116	32	20	75	1.39 a	
11	338.45	677.97	50	30	22	78	1.99 a	
12	352.04	705.10	212	36	17	55	1.62 a	
13	511.29	1022.93	142	37	23	83	2.55 a	
14	559.28	1118.70	34	21	14	39	1.81 a	
15	583.63	1167.31	64	23	14	41	1.65 a	
16	609.80	1219.55	140	35	21	78	2.08 a	
17	911.78	1822.23	55	19	10	19	2.03 a	
18	1120.39	2238.59	30	28	21	45	5.21 a	
19	1461.38	2919.15	46	22	14	23	4.40 a	
20	1766.50	3528.12	56	32	23	29	11.41 a	Wide Pk

041004D10.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET100618.BKG (0418003-30 Weekly Background)

Bkg.File Detector #: 10

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.39	29	31	24	-4	32	27	NET<CL
2	66.82	22	32	25	5	33	27	NET<CL
3	74.64	89	44	32	66	45	34	
4	77.15	96	33	22	62	34	25	
5	92.75	41	31	23	-18	33	28	NET<CL
6	139.73	49	22	14	33	24	17	
7	185.83	99	43	31	57	43	33	
8	198.57	28	26	19	9	27	21	NET<CL
9	238.76	161	38	23	133	39	26	
10	295.24	116	32	20	65	33	24	
11	338.45	50	30	22	46	30	22	
12	352.04	212	36	17	122	37	25	
13	511.29	142	37	23	-5	39	32	NET<CL
14	559.28	34	21	14	17	22	16	
15	583.63	64	24	14	53	24	16	
16	609.80	140	35	21	62	36	27	
17	911.78	55	19	10	45	20	12	
18	1120.39	30	28	21	15	29	23	NET<CL
19	1461.38	46	22	14	13	23	18	NET<CL
20	1766.50	56	32	23	39	32	25	

041004D10.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-3 GS040611-1 Code: 041004D10A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 12:39:24
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.10e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	9.45e-001 g	Real Time	1805 Sec
Collection Efficiency	1.0000	Spectrum File	.041004D10.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 10 (Detector 10)

Efficiency File: (D10)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[4.18E-02*En^-2.24E+00 + 3.41E+01*En^6.74E-01] 05/24/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	92.50	N	-8.03E+01 +- 1.47E+02	2.61E+02	1.25E+02	3.92E+13
U-235	143.76	N	-3.97E+00 +- 5.57E+01	9.69E+01	4.60E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		7.15E+01 +- 2.09E+01	2.92E+01	1.39E+01	1.67E+04
Pb-214	Average:x		8.83E+01 +- 2.31E+01	. . . .	. . . .	1.40E+07
	295.22		8.34E+01 +- 4.30E+01	6.54E+01	3.10E+01	1.40E+07
	351.99		9.03E+01 +- 2.75E+01	3.84E+01	1.82E+01	1.40E+07
Ra-228	Average:x		9.55E+01 +- 3.53E+01	. . . .	. . . .	5.04E+04
	338.40		1.12E+02 +- 7.31E+01	1.14E+02	5.38E+01	5.04E+04
	911.07		9.04E+01 +- 4.04E+01	5.50E+01	2.48E+01	5.04E+04
Tl-208	583.14		2.39E+01 +- 1.09E+01	1.56E+01	7.18E+00	1.27E+14
Bi-214	609.32		5.23E+01 +- 3.05E+01	4.75E+01	2.26E+01	1.40E+07
K-40	1460.75	N	8.37E+01 +- 1.44E+02	2.43E+02	1.13E+02	1.12E+13
Am-241	59.54	N	-3.40E+01 +- 4.08E+01	7.39E+01	3.53E+01	3.80E+06
Eu-155	105.31	N	-2.13E+00 +- 3.02E+01	5.27E+01	2.49E+01	4.35E+04
Co-57	122.07	N	0.00E+00 +- 7.72E+00	1.34E+01	6.35E+00	6.48E+03
Ce-144	133.53	N	2.83E+01 +- 6.02E+01	1.01E+02	4.79E+01	6.82E+03
Ce-139	165.85	N	-1.52E+00 +- 9.69E+00	1.69E+01	8.05E+00	3.30E+03
Th-227	236.00	N	-9.59E+01 +- 8.27E+01	1.54E+02R	7.46E+01	1.90E+05
Cr-51	320.07	N	3.29E+01 +- 2.05E+02	3.56E+02	1.67E+02	6.65E+02
I-131	364.48	N	-2.89E+02 +- 4.35E+02	8.04E+02	3.77E+02	1.93E+02
Sb-125	427.95	N	-1.07E+01 +- 2.30E+01	4.23E+01	1.97E+01	2.43E+04
Be-7	477.56	N	-1.15E+02 +- 1.18E+02	2.28E+02	1.06E+02	1.28E+03
Sb-124	602.71	N	-1.03E+01 +- 2.13E+01	3.78E+01B	1.80E+01	1.44E+03
Cs-134	604.66	N	1.80E+00 +- 1.71E+01	2.89E+01R	1.39E+01	1.81E+04

041004D10.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Ru-106	621.84	N	5.64E+01	+- 1.03E+02	1.73E+02	8.04E+01	8.84E+03
Ag-110M	657.75	N	-8.80E+00	+- 1.06E+01	2.01E+01	9.37E+00	6.00E+03
Cs-137	661.62	N	3.03E+00	+- 1.04E+01	1.80E+01	8.36E+00	2.64E+05
Nb-94	702.50	N	-5.47E-01	+- 1.02E+01	1.81E+01	8.45E+00	1.78E+08
Bi-212	727.17	N	9.59E+01	+- 1.44E+02	2.40E+02	1.10E+02	1.67E+04
Nb-95	765.82	N	-8.71E+00	+- 1.79E+01	3.27E+01	1.53E+01	1.54E+03
Co-58	810.75	N	9.98E+00	+- 1.72E+01	2.88E+01	1.34E+01	1.70E+03
Mn-54	834.81	N	-1.07E+01	+- 1.17E+01	2.22E+01	1.04E+01	7.49E+03
Sc-46	889.26	N	-2.57E+00	+- 1.39E+01	2.53E+01	1.17E+01	2.01E+03
Pa-234m	1001.03	N	4.60E+02	+- 1.87E+03	3.25E+03	1.50E+03	3.92E+13
Eu-154	1004.80	N	3.46E+01	+- 5.89E+01	9.90E+01	4.54E+01	7.45E+04
Fe-59	1099.22	N	1.87E+01	+- 4.26E+01	7.26E+01	3.35E+01	1.08E+03
Zn-65	1115.52	N	-1.53E+01	+- 4.13E+01	7.46E+01R	3.55E+01	5.85E+03
Co-56	1238.28	N	-1.00E+01	+- 3.01E+01	5.49E+01	2.55E+01	1.86E+03
Na-22	1274.54	N	-3.69E+00	+- 1.25E+01	2.30E+01	1.06E+01	2.28E+04
Co-60	1332.51	N	7.35E+00	+- 1.17E+01	1.97E+01	8.93E+00	4.62E+04
Eu-152	1408.08	N	2.21E+01	+- 6.64E+01	1.14E+02	5.28E+01	1.17E+05
Al-26	1808.65	N	-2.50E+00	+- 1.27E+01	2.36E+01	1.07E+01	6.31E+09

MEASURED TOTAL: 1.19E+03 +- 2.87E+03 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.39	95.08	-4	32	27	111	1.14	Deleted
2	66.82	135.84	5	33	27	132	0.98	Deleted
3	74.64	151.46	66	45	34	173	1.71	Unknown
4	77.15	156.45	62	34	25	104	0.93	Unknown
6	139.73	281.36	33	24	17	52	0.71	Unknown
8	198.57	398.79	9	27	21	78	0.97	Deleted
13	511.29	1022.93	-5	39	32	83	2.55	Deleted
14	559.28	1118.70	17	22	16	39	1.81	Unknown
18	1120.39	2238.59	15	29	23	45	5.21	Deleted
20	1766.50	3528.12	39	32	25	29	11.41	Unknown

041216D04.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-4 GS040614-2 Code: 041216D04A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 09:39:26
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	9.39E+001 g	Real Time	1809 Sec
Collection Efficiency	1.0000	Spc. File	.041216D04.SPC

Detector #: 4 (Detector 4)

Energy(keV)= -1.08 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004
FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	63.34	128.59	43	29	21	113	0.52	a
2	74.84	151.55	256	48	30	181	0.86	a
3	77.03	155.92	431	55	30	181	0.75	b
4	84.07	169.97	98	45	33	200	1.02	a
5	87.17	176.16	172	48	33	200	1.03	b
6	89.96	181.73	127	37	25	133	0.72	c
7	92.88	187.57	203	49	33	200	1.05	d
8	105.42	212.60	43	37	29	153	0.97	a
9	129.02	259.70	46	30	22	106	0.61	a
10	154.03	309.62	37	28	21	97	0.69	a
11	185.85	373.14	169	43	28	133	1.16	a
12	209.01	419.39	93	37	26	125	1.01	a
13	238.47	478.20	1092	73	25	113	0.99	a
14	241.41	484.06	166	45	31	151	1.33	b
15	270.27	541.68	110	39	27	107	1.55	a
16	277.28	555.67	31	22	16	57	0.58	a
17	295.13	591.29	237	40	21	78	1.10	a
18	300.02	601.06	49	25	17	56	0.80	b
19	327.78	656.48	55	28	20	71	0.97	a
20	338.12	677.13	264	39	18	54	1.22	a
21	351.65	704.13	451	47	17	49	1.17	a
22	409.57	819.75	47	31	23	80	1.50	a
23	462.69	925.79	75	26	16	50	1.33	a
24	510.38	1021.00	134	33	19	59	1.64	a

000153

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	582.87	1165.70	293	41	18	56	1.47	a
26	608.87	1217.61	306	40	16	46	1.52	a
27	661.20	1322.07	35	24	17	49	1.67	a
28	726.83	1453.07	62	24	15	40	1.61	a
29	794.32	1587.80	57	21	13	29	1.63	a
30	860.18	1719.28	22	14	9	19	0.96	a
31	910.70	1820.13	258	35	12	26	1.88	a
32	968.48	1935.48	129	31	17	56	1.58	a
33	1119.76	2237.46	43	22	15	32	3.04	a
34	1237.52	2472.55	28	15	8	15	1.36	a
35	1376.61	2750.20	15	16	12	19	3.40	a
36	1459.83	2916.32	207	30	8	11	2.66	a
37	1587.40	3170.99	23	14	9	15	1.64	a
38	1763.31	3522.14	60	17	5	4	2.72	a

041216D04.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET040625.BKG (0418003-34 Weekly Background)

Bkg.File Detector #: 4

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	63.34	43	29	21	39	29	22	
2	74.84	256	48	30	252	49	30	
3	77.03	431	55	30	427	55	30	
5	87.17	172	48	33	172	48	33	
6	89.96	127	37	25	127	37	25	
7	92.88	203	49	33	192	49	34	
11	185.85	169	43	28	161	43	28	
13	238.47	1092	73	25	1086	73	25	
20	338.12	264	39	18	262	39	18	
21	351.65	451	47	17	447	47	18	
24	510.38	134	33	19	96	33	22	
25	582.87	293	41	18	291	41	18	
26	608.87	306	40	16	303	40	17	
31	910.70	258	35	12	257	36	13	
36	1459.83	207	30	8	202	31	9	

041216D04.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-4 GS040614-2 Code: 041216D04A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 09:39:26
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	9.39e+001 g	Real Time	1809 Sec
Collection Efficiency	1.0000	Spectrum File	.041216D04.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 4 (Detector 4)

Efficiency File: (D04)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[4.98E-03*En^-3.26E+00 + 6.77E+01*En^8.96E-01] 06/21/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	1.01E+01	+- 2.49E+00	. . . .	. . . .	3.92E+13
	63.29		7.24E+00	+- 5.47E+00	8.67E+00	4.08E+00	3.92E+13
	92.50		1.09E+01	+- 2.80E+00	3.96E+00	1.90E+00	3.92E+13
Eu-155	105.31		5.56E-01	+- 4.78E-01	7.71E-01	3.68E-01	4.35E+04
U-235	143.76	N	5.89E-01	+- 6.42E-01	1.05E+00	4.95E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	. . . .	6.17E+12
Pb-212	Average:	x	8.09E+00	+- 5.37E-01	. . . .	. . . .	1.67E+04
	238.63		8.17E+00	+- 5.47E-01	4.00E-01	1.90E-01	1.67E+04
	300.09		5.89E+00	+- 2.95E+00	4.33E+00	2.00E+00	1.67E+04
Tl-208	Average:	x	2.22E+00	+- 2.99E-01	. . . .	. . . .	1.27E+14
	277.36		1.72E+00	+- 1.24E+00	1.92E+00	8.88E-01	1.27E+14
	583.14		2.30E+00	+- 3.22E-01	3.11E-01	1.45E-01	1.27E+14
	860.47		1.64E+00	+- 1.09E+00	1.57E+00	6.83E-01	1.27E+14
Pb-214	Average:	x	4.95E+00	+- 4.45E-01	. . . .	. . . .	1.40E+07
	295.22		4.54E+00	+- 7.71E-01	8.70E-01	4.09E-01	1.40E+07
	351.99		5.15E+00	+- 5.46E-01	4.36E-01	2.03E-01	1.40E+07
Ra-228	Average:	x	9.73E+00	+- 9.13E-01	. . . .	. . . .	5.04E+04
	338.40		9.78E+00	+- 1.46E+00	1.45E+00	6.72E-01	5.04E+04
	911.07		1.01E+01	+- 1.41E+00	1.14E+00	5.17E-01	5.04E+04
	968.90		8.76E+00	+- 2.11E+00	2.54E+00	1.18E+00	5.04E+04
Sb-125	Average:	x	4.00E-01	+- 3.51E-01	. . . .	. . . .	2.43E+04
	463.51		4.04E+00	+- 1.42E+00	1.92E+00	8.86E-01	2.43E+04
	427.95	N	1.65E-01	+- 3.62E-01	6.16E-01	2.84E-01	2.43E+04
Bi-214	Average:	x	4.45E+00	+- 5.75E-01	. . . .	. . . .	1.40E+07
	609.32		4.57E+00	+- 6.08E-01	5.45E-01	2.52E-01	1.40E+07

041216D04.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
	1120.28		3.41E+00 +- 1.77E+00	2.58E+00	1.18E+00	1.40E+07
Cs-137	661.62		3.12E-01 +- 2.12E-01	3.28E-01	1.52E-01	2.64E+05
Bi-212	727.17		8.05E+00 +- 3.10E+00	4.20E+00	1.92E+00	1.67E+04
Cs-134	Average:x		6.14E-01 +- 2.30E-01	. . . .	. . . .	1.81E+04
	795.76		6.16E-01 +- 2.32E-01	3.01E-01	1.36E-01	1.81E+04
	604.66	N	4.87E-01 +- 1.78E+00	2.95E+00P	1.46E+00	1.81E+04
Co-56	1238.28		8.82E-01 +- 4.63E-01	6.14E-01	2.64E-01	1.86E+03
K-40	1460.75		2.78E+01 +- 4.22E+00	2.95E+00	1.29E+00	1.12E+13
Am-241	59.54	N	-1.77E-01 +- 7.07E-01	1.25E+00	5.91E-01	3.80E+06
Co-57	122.07	N	-4.51E-02 +- 9.46E-02	1.69E-01	8.03E-02	6.48E+03
Ce-144	133.53	N	6.04E-01 +- 7.28E-01	1.19E+00	5.64E-01	6.82E+03
Ce-139	165.85	N	-3.14E-02 +- 1.15E-01	2.03E-01	9.60E-02	3.30E+03
Th-227	236.00	N	7.81E+00 +- 1.97E+01	3.24E+01P	1.62E+01	1.90E+05
Cr-51	320.07	N	-3.57E+00 +- 3.53E+00	6.72E+00	3.15E+00	6.65E+02
I-131	364.48	N	-8.78E+00 +- 1.38E+01	2.56E+01	1.20E+01	1.93E+02
Be-7	477.56	N	9.75E-01 +- 2.16E+00	3.67E+00	1.69E+00	1.28E+03
Sb-124	602.71	N	8.40E-02 +- 2.81E-01	4.85E-01B	2.25E-01	1.44E+03
Ru-106	621.84	N	3.50E-01 +- 1.37E+00	2.41E+00	1.10E+00	8.84E+03
Ag-110M	657.75	N	-1.13E-01 +- 2.50E-01	4.62E-01R	2.19E-01	6.00E+03
Nb-94	702.50	N	4.75E-02 +- 1.53E-01	2.64E-01	1.21E-01	1.78E+08
Nb-95	765.82	N	1.39E-01 +- 3.04E-01	5.18E-01	2.38E-01	1.54E+03
Co-58	810.75	N	0.00E+00 +- 2.31E-01	4.22E-01	1.90E-01	1.70E+03
Mn-54	834.81	N	1.46E-01 +- 1.91E-01	3.15E-01	1.43E-01	7.49E+03
Sc-46	889.26	N	-7.82E-02 +- 2.50E-01	4.69E-01	2.14E-01	2.01E+03
Pa-234m	1001.03	N	2.02E+01 +- 2.68E+01	4.42E+01	1.96E+01	3.92E+13
Eu-154	1004.80	N	-7.99E-01 +- 8.50E-01	1.74E+00	7.88E-01	7.45E+04
Fe-59	1099.22	N	3.39E-01 +- 6.65E-01	1.14E+00	5.04E-01	1.08E+03
Zn-65	1115.52	N	-3.20E-01 +- 9.00E-01	1.59E+00P	7.57E-01	5.85E+03
Na-22	1274.54	N	2.33E-02 +- 1.72E-01	3.15E-01	1.38E-01	2.28E+04
Co-60	1332.51	N	-1.24E-01 +- 1.61E-01	3.37E-01	1.49E-01	4.62E+04
Eu-152	1408.08	N	2.35E-02 +- 7.14E-01	1.36E+00	5.84E-01	1.17E+05
Al-26	1808.65	N	-2.77E-02 +- 1.61E-01	3.25E-01	1.38E-01	6.31E+09

MEASURED TOTAL: 1.10E+02 +- 6.82E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
2	74.84	151.55	252	49	30	181	0.86	Unknown
3	77.03	155.92	427	55	30	181	0.75	Unknown
4	84.07	169.97	98	45	33	200	1.02	Unknown
5	87.17	176.16	172	48	33	200	1.03	Unknown
6	89.96	181.73	127	37	25	133	0.72	Unknown
9	129.02	259.70	46	30	22	106	0.61	Unknown
10	154.03	309.62	37	28	21	97	0.69	Unknown
12	209.01	419.39	93	37	26	125	1.01	Unknown

041216D04.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
14	241.41	484.06	166	45	31	151	1.33	Unknown
15	270.27	541.68	110	39	27	107	1.55	Unknown
19	327.78	656.48	55	28	20	71	0.97	Unknown
22	409.57	819.75	47	31	23	80	1.50	Unknown
24	510.38	1021.00	96	33	22	59	1.64	Unknown
35	1376.61	2750.20	15	16	12	19	3.40	Unknown
37	1587.40	3170.99	23	14	9	15	1.64	Unknown
38	1763.31	3522.14	60	17	5	4	2.72	Unknown

041055D07.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-5 GS040614-2 Code: 041055D07A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 09:39:39
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	9.22E+001 g	Real Time	1805 Sec
Collection Efficiency	1.0000	Spc. File	.041055D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.03 + 0.500*Ch + 5.21E-07*Ch^2 +-8.19E-11*Ch^3 07/01/2004
FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.45	96.92	67	31	22	98	0.83 a	
2	63.17	130.34	78	34	24	115	0.74 a	
3	74.80	153.59	239	43	24	118	0.86 a	
4	77.08	158.13	373	49	24	118	0.79 b	
5	84.11	172.18	22	34	27	134	1.03 a	NET< CL
6	87.16	178.29	80	34	24	112	0.80 b	
7	89.76	183.49	61	25	16	67	0.45 c	
8	92.75	189.45	117	43	30	156	1.08 d	
9	128.91	261.71	36	19	12	35	0.46 a	
10	185.74	375.26	107	31	19	61	1.09 a	
11	209.36	422.44	30	26	20	65	1.21 a	
12	238.57	480.79	348	41	15	40	0.96 a	
13	241.65	486.95	100	32	20	60	1.49 b	
14	270.00	543.57	29	22	16	42	1.23 a	
15	295.18	593.85	133	29	15	41	0.96 a	
16	300.10	603.68	22	22	17	48	1.08 b	
17	338.18	679.73	47	21	13	37	0.86 a	
18	351.85	707.03	220	35	16	43	1.12 a	
19	462.73	928.40	24	13	7	13	0.79 a	
20	510.70	1024.15	61	22	13	24	2.00 a	
21	583.10	1168.63	101	24	11	21	1.28 a	
22	609.34	1221.00	145	28	12	27	1.27 a	
23	727.96	1457.69	41	19	12	19	2.45 a	Wide Pk
24	911.30	1823.46	52	17	8	14	1.18 a	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	968.97	1938.50	20	15	10	20	1.16	a
26	1120.73	2241.24	25	17	11	20	2.01	a
27	1460.56	2919.22	157	26	6	7	1.99	a
28	1763.19	3523.26	20	11	6	5	2.98	a

041055D07.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET070625.BKG (0418003-37 Weekly Background)

Bkg.File Detector #: 7

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.45	67	31	22	52	32	23	
2	63.17	78	34	24	66	34	25	
3	74.80	239	43	24	236	43	25	
4	77.08	373	49	24	371	49	25	
5	84.11	22	34	27	19	34	27	NET<CL
8	92.75	117	43	30	101	43	31	
9	128.91	36	19	12	36	19	12	
10	185.74	107	31	19	99	31	20	
12	238.57	348	41	15	341	42	16	
14	270.00	29	22	16	29	22	16	
17	338.18	47	21	13	45	22	14	
18	351.85	220	35	16	218	35	16	
20	510.70	61	22	13	27	23	17	
21	583.10	101	24	11	100	24	11	
22	609.34	145	28	12	143	28	13	
24	911.30	52	17	8	50	17	9	
25	968.97	20	15	10	19	15	10	
27	1460.56	157	26	6	153	26	7	

041055D07.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-5 GS040614-2 Code: 041055D07A

Sampling Start: 05/07/2004 12:00:00	Counting Start: 07/01/2004 09:39:39
Sampling Stop: 05/07/2004 12:00:00	Decay Time. . . . . 1.32e+003 Hrs
Buildup Time. . . . . 0.00e+000 Hrs	Live Time . . . . . 1800 Sec
Sample Size . . . . . 9.22e+001 g	Real Time . . . . . 1805 Sec
Collection Efficiency 1.0000	Spectrum File 041055D07.SPC
Cr. Level Confidence Interval: 95 %	Det. Limit Confidence Interval: 95 %

Detector #: 7 (Detector 7)

Efficiency File: (D07)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[1.41E-01*En^-1.49E+00 + 9.67E+01*En^9.61E-01] 01/02/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	4.35E+00 +- 1.43E+00	. . . .	. . . .	3.92E+13
	63.29		4.27E+00 +- 2.23E+00	3.41E+00	1.62E+00	3.92E+13
	92.50		4.40E+00 +- 1.87E+00	2.84E+00	1.36E+00	3.92E+13
U-235	143.76	N	-3.02E-01 +- 7.09E-01	1.27E+00	6.01E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	Average:	x	3.47E+00 +- 4.20E-01	. . . .	. . . .	1.67E+04
	238.63		3.47E+00 +- 4.23E-01	3.46E-01	1.59E-01	1.67E+04
	300.09		3.67E+00 +- 3.69E+00	5.96E+00	2.76E+00	1.67E+04
Pb-214	Average:	x	3.47E+00 +- 4.54E-01	. . . .	. . . .	1.40E+07
	295.22		3.49E+00 +- 7.67E-01	8.50E-01	3.90E-01	1.40E+07
	351.99		3.46E+00 +- 5.63E-01	5.57E-01	2.57E-01	1.40E+07
Ra-228	Average:	x	2.46E+00 +- 6.62E-01	. . . .	. . . .	5.04E+04
	338.40		2.32E+00 +- 1.11E+00	1.57E+00	7.17E-01	5.04E+04
	911.07		2.85E+00 +- 9.95E-01	1.13E+00	4.88E-01	5.04E+04
	968.90		1.86E+00 +- 1.47E+00	2.24E+00	9.85E-01	5.04E+04
Sb-125	Average:	x	2.88E-01 +- 3.09E-01	. . . .	. . . .	2.43E+04
	463.51		1.84E+00 +- 9.96E-01	1.32E+00	5.57E-01	2.43E+04
	427.95	N	1.22E-01 +- 3.25E-01	5.70E-01	2.52E-01	2.43E+04
Tl-208	583.14		1.12E+00 +- 2.68E-01	2.76E-01	1.23E-01	1.27E+14
Bi-214	Average:	x	3.03E+00 +- 5.77E-01	. . . .	. . . .	1.40E+07
	609.32		3.05E+00 +- 6.05E-01	5.93E-01	2.68E-01	1.40E+07
	1120.28		2.86E+00 +- 1.93E+00	2.88E+00	1.28E+00	1.40E+07
Bi-212	727.17		7.69E+00 +- 3.63E+00	5.02E+00	2.26E+00	1.67E+04
K-40	1460.75		3.16E+01 +- 5.39E+00	3.50E+00	1.47E+00	1.12E+13
Am-241	59.54	N	1.93E-01 +- 1.94E-01	3.14E-01B	1.47E-01	3.80E+06

041055D07.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Eu-155	105.31	N	2.74E-01 +- 2.66E-01	4.27E-01	1.97E-01	4.35E+04
Co-57	122.07	N	-1.76E-02 +- 8.49E-02	1.52E-01	7.11E-02	6.48E+03
Ce-144	133.53	N	5.94E-01 +- 7.04E-01	1.15E+00	5.39E-01	6.82E+03
Ce-139	165.85	N	-6.19E-02 +- 1.18E-01	2.17E-01	1.02E-01	3.30E+03
Th-227	236.00	N	-8.70E-01 +- 2.46E+01	4.05E+01P	2.02E+01	1.90E+05
Cr-51	320.07	N	-3.02E+00 +- 3.80E+00	7.36E+00	3.39E+00	6.65E+02
I-131	364.48	N	5.64E-01 +- 1.53E+01	2.73E+01	1.25E+01	1.93E+02
Be-7	477.56	N	0.00E+00 +- 2.14E+00	3.93E+00	1.76E+00	1.28E+03
Sb-124	602.71	N	7.46E-02 +- 2.89E-01	5.09E-01	2.29E-01	1.44E+03
Cs-134	604.66	N	4.21E-02 +- 1.63E-01	2.88E-01B	1.30E-01	1.81E+04
Ru-106	621.84	N	9.07E-01 +- 1.36E+00	2.28E+00	9.87E-01	8.84E+03
Ag-110M	657.75	N	-1.90E-01 +- 1.90E-01	3.88E-01	1.76E-01	6.00E+03
Cs-137	661.62	N	1.87E-01 +- 2.17E-01	3.53E-01	1.59E-01	2.64E+05
Nb-94	702.50	N	1.73E-02 +- 1.62E-01	2.93E-01	1.31E-01	1.78E+08
Nb-95	765.82	N	2.10E-01 +- 3.35E-01	5.64E-01	2.52E-01	1.54E+03
Co-58	810.75	N	-1.09E-01 +- 2.48E-01	4.98E-01	2.19E-01	1.70E+03
Mn-54	834.81	N	1.35E-02 +- 1.73E-01	3.22E-01	1.41E-01	7.49E+03
Sc-46	889.26	N	-1.11E-01 +- 2.47E-01	4.98E-01	2.19E-01	2.01E+03
Pa-234m	1001.03	N	1.61E+01 +- 2.62E+01	4.46E+01	1.87E+01	3.92E+13
Eu-154	1004.80	N	-1.78E-01 +- 8.73E-01	1.74E+00	7.47E-01	7.45E+04
Fe-59	1099.22	N	-3.13E-01 +- 7.51E-01	1.52E+00	6.65E-01	1.08E+03
Zn-65	1115.52	N	1.22E-01 +- 1.01E+00	1.75E+00P	8.20E-01	5.85E+03
Co-56	1238.28	N	4.69E-01 +- 5.13E-01	8.16E-01	3.45E-01	1.86E+03
Na-22	1274.54	N	-2.07E-02 +- 2.15E-01	4.17E-01	1.80E-01	2.28E+04
Co-60	1332.51	N	-1.48E-01 +- 1.94E-01	4.26E-01	1.84E-01	4.62E+04
Eu-152	1408.08	N	4.20E-01 +- 1.03E+00	1.83E+00	7.73E-01	1.17E+05
Al-26	1808.65	N	1.40E-02 +- 1.59E-01	3.29E-01	1.26E-01	6.31E+09

MEASURED TOTAL: 7.76E+01 +- 6.12E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.45	96.92	52	32	23	98	0.83	Unknown
3	74.80	153.59	236	43	25	118	0.86	Unknown
4	77.08	158.13	371	49	25	118	0.79	Unknown
5	84.11	172.18	19	34	27	134	1.03	Deleted
6	87.16	178.29	80	34	24	112	0.80	Unknown
7	89.76	183.49	61	25	16	67	0.45	Unknown
9	128.91	261.71	36	19	12	35	0.46	Unknown
11	209.36	422.44	30	26	20	65	1.21	Unknown
13	241.65	486.95	100	32	20	60	1.49	Unknown
14	270.00	543.57	29	22	16	42	1.23	Unknown
20	510.70	1024.15	27	23	17	24	2.00	Unknown
28	1763.19	3523.26	20	11	6	5	2.98	Unknown

041130D02.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-6 GS040614-2 Code: 041130D02A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 09:46:52
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	9.69E+001 g	Real Time	1805 Sec
Collection Efficiency	1.0000	Spc. File	.041130D02.SPC

Detector #: 2 (Detector 2)

Energy(keV)= -0.75 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.74	150.93	50	25	17	63	0.63 a	
2	77.03	155.49	105	32	20	78	0.89 b	
3	89.56	180.55	10	16	12	39	0.39 a	NET< CL
4	93.24	187.90	48	27	19	77	0.63 b	
5	185.86	373.06	66	25	16	50	0.87 a	
6	209.14	419.60	38	24	17	54	0.90 a	
7	238.62	478.55	253	37	16	48	0.97 a	Wide Pk
8	241.52	484.34	66	33	24	80	1.67 b	
9	270.56	542.38	41	24	16	39	1.43 a	
10	295.17	591.60	127	30	16	44	1.16 a	
11	338.27	677.75	38	20	13	33	1.06 a	
12	351.88	704.96	177	33	16	42	1.08 a	
13	462.95	927.00	14	14	9	19	0.99 a	
14	511.08	1023.22	55	21	12	25	1.65 a	
15	583.26	1167.52	89	22	10	18	1.35 a	
16	609.26	1219.49	128	26	11	25	1.18 a	
17	661.70	1324.33	21	15	10	20	0.93 a	
18	727.26	1455.39	20	15	10	20	1.25 a	
19	911.34	1823.40	40	18	11	19	1.88 a	
20	968.72	1938.10	17	12	8	14	0.82 a	
21	1119.89	2240.31	18	16	11	18	2.28 a	
22	1460.73	2921.69	205	29	5	4	2.29 a	
23	1765.15	3530.26	25	11	4	3	1.17 a	

041130D02.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	74.74	50	25	17	46	25	17	
2	77.03	105	32	20	102	32	20	
3	89.56	10	16	12	10	16	12	NET<CL
4	93.24	48	27	19	36	27	20	
5	185.86	66	25	16	59	25	17	
7	238.62	253	37	16	245	38	17	
10	295.17	127	30	16	124	31	17	
11	338.27	38	20	13	36	21	14	
12	351.88	177	33	16	173	33	16	
14	511.08	55	21	12	14	22	17	NET<CL
15	583.26	89	22	10	84	22	11	
16	609.26	128	26	11	124	27	12	
19	911.34	40	18	11	39	18	11	
20	968.72	17	12	8	15	12	8	
22	1460.73	205	29	5	199	29	6	
23	1765.15	25	11	4	24	11	4	

041130D02.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-6 GS040614-2 Code: 041130D02A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 09:46:52
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	9.69e+001 g	Real Time	1805 Sec
Collection Efficiency	1.0000	Spectrum File	.041130D02.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 2 (Detector 2)

Efficiency File: (D02)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[8.73E-04*En^-4.04E+00 + 6.76E+01*En^8.33E-01] 06/01/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	92.50		2.25E+00 +- 1.71E+00	2.70E+00	1.26E+00	3.92E+13
U-235	143.76	N	6.11E-03 +- 4.36E-01	7.76E-01	3.58E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		1.93E+00 +- 2.94E-01	2.88E-01	1.33E-01	1.67E+04
Pb-214	Average:x		2.17E+00 +- 3.28E-01	. . . .	. . . .	1.40E+07
	295.22		2.47E+00 +- 6.06E-01	7.35E-01	3.41E-01	1.40E+07
	351.99		2.05E+00 +- 3.90E-01	4.19E-01	1.93E-01	1.40E+07
Ra-228	Average:x		1.30E+00 +- 4.41E-01	. . . .	. . . .	5.04E+04
	338.40		1.38E+00 +- 7.97E-01	1.18E+00	5.38E-01	5.04E+04
	911.07		1.47E+00 +- 6.98E-01	9.50E-01	4.23E-01	5.04E+04
	968.90		9.85E-01 +- 8.11E-01	1.24E+00	5.29E-01	5.04E+04
Sb-125	Average:x		1.43E-01 +- 2.43E-01	. . . .	. . . .	2.43E+04
	463.51		7.55E-01 +- 7.42E-01	1.18E+00	5.15E-01	2.43E+04
	427.95	N	6.86E-02 +- 2.58E-01	4.56E-01	2.04E-01	2.43E+04
Tl-208	583.14		6.65E-01 +- 1.78E-01	1.91E-01	8.49E-02	1.27E+14
Bi-214	Average:x		1.81E+00 +- 3.82E-01	. . . .	. . . .	1.40E+07
	609.32		1.86E+00 +- 4.03E-01	4.11E-01	1.85E-01	1.40E+07
	1120.28		1.39E+00 +- 1.20E+00	1.86E+00	8.28E-01	1.40E+07
Cs-137	661.62		1.86E-01 +- 1.31E-01	1.95E-01	8.57E-02	2.64E+05
Bi-212	727.17		2.60E+00 +- 2.00E+00	3.03E+00	1.34E+00	1.67E+04
K-40	1460.75		2.60E+01 +- 3.81E+00	1.98E+00	8.15E-01	1.12E+13
Am-241	59.54	N	4.54E-01 +- 6.73E-01	1.12E+00	5.11E-01	3.80E+06
Eu-155	105.31	N	1.61E-01 +- 2.75E-01	4.62E-01	2.12E-01	4.35E+04
Co-57	122.07	N	-2.01E-02 +- 6.19E-02	1.14E-01	5.27E-02	6.48E+03
Ce-144	133.53	N	-6.00E-01 +- 4.87E-01	9.65E-01	4.49E-01	6.82E+03

041130D02.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Ce-139	165.85	N	-8.33E-03 +- 8.28E-02	1.49E-01	6.88E-02	3.30E+03
Th-227	236.00	N	1.56E-01 +- 5.06E-01	8.75E-01B	4.02E-01	1.90E+05
Cr-51	320.07	N	-4.82E-01 +- 2.43E+00	4.53E+00	2.05E+00	6.65E+02
I-131	364.48	N	-4.51E+00 +- 1.06E+01	2.00E+01	9.17E+00	1.93E+02
Be-7	477.56	N	-7.40E-01 +- 1.31E+00	2.65E+00	1.18E+00	1.28E+03
Sb-124	602.71	N	0.00E+00 +- 2.10E-01	3.82E-01	1.73E-01	1.44E+03
Cs-134	604.66	N	-5.94E-02 +- 1.19E-01	2.27E-01B	1.04E-01	1.81E+04
Ru-106	621.84	N	4.78E-01 +- 1.01E+00	1.74E+00	7.64E-01	8.84E+03
Ag-110M	657.75	N	0.00E+00 +- 1.29E-01	2.38E-01B	1.06E-01	6.00E+03
Nb-94	702.50	N	-5.98E-03 +- 1.15E-01	2.12E-01	9.51E-02	1.78E+08
Nb-95	765.82	N	-2.87E-01 +- 2.26E-01	4.71E-01	2.15E-01	1.54E+03
Co-58	810.75	N	-2.46E-02 +- 1.64E-01	3.19E-01	1.39E-01	1.70E+03
Mn-54	834.81	N	-1.83E-02 +- 1.22E-01	2.33E-01	1.03E-01	7.49E+03
Sc-46	889.26	N	2.99E-02 +- 1.84E-01	3.36E-01	1.48E-01	2.01E+03
Pa-234m	1001.03	N	1.78E+00 +- 1.98E+01	3.68E+01	1.60E+01	3.92E+13
Eu-154	1004.80	N	-3.54E-01 +- 6.25E-01	1.29E+00	5.67E-01	7.45E+04
Fe-59	1099.22	N	-1.17E-01 +- 5.29E-01	1.03E+00	4.51E-01	1.08E+03
Zn-65	1115.52	N	5.57E-02 +- 6.53E-01	1.14E+00P	5.34E-01	5.85E+03
Co-56	1238.28	N	1.34E-01 +- 3.55E-01	6.26E-01	2.72E-01	1.86E+03
Na-22	1274.54	N	-5.34E-02 +- 1.41E-01	2.84E-01	1.24E-01	2.28E+04
Co-60	1332.51	N	6.78E-02 +- 9.78E-02	1.63E-01	6.31E-02	4.62E+04
Eu-152	1408.08	N	6.68E-02 +- 5.82E-01	1.11E+00	4.66E-01	1.17E+05
Al-26	1808.65	N	8.02E-02 +- 1.07E-01	1.74E-01	6.36E-02	6.31E+09

MEASURED TOTAL: 4.25E+01 +- 3.42E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.74	150.93	46	25	17	63	0.63	Unknown
2	77.03	155.49	102	32	20	78	0.89	Unknown
3	89.56	180.55	10	16	12	39	0.39	Deleted
6	209.14	419.60	38	24	17	54	0.90	Unknown
8	241.52	484.34	66	33	24	80	1.67	Unknown
9	270.56	542.38	41	24	16	39	1.43	Unknown
14	511.08	1023.22	14	22	17	25	1.65	Deleted
23	1765.15	3530.26	24	11	4	3	1.17	Unknown

041124D03.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-7 GS040614-2 Code: 041124D03A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 09:46:59
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.03E+002 g	Real Time	1805 Sec
Collection Efficiency	1.0000	Spc. File	.041124D03.SPC

Detector #: 3 (Detector 3)

Energy(keV) = -0.82 + 0.500*Ch + 1.08E-07*Ch^2 +-1.09E-11*Ch^3 07/01/2004
FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	60.04	121.70	31	41	33	235	0.58 a	NET< CL
2	63.26	128.14	93	50	38	294	0.77 b	
3	74.86	151.32	382	67	45	366	1.05 a	
4	77.05	155.70	681	75	45	366	0.93 b	
5	84.03	169.67	115	60	46	366	1.18 a	
6	87.20	176.00	263	65	46	366	1.10 b	
7	89.92	181.44	115	60	46	366	1.07 c	
8	92.71	187.02	325	67	46	366	1.18 d	
9	129.02	259.62	88	68	54	381	1.82 a	Wide Pk
10	144.17	289.91	48	51	40	274	1.13 a	
11	163.45	328.46	41	42	33	204	0.96 a	
12	186.02	373.60	410	64	41	265	1.25 a	
13	209.00	419.53	117	47	34	196	1.17 a	
14	238.71	478.93	1050	75	31	168	1.17 a	
15	241.88	485.27	437	66	42	240	1.60 b	
16	270.21	541.91	94	41	30	155	1.48 a	
17	277.49	556.45	32	25	19	87	0.61 a	
18	295.27	592.00	857	66	25	120	1.32 a	Wide Pk
19	300.02	601.50	78	54	42	225	2.51 b	
20	328.04	657.53	33	37	29	146	1.52 a	
21	338.34	678.11	203	41	24	116	1.13 a	
22	351.90	705.21	1255	78	28	141	1.33 a	
23	462.80	926.90	55	29	21	73	1.47 a	
24	510.90	1023.05	121	36	23	89	1.97 a	

041124D03.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	583.19	1167.56	276	41	20	75	1.42	a
26	609.24	1219.63	907	64	18	58	1.66	a
27	665.05	1331.18	46	31	23	77	2.45	a
28	727.15	1455.29	48	23	15	44	1.29	a
29	768.11	1537.15	63	26	17	54	1.39	a
30	795.04	1590.98	30	26	19	57	2.30	a
31	911.21	1823.15	177	32	15	40	1.90	a
32	933.96	1868.61	49	22	14	36	2.04	a
33	964.88	1930.40	48	21	13	30	1.75	a
34	969.10	1938.84	110	27	14	36	2.05	b
35	1120.29	2240.98	171	30	13	27	2.43	a
36	1154.72	2309.78	31	20	14	33	2.49	a
37	1238.42	2477.03	39	17	10	20	1.63	a
38	1377.95	2755.86	37	21	14	34	2.52	a
39	1509.95	3019.61	27	18	12	23	2.32	a
40	1728.95	3457.22	28	19	13	23	3.32	a
41	1764.76	3528.79	132	26	11	19	2.46	a

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
2	63.26	93	50	38	87	50	39	
3	74.86	382	67	45	378	67	45	
4	77.05	681	75	45	677	75	45	
5	84.03	115	60	46	113	61	47	
8	92.71	325	67	46	310	67	47	
10	144.17	48	51	40	47	51	40	
12	186.02	410	64	41	400	64	41	
14	238.71	1050	75	31	1044	75	32	
18	295.27	857	66	25	854	66	26	
21	338.34	203	41	24	201	41	25	
22	351.90	1255	78	28	1249	78	28	
24	510.90	121	36	23	72	36	26	
25	583.19	276	41	20	271	41	20	
26	609.24	907	64	18	904	64	18	
31	911.21	177	32	15	175	32	15	
41	1764.76	132	26	11	131	26	11	

041124D03.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-7 GS040614-2 Code: 041124D03A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 09:46:59
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.03e+002 g	Real Time	1805 Sec
Collection Efficiency	1.0000	Spectrum File	.041124D03.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 3 (Detector 3)

Efficiency File: (D03)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[2.98E-03*En^-3.47E+00 + 7.49E+01*En^8.79E-01] 05/26/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	1.69E+01 +- 3.43E+00	. . . .	. . . .	3.92E+13
	63.29		1.63E+01 +- 9.43E+00	1.49E+01	7.21E+00	3.92E+13
	92.50		1.70E+01 +- 3.68E+00	5.31E+00	2.58E+00	3.92E+13
U-235	Average:	x	1.21E+00 +- 9.61E-01	. . . .	. . . .	6.17E+12
	143.76		9.96E-01 +- 1.09E+00	1.78E+00	8.63E-01	6.17E+12
	163.35		1.96E+00 +- 2.04E+00	3.34E+00	1.60E+00	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	Average:	x	8.05E+00 +- 5.77E-01	. . . .	. . . .	1.67E+04
	238.63		8.03E+00 +- 5.80E-01	5.11E-01	2.45E-01	1.67E+04
	300.09		9.62E+00 +- 6.63E+00	1.06E+01	5.15E+00	1.67E+04
Tl-208	Average:	x	2.16E+00 +- 3.21E-01	. . . .	. . . .	1.27E+14
	277.36		1.80E+00 +- 1.44E+00	2.27E+00	1.06E+00	1.27E+14
	583.14		2.18E+00 +- 3.29E-01	3.46E-01	1.62E-01	1.27E+14
Pb-214	Average:	x	1.54E+01 +- 7.53E-01	. . . .	. . . .	1.40E+07
	295.22		1.67E+01 +- 1.30E+00	1.07E+00	5.08E-01	1.40E+07
	351.99		1.47E+01 +- 9.24E-01	6.94E-01	3.31E-01	1.40E+07
Ra-228	Average:	x	7.30E+00 +- 8.73E-01	. . . .	. . . .	5.04E+04
	338.40		7.68E+00 +- 1.57E+00	1.98E+00	9.37E-01	5.04E+04
	911.07		6.94E+00 +- 1.28E+00	1.31E+00	5.99E-01	5.04E+04
	968.90		7.52E+00 +- 1.85E+00	2.13E+00	9.70E-01	5.04E+04
Sb-125	Average:	x	3.82E-01 +- 5.13E-01	. . . .	. . . .	2.43E+04
	463.51		3.02E+00 +- 1.59E+00	2.40E+00	1.13E+00	2.43E+04
	427.95	N	7.61E-02 +- 5.42E-01	9.32E-01	4.42E-01	2.43E+04
Bi-212	727.17		6.40E+00 +- 2.98E+00	4.23E+00	1.94E+00	1.67E+04
Cs-134	Average:	x	1.89E-01 +- 1.50E-01	. . . .	. . . .	1.81E+04

041124D03.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g	)	MDA	Critical Level	Halflife (hrs)
	795.76		3.26E-01 +-	2.84E-01	4.53E-01	2.12E-01	1.81E+04
	604.66	N	1.36E-01 +-	1.77E-01	2.93E-01B	1.36E-01	1.81E+04
Bi-214	Average:	x	1.36E+01 +-	2.23E+00	. . . .	. . . . .	1.40E+07
	1120.28		1.36E+01 +-	2.43E+00	2.28E+00	1.03E+00	1.40E+07
	609.32		1.36E+01 +-	5.60E+00	8.82E+00	4.39E+00	1.40E+07
Co-56	1238.28		1.23E+00 +-	5.50E-01	7.20E-01	3.17E-01	1.86E+03
Am-241	59.54	N	1.17E+00 +-	1.28E+00	2.10E+00B	1.02E+00	3.80E+06
Eu-155	105.31	N	2.74E-01 +-	5.32E-01	8.87E-01	4.27E-01	4.35E+04
Co-57	122.07	N	3.49E-02 +-	1.36E-01	2.30E-01	1.11E-01	6.48E+03
Ce-144	133.53	N	4.08E-01 +-	1.01E+00	1.70E+00b	8.17E-01	6.82E+03
Ce-139	165.85	N	4.89E-02 +-	2.88E-01	4.82E-01P	2.35E-01	3.30E+03
Th-227	236.00	N	-3.43E+00 +-	4.41E+01	7.26E+01P	3.62E+01	1.90E+05
Cr-51	320.07	N	-9.54E-01 +-	5.03E+00	8.80E+00	4.19E+00	6.65E+02
I-131	364.48	N	7.52E+00 +-	1.78E+01	3.01E+01	1.42E+01	1.93E+02
Be-7	477.56	N	-2.83E+00 +-	2.94E+00	5.48E+00	2.59E+00	1.28E+03
Sb-124	602.71	N	1.87E-01 +-	3.03E-01	5.06E-01B	2.35E-01	1.44E+03
Ru-106	621.84	N	-6.49E-01 +-	1.73E+00	3.17E+00	1.47E+00	8.84E+03
Ag-110M	657.75	N	-4.67E-02 +-	1.93E-01	3.51E-01B	1.63E-01	6.00E+03
Cs-137	661.62	N	-1.07E-01 +-	2.53E-01	4.64E-01R	2.20E-01	2.64E+05
Nb-94	702.50	N	-7.02E-02 +-	2.11E-01	3.78E-01	1.78E-01	1.78E+08
Nb-95	765.82	N	-8.50E-01 +-	6.07E-01	1.18E+00R	5.67E-01	1.54E+03
Co-58	810.75	N	-1.26E-01 +-	2.69E-01	5.09E-01	2.33E-01	1.70E+03
Mn-54	834.81	N	9.46E-02 +-	2.25E-01	3.84E-01	1.78E-01	7.49E+03
Sc-46	889.26	N	-1.08E-01 +-	2.82E-01	5.25E-01	2.42E-01	2.01E+03
Pa-234m	1001.03	N	1.22E+01 +-	3.27E+01	5.65E+01	2.58E+01	3.92E+13
Eu-154	1004.80	N	-6.97E-01 +-	1.09E+00	2.09E+00	9.62E-01	7.45E+04
Fe-59	1099.22	N	4.88E-02 +-	7.24E-01	1.31E+00	5.90E-01	1.08E+03
Zn-65	1115.52	N	-5.22E-01 +-	6.54E-01	1.29E+00R	6.07E-01	5.85E+03
Na-22	1274.54	N	-3.16E-02 +-	2.12E-01	3.93E-01	1.78E-01	2.28E+04
Co-60	1332.51	N	-1.75E-01 +-	2.18E-01	4.34E-01	1.97E-01	4.62E+04
Eu-152	1408.08	N	7.07E-01 +-	1.33E+00	2.26E+00	1.03E+00	1.17E+05
K-40	1460.75	N	2.60E+00 +-	2.49E+00	3.96E+00	1.79E+00	1.12E+13
Al-26	1808.65	N	1.01E-01 +-	2.07E-01	3.60E-01	1.55E-01	6.31E+09

MEASURED TOTAL: 9.82E+01 +- 7.24E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	60.04	121.70	31	41	33	235	0.58	Deleted
3	74.86	151.32	378	67	45	366	1.05	Unknown
4	77.05	155.70	677	75	45	366	0.93	Unknown
5	84.03	169.67	113	61	47	366	1.18	Unknown
6	87.20	176.00	263	65	46	366	1.10	Unknown
7	89.92	181.44	115	60	46	366	1.07	Unknown
9	129.02	259.62	88	68	54	381	1.82	Unknown

041124D03.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
13	209.00	419.53	117	47	34	196	1.17	Unknown
15	241.88	485.27	437	66	42	240	1.60	Unknown
16	270.21	541.91	94	41	30	155	1.48	Unknown
20	328.04	657.53	33	37	29	146	1.52	Unknown
24	510.90	1023.05	72	36	26	89	1.97	Unknown
26	609.24	1219.63	904	64	18	58	1.66	SPLIT
27	665.05	1331.18	46	31	23	77	2.45	Unknown
29	768.11	1537.15	63	26	17	54	1.39	Unknown
32	933.96	1868.61	49	22	14	36	2.04	Unknown
33	964.88	1930.40	48	21	13	30	1.75	Unknown
36	1154.72	2309.78	31	20	14	33	2.49	Unknown
38	1377.95	2755.86	37	21	14	34	2.52	Unknown
39	1509.95	3019.61	27	18	12	23	2.32	Unknown
40	1728.95	3457.22	28	19	13	23	3.32	Unknown
41	1764.76	3528.79	131	26	11	19	2.46	Unknown
43	609.24	1219.63	14	743	18	58	1.66	1120SEsc

041131D02.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-8 GS040614-2 Code: 041131D02A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 10:23:25
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.01E+002 g	Real Time	1803 Sec
Collection Efficiency	1.0000	Spc. File	.041131D02.SPC

Detector #: 2 (Detector 2)

Energy(keV)= -0.75 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG	
1	63.27	128.00	12	14	10	28	0.36	a	
2	74.68	150.81	48	29	21	92	0.86	a	
3	77.09	155.63	102	33	21	92	0.87	b	
4	87.26	175.95	62	28	19	72	0.79	a	Wide Pk
5	89.88	181.18	34	23	16	57	0.72	b	
6	92.66	186.75	96	41	30	129	1.52	c	
7	185.86	373.07	80	31	21	76	1.15	a	
8	209.34	420.01	31	24	18	60	0.92	a	
9	238.60	478.51	266	40	19	62	1.09	a	
10	241.86	485.01	81	31	21	71	1.26	b	
11	277.55	556.37	17	16	11	27	0.69	a	
12	295.18	591.60	168	31	14	38	1.02	a	
13	338.18	677.58	42	21	13	35	0.82	a	
14	351.82	704.84	274	37	14	33	1.13	a	
15	511.13	1023.31	65	24	15	33	1.95	a	Wide Pk
16	583.16	1167.31	89	21	8	11	1.18	a	
17	609.22	1219.41	183	30	10	19	1.40	a	
18	727.36	1455.59	14	11	6	10	0.71	a	
19	768.01	1536.85	21	14	9	15	1.30	a	
20	911.27	1823.26	44	17	8	13	1.56	a	
21	968.86	1938.37	27	15	9	17	1.07	a	
22	1119.89	2240.30	34	19	12	23	2.51	a	
23	1238.41	2477.24	26	14	8	13	1.62	a	
24	1460.71	2921.65	252	32	3	2	2.13	a	

041131D02.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	1764.57	3529.10	29	13	5	5	2.29	a

041131D02.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	63.27	12	14	10	7	15	11	NET<CL
2	74.68	48	29	21	44	30	22	
3	77.09	102	33	21	99	33	22	
4	87.26	62	28	19	60	28	19	
5	89.88	34	23	16	33	23	16	
6	92.66	96	41	30	83	41	30	
7	185.86	80	31	21	72	31	22	
9	238.60	266	40	19	259	40	20	
12	295.18	168	31	14	165	32	16	
13	338.18	42	21	13	40	21	14	
14	351.82	274	37	14	270	37	15	
15	511.13	65	24	15	24	25	19	
16	583.16	89	21	8	84	21	9	
17	609.22	183	30	10	178	30	12	
20	911.27	44	17	8	42	17	9	
21	968.86	27	15	9	25	15	9	
24	1460.71	252	32	3	246	32	6	
25	1764.57	29	13	5	29	13	6	

041131D02.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-8 GS040614-2 Code: 041131D02A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 10:23:25
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.01e+002 g	Real Time	1803 Sec
Collection Efficiency	1.0000	Spectrum File	.041131D02.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 2 (Detector 2)

Efficiency File: (D02)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[8.73E-04*En^-4.04E+00 + 6.76E+01*En^8.33E-01] 06/01/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	92.50		5.04E+00 +- 2.49E+00	3.85E+00	1.84E+00	3.92E+13
U-235	143.76	N	-3.44E-01 +- 5.01E-01	9.28E-01	4.36E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		1.95E+00 +- 3.02E-01	3.18E-01	1.49E-01	1.67E+04
Tl-208	Average:x		6.49E-01 +- 1.58E-01	. . . .	. . . .	1.27E+14
	277.36		9.17E-01 +- 8.67E-01	1.37E+00	6.10E-01	1.27E+14
	583.14		6.40E-01 +- 1.60E-01	1.52E-01	6.58E-02	1.27E+14
Pb-214	Average:x		3.09E+00 +- 3.47E-01	. . . .	. . . .	1.40E+07
	295.22		3.13E+00 +- 6.05E-01	6.41E-01	2.95E-01	1.40E+07
	351.99		3.07E+00 +- 4.24E-01	3.61E-01	1.65E-01	1.40E+07
Ra-228	Average:x		1.53E+00 +- 4.29E-01	. . . .	. . . .	5.04E+04
	338.40		1.47E+00 +- 7.71E-01	1.12E+00	5.08E-01	5.04E+04
	911.07		1.55E+00 +- 6.18E-01	7.48E-01	3.24E-01	5.04E+04
	968.90		1.56E+00 +- 9.40E-01	1.33E+00	5.81E-01	5.04E+04
Bi-214	Average:x		2.56E+00 +- 4.14E-01	. . . .	. . . .	1.40E+07
	609.32		2.57E+00 +- 4.34E-01	3.71E-01	1.66E-01	1.40E+07
	1120.28		2.51E+00 +- 1.38E+00	2.00E+00	9.01E-01	1.40E+07
Bi-212	727.17		1.70E+00 +- 1.31E+00	1.91E+00	7.86E-01	1.67E+04
Co-56	1238.28		7.40E-01 +- 4.07E-01	5.50E-01	2.36E-01	1.86E+03
K-40	1460.75		3.07E+01 +- 4.00E+00	1.72E+00	6.92E-01	1.12E+13
Am-241	59.54	N	4.47E-01 +- 6.75E-01	1.13E+00	5.15E-01	3.80E+06
Eu-155	105.31	N	1.43E-01 +- 2.97E-01	5.03E-01	2.34E-01	4.35E+04
Co-57	122.07	N	-2.08E-02 +- 6.94E-02	1.26E-01	5.86E-02	6.48E+03
Ce-144	133.53	N	-1.20E-01 +- 4.90E-01	8.90E-01	4.13E-01	6.82E+03
Ce-139	165.85	N	-7.05E-02 +- 8.16E-02	1.56E-01	7.25E-02	3.30E+03

041131D02.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g	)	MDA	Critical Level	Halflife (hrs)
Th-227	236.00	N	-1.75E-01 +-	7.17E-01	1.29E+00R	6.09E-01	1.90E+05
Cr-51	320.07	N	-1.39E+00 +-	2.37E+00	4.59E+00	2.09E+00	6.65E+02
I-131	364.48	N	-4.83E+00 +-	9.95E+00	1.89E+01	8.66E+00	1.93E+02
Sb-125	427.95	N	-2.03E-01 +-	2.69E-01	5.29E-01	2.41E-01	2.43E+04
Be-7	477.56	N	-7.75E-01 +-	1.53E+00	2.98E+00	1.35E+00	1.28E+03
Sb-124	602.71	N	0.00E+00 +-	1.75E-01	3.21E-01	1.44E-01	1.44E+03
Cs-134	604.66	N	-1.42E-02 +-	9.85E-02	1.85E-01B	8.26E-02	1.81E+04
Ru-106	621.84	N	-1.53E-01 +-	8.08E-01	1.58E+00	6.87E-01	8.84E+03
Ag-110M	657.75	N	-4.38E-02 +-	1.20E-01	2.32E-01	1.04E-01	6.00E+03
Cs-137	661.62	N	1.17E-01 +-	1.28E-01	2.06E-01	9.14E-02	2.64E+05
Nb-94	702.50	N	3.82E-02 +-	1.00E-01	1.76E-01	7.76E-02	1.78E+08
Nb-95	765.82	N	-1.82E-01 +-	3.20E-01	6.18E-01R	2.89E-01	1.54E+03
Co-58	810.75	N	-5.62E-02 +-	1.64E-01	3.25E-01	1.43E-01	1.70E+03
Mn-54	834.81	N	4.39E-02 +-	1.34E-01	2.36E-01	1.05E-01	7.49E+03
Sc-46	889.26	N	7.16E-02 +-	1.79E-01	3.13E-01	1.37E-01	2.01E+03
Pa-234m	1001.03	N	8.50E+00 +-	1.83E+01	3.20E+01	1.37E+01	3.92E+13
Eu-154	1004.80	N	-2.83E-01 +-	5.88E-01	1.21E+00	5.26E-01	7.45E+04
Fe-59	1099.22	N	-1.92E-01 +-	4.53E-01	9.26E-01	4.03E-01	1.08E+03
Zn-65	1115.52	N	-4.11E-02 +-	6.97E-01	1.22E+00P	5.76E-01	5.85E+03
Na-22	1274.54	N	-6.39E-02 +-	1.23E-01	2.57E-01	1.11E-01	2.28E+04
Co-60	1332.51	N	-6.49E-02 +-	1.54E-01	3.05E-01	1.35E-01	4.62E+04
Eu-152	1408.08	N	5.12E-01 +-	6.00E-01	9.61E-01	3.94E-01	1.17E+05
Al-26	1808.65	N	-6.04E-02 +-	8.36E-02	2.17E-01	8.61E-02	6.31E+09

MEASURED TOTAL: 5.79E+01 +- 3.03E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	63.27	128.00	7	15	11	28	0.36	Deleted
2	74.68	150.81	44	30	22	92	0.86	Unknown
3	77.09	155.63	99	33	22	92	0.87	Unknown
4	87.26	175.95	60	28	19	72	0.79	Unknown
5	89.88	181.18	33	23	16	57	0.72	Unknown
8	209.34	420.01	31	24	18	60	0.92	Unknown
10	241.86	485.01	81	31	21	71	1.26	Unknown
15	511.13	1023.31	24	25	19	33	1.95	Unknown
19	768.01	1536.85	21	14	9	15	1.30	Unknown
25	1764.57	3529.10	29	13	6	5	2.29	Unknown

041125D03.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-9 GS040614-2 Code: 041125D03A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 10:23:36
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	8.95E+001 g	Real Time	1803 Sec
Collection Efficiency	1.0000	Spc. File	.041125D03.SPC

Detector #: 3 (Detector 3)

Energy(keV)= -0.82 + 0.500*Ch + 1.08E-07*Ch^2 +-1.09E-11*Ch^3 07/01/2004

FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.82	151.26	94	36	25	112	1.00 a	
2	77.06	155.72	158	36	22	93	0.83 b	
3	89.69	180.99	24	29	22	98	0.83 a	
4	92.90	187.40	85	36	25	118	1.06 b	
5	154.15	309.86	30	23	17	58	0.83 a	
6	185.76	373.07	56	31	22	84	1.07 a	
7	209.31	420.15	32	24	17	55	0.97 a	
8	238.67	478.84	292	41	19	61	1.08 a	
9	241.75	485.00	77	33	23	78	1.48 b	
10	295.31	592.09	126	27	13	32	1.14 a	
11	300.36	602.18	31	22	15	42	1.44 b	
12	338.16	677.74	88	27	16	45	1.28 a	
13	351.86	705.13	213	35	16	46	1.43 a	
14	511.00	1023.25	54	29	20	59	2.62 a	Wide Pk
15	583.01	1167.20	101	27	15	37	1.92 a	
16	609.25	1219.64	146	30	14	37	1.60 a	
17	662.12	1325.31	23	16	10	22	1.38 a	
18	727.52	1456.02	26	17	12	25	1.70 a	
19	911.29	1823.31	61	20	10	20	1.64 a	
20	968.87	1938.37	28	20	14	31	2.46 a	
21	1120.33	2241.06	30	17	11	23	2.01 a	
22	1460.94	2921.69	201	30	7	9	2.47 a	

041125D03.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	74.82	94	36	25	90	36	25	
2	77.06	158	36	22	155	37	22	
4	92.90	85	36	25	69	36	26	
6	185.76	56	31	22	46	31	23	
8	238.67	292	41	19	286	41	20	
10	295.31	126	27	13	123	28	14	
12	338.16	88	27	16	86	27	16	
13	351.86	213	35	16	207	35	17	
14	511.00	54	29	20	5	30	24	NET<CL
15	583.01	101	27	15	95	27	16	
16	609.25	146	30	14	143	30	15	
19	911.29	61	20	10	59	20	11	
22	1460.94	201	30	7	194	30	9	

041125D03.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-9 GS040614-2 Code: 041125D03A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 10:23:36
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	8.95e+001 g	Real Time	1803 Sec
Collection Efficiency	1.0000	Spectrum File	.041125D03.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 3 (Detector 3)

Efficiency File: (D03)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[2.98E-03*En^-3.47E+00 + 7.49E+01*En^8.79E-01] 05/26/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Th-234	92.50		4.38E+00	+- 2.29E+00	3.52E+00	1.67E+00	3.92E+13
U-235	143.76	N	1.08E-01	+- 6.33E-01	1.09E+00	5.14E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	. . . .	6.17E+12
Pb-212	Average:x		2.56E+00	+- 3.64E-01	. . . .	. . . .	1.67E+04
	238.63		2.54E+00	+- 3.67E-01	3.71E-01	1.74E-01	1.67E+04
	300.09		4.44E+00	+- 3.09E+00	4.77E+00	2.19E+00	1.67E+04
Pb-214	Average:x		2.80E+00	+- 3.81E-01	. . . .	. . . .	1.40E+07
	295.22		2.78E+00	+- 6.25E-01	6.82E-01	3.10E-01	1.40E+07
	351.99		2.81E+00	+- 4.81E-01	5.00E-01	2.32E-01	1.40E+07
Ra-228	Average:x		2.93E+00	+- 6.53E-01	. . . .	. . . .	5.04E+04
	338.40		3.79E+00	+- 1.18E+00	1.52E+00	7.03E-01	5.04E+04
	911.07		2.68E+00	+- 9.07E-01	1.09E+00	4.81E-01	5.04E+04
	968.90		2.20E+00	+- 1.56E+00	2.38E+00	1.09E+00	5.04E+04
Tl-208	583.14		8.83E-01	+- 2.52E-01	3.15E-01	1.45E-01	1.27E+14
Bi-214	Average:x		2.54E+00	+- 4.99E-01	. . . .	. . . .	1.40E+07
	609.32		2.52E+00	+- 5.26E-01	5.68E-01	2.60E-01	1.40E+07
	1120.28		2.71E+00	+- 1.59E+00	2.30E+00	1.03E+00	1.40E+07
Cs-137	661.62		2.32E-01	+- 1.62E-01	2.43E-01	1.08E-01	2.64E+05
Bi-212	727.17		3.97E+00	+- 2.66E+00	3.96E+00	1.77E+00	1.67E+04
K-40	1460.75		3.08E+01	+- 4.74E+00	3.25E+00	1.41E+00	1.12E+13
Am-241	59.54	N	-5.60E-01	+- 7.59E-01	1.39E+00	6.58E-01	3.80E+06
Eu-155	105.31	N	1.00E-01	+- 3.50E-01	6.01E-01	2.81E-01	4.35E+04
Co-57	122.07	N	0.00E+00	+- 8.21E-02	1.45E-01	6.75E-02	6.48E+03
Ce-144	133.53	N	4.15E-01	+- 6.84E-01	1.14E+00	5.34E-01	6.82E+03
Ce-139	165.85	N	-6.92E-02	+- 1.14E-01	2.09E-01	9.84E-02	3.30E+03

041125D03.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-227	236.00	N	-6.02E+00 +- 2.06E+01	3.40E+01P	1.69E+01	1.90E+05
Cr-51	320.07	N	5.50E-01 +- 3.57E+00	6.28E+00	2.89E+00	6.65E+02
I-131	364.48	N	0.00E+00 +- 1.19E+01	2.16E+01	9.81E+00	1.93E+02
Sb-125	427.95	N	1.57E-01 +- 3.51E-01	6.01E-01	2.73E-01	2.43E+04
Be-7	477.56	N	-2.23E-01 +- 2.13E+00	3.89E+00	1.77E+00	1.28E+03
Sb-124	602.71	N	-1.54E-02 +- 2.33E-01	4.28E-01B	1.93E-01	1.44E+03
Cs-134	604.66	N	8.70E-03 +- 1.29E-01	2.34E-01B	1.05E-01	1.81E+04
Ru-106	621.84	N	2.81E-01 +- 1.41E+00	2.51E+00	1.13E+00	8.84E+03
Ag-110M	657.75	N	-5.38E-02 +- 2.04E-01	3.83E-01R	1.77E-01	6.00E+03
Nb-94	702.50	N	-2.82E-02 +- 1.53E-01	2.83E-01	1.29E-01	1.78E+08
Nb-95	765.82	N	1.24E-01 +- 2.68E-01	4.61E-01	2.06E-01	1.54E+03
Co-58	810.75	N	-8.24E-02 +- 1.81E-01	3.72E-01	1.62E-01	1.70E+03
Mn-54	834.81	N	1.10E-01 +- 1.76E-01	2.97E-01	1.32E-01	7.49E+03
Sc-46	889.26	N	8.92E-02 +- 2.34E-01	4.10E-01	1.81E-01	2.01E+03
Pa-234m	1001.03	N	-9.53E+00 +- 2.78E+01	5.38E+01	2.40E+01	3.92E+13
Eu-154	1004.80	N	-1.00E-01 +- 8.62E-01	1.64E+00	7.22E-01	7.45E+04
Fe-59	1099.22	N	-6.56E-02 +- 6.20E-01	1.19E+00	5.20E-01	1.08E+03
Zn-65	1115.52	N	5.13E-01 +- 8.24E-01	1.38E+00P	6.44E-01	5.85E+03
Co-56	1238.28	N	4.95E-01 +- 5.99E-01	9.79E-01	4.40E-01	1.86E+03
Na-22	1274.54	N	-6.48E-02 +- 2.07E-01	4.01E-01	1.79E-01	2.28E+04
Co-60	1332.51	N	1.65E-02 +- 1.94E-01	3.60E-01	1.58E-01	4.62E+04
Eu-152	1408.08	N	4.28E-01 +- 8.13E-01	1.41E+00	5.94E-01	1.17E+05
Al-26	1808.65	N	-1.06E-02 +- 1.39E-01	2.91E-01	1.17E-01	6.31E+09

MEASURED TOTAL: 5.45E+01 +- 2.22E+01 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.82	151.26	90	36	25	112	1.00	Unknown
2	77.06	155.72	155	37	22	93	0.83	Unknown
3	89.69	180.99	24	29	22	98	0.83	Unknown
5	154.15	309.86	30	23	17	58	0.83	Unknown
7	209.31	420.15	32	24	17	55	0.97	Unknown
9	241.75	485.00	77	33	23	78	1.48	Unknown
14	511.00	1023.25	5	30	24	59	2.62	Deleted

041217D04.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-10 GS040614-2 Code: 041217D04A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 10:23:45
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	9.20E+001 g	Real Time	1803 Sec
Collection Efficiency	1.0000	Spc. File	.041217D04.SPC

Detector #: 4 (Detector 4)

Energy(keV)= -1.08 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004
FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.92	151.70	91	30	19	69	0.76 a	
2	77.00	155.86	132	34	21	83	0.91 b	
3	87.31	176.44	32	24	18	71	0.70 a	
4	92.84	187.47	57	40	30	143	1.25 a	Wide Pk
5	185.88	373.21	58	27	18	58	1.14 a	
6	238.52	478.29	253	37	16	46	1.04 a	
7	241.64	484.53	59	30	22	69	1.49 b	
8	295.10	591.24	113	27	14	34	1.09 a	
9	338.29	677.46	45	24	17	41	1.50 a	
10	351.73	704.28	194	32	13	28	1.19 a	
11	510.81	1021.85	65	24	15	31	2.14 a	Wide Pk
12	583.08	1166.12	64	20	10	18	1.19 a	
13	608.91	1217.69	123	26	11	23	1.47 a	
14	911.00	1820.72	41	16	8	11	1.60 a	
15	968.30	1935.12	22	16	11	22	1.70 a	
16	1119.68	2237.31	29	15	8	12	2.07 a	
17	1459.92	2916.50	158	26	7	8	2.46 a	
18	1763.48	3522.48	24	12	6	5	2.99 a	

041217D04.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET040625.BKG (0418003-34 Weekly Background)

Bkg.File Detector #: 4

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	74.92	91	30	19	87	30	19	
2	77.00	132	34	21	127	35	22	
3	87.31	32	24	18	32	25	18	
4	92.84	57	40	30	47	40	31	
5	185.88	58	27	18	51	27	19	
6	238.52	253	37	16	248	37	17	
9	338.29	45	24	17	43	24	17	
10	351.73	194	32	13	190	32	14	
11	510.81	65	24	15	26	25	19	
12	583.08	64	20	10	62	20	10	
13	608.91	123	26	11	120	26	12	
14	911.00	41	16	8	40	17	9	
17	1459.92	158	26	7	152	27	8	

041217D04.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-10 GS040614-2 Code: 041217D04A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 10:23:45
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	9.20e+001 g	Real Time	1803 Sec
Collection Efficiency	1.0000	Spectrum File	.041217D04.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 4 (Detector 4)

Efficiency File: (D04)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[4.98E-03*En^-3.26E+00 + 6.77E+01*En^8.96E-01] 06/21/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	92.50		2.70E+00 +- 2.30E+00	3.72E+00	1.78E+00	3.92E+13
U-235	143.76	N	2.00E-01 +- 4.00E-01	6.81E-01	3.11E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		1.90E+00 +- 2.87E-01	2.75E-01	1.27E-01	1.67E+04
Pb-214	Average:x		2.22E+00 +- 3.08E-01	. . . .	. . . .	1.40E+07
	295.22		2.21E+00 +- 5.32E-01	6.02E-01	2.75E-01	1.40E+07
	351.99		2.23E+00 +- 3.77E-01	3.53E-01	1.60E-01	1.40E+07
Ra-228	Average:x		1.61E+00 +- 4.90E-01	. . . .	. . . .	5.04E+04
	338.40		1.63E+00 +- 9.26E-01	1.39E+00	6.42E-01	5.04E+04
	911.07		1.62E+00 +- 6.72E-01	8.37E-01	3.64E-01	5.04E+04
	968.90		1.55E+00 +- 1.12E+00	1.70E+00	7.55E-01	5.04E+04
Tl-208	583.14		4.99E-01 +- 1.61E-01	1.87E-01	8.26E-02	1.27E+14
Bi-214	Average:x		1.91E+00 +- 3.83E-01	. . . .	. . . .	1.40E+07
	609.32		1.85E+00 +- 4.05E-01	4.11E-01	1.85E-01	1.40E+07
	1120.28		2.39E+00 +- 1.19E+00	1.55E+00	6.64E-01	1.40E+07
K-40	1460.75		2.14E+01 +- 3.73E+00	2.66E+00	1.14E+00	1.12E+13
Am-241	59.54	N	1.80E-01 +- 4.63E-01	7.96E-01	3.65E-01	3.80E+06
Eu-155	105.31	N	5.07E-01 +- 2.51E-01	3.50E-01	1.57E-01	4.35E+04
Co-57	122.07	N	-1.10E-03 +- 6.50E-02	1.16E-01	5.35E-02	6.48E+03
Ce-144	133.53	N	1.60E-01 +- 4.77E-01	8.24E-01	3.79E-01	6.82E+03
Ce-139	165.85	N	2.73E-03 +- 7.32E-02	1.31E-01	6.00E-02	3.30E+03
Th-227	236.00	N	1.53E-01 +- 7.14E-01	1.21E+00R	5.69E-01	1.90E+05
Cr-51	320.07	N	-4.76E-01 +- 2.27E+00	4.27E+00	1.92E+00	6.65E+02
I-131	364.48	N	-3.13E-01 +- 1.03E+01	1.87E+01	8.52E+00	1.93E+02
Sb-125	427.95	N	-6.72E-02 +- 2.24E-01	4.34E-01	1.93E-01	2.43E+04

041217D04.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g	)	MDA	Critical Level	Halflife (hrs)
Be-7	477.56	N	1.77E+00 +-	1.66E+00	2.60E+00	1.15E+00	1.28E+03
Sb-124	602.71	N	1.46E-01 +-	1.93E-01	3.19E-01B	1.41E-01	1.44E+03
Cs-134	604.66	N	-1.95E-01 +-	1.20E+00	2.00E+00P	9.87E-01	1.81E+04
Ru-106	621.84	N	-8.77E-01 +-	1.06E+00	2.17E+00	9.74E-01	8.84E+03
Ag-110M	657.75	N	-1.72E-01 +-	1.49E-01	3.04E-01	1.39E-01	6.00E+03
Cs-137	661.62	N	1.55E-01 +-	1.50E-01	2.39E-01	1.07E-01	2.64E+05
Nb-94	702.50	N	-1.15E-02 +-	1.08E-01	2.03E-01	9.02E-02	1.78E+08
Bi-212	727.17	N	1.07E+00 +-	1.73E+00	2.93E+00	1.28E+00	1.67E+04
Nb-95	765.82	N	9.46E-02 +-	1.94E-01	3.36E-01	1.47E-01	1.54E+03
Co-58	810.75	N	-6.30E-02 +-	1.84E-01	3.62E-01	1.60E-01	1.70E+03
Mn-54	834.81	N	0.00E+00 +-	1.20E-01	2.26E-01	9.88E-02	7.49E+03
Sc-46	889.26	N	-3.13E-03 +-	1.64E-01	3.14E-01	1.36E-01	2.01E+03
Pa-234m	1001.03	N	3.12E-01 +-	1.86E+01	3.56E+01	1.53E+01	3.92E+13
Eu-154	1004.80	N	-4.68E-01 +-	6.12E-01	1.32E+00	5.77E-01	7.45E+04
Fe-59	1099.22	N	2.97E-01 +-	5.24E-01	8.98E-01	3.82E-01	1.08E+03
Zn-65	1115.52	N	4.55E-01 +-	5.70E-01	9.36E-01P	4.30E-01	5.85E+03
Co-56	1238.28	N	3.13E-01 +-	4.38E-01	7.28E-01	3.20E-01	1.86E+03
Na-22	1274.54	N	-7.50E-02 +-	1.53E-01	3.12E-01	1.37E-01	2.28E+04
Co-60	1332.51	N	7.29E-02 +-	1.31E-01	2.26E-01	9.33E-02	4.62E+04
Eu-152	1408.08	N	-1.20E-01 +-	7.00E-01	1.39E+00	5.96E-01	1.17E+05
Al-26	1808.65	N	1.05E-01 +-	1.13E-01	1.66E-01	5.73E-02	6.31E+09

MEASURED TOTAL: 3.83E+01 +- 3.44E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.92	151.70	87	30	19	69	0.76	Unknown
2	77.00	155.86	127	35	22	83	0.91	Unknown
3	87.31	176.44	32	25	18	71	0.70	Unknown
7	241.64	484.53	59	30	22	69	1.49	Unknown
11	510.81	1021.85	26	25	19	31	2.14	Unknown
18	1763.48	3522.48	24	12	6	5	2.99	Unknown

041056D07.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-11 GS040614-2 Code: 041056D07A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 10:23:57
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.04E+002 g	Real Time	1816 Sec
Collection Efficiency	1.0000	Spc. File	.041056D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.03 + 0.500*Ch + 5.21E-07*Ch^2 +-8.19E-11*Ch^3 07/01/2004
FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG	
1	46.51	97.03	62	27	18	71	0.69	a	
2	63.15	130.30	56	29	21	88	0.79	a	
3	74.79	153.56	162	39	24	119	0.76	a	
4	77.10	158.17	237	40	21	95	0.71	b	
5	83.97	171.91	38	31	23	100	0.93	a	Wide Pk
6	87.23	178.43	83	34	23	100	0.90	b	
7	89.86	183.67	48	28	20	83	0.76	c	
8	92.95	189.86	105	44	32	150	1.49	d	
9	185.93	375.63	89	29	18	57	1.14	a	
10	238.49	480.63	229	36	16	49	0.92	a	
11	241.77	487.18	74	28	18	57	1.17	b	
12	270.32	544.20	17	18	14	38	0.79	a	
13	295.15	593.79	125	27	13	30	1.06	a	
14	338.10	679.57	34	17	10	23	0.69	a	
15	351.86	707.03	213	33	12	27	1.05	a	
16	510.74	1024.22	39	30	23	66	2.47	a	Wide Pk
17	583.17	1168.77	66	19	9	15	1.16	a	
18	609.30	1220.94	158	29	11	23	1.35	a	
19	911.03	1822.93	31	16	9	14	1.83	a	
20	1460.56	2919.22	196	29	6	5	2.07	a	
21	1764.02	3524.92	16	8	3	2	1.17	a	

041056D07.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET070625.BKG (0418003-37 Weekly Background)

Bkg.File Detector #: 7

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.51	62	27	18	47	27	19	
2	63.15	56	29	21	44	30	22	
3	74.79	162	39	24	158	39	25	
4	77.10	237	40	21	234	40	21	
5	83.97	38	31	23	35	31	24	
8	92.95	105	44	32	89	44	33	
9	185.93	89	29	18	81	29	19	
10	238.49	229	36	16	222	36	17	
12	270.32	17	18	14	16	19	14	
14	338.10	34	17	10	32	17	11	
15	351.86	213	33	12	211	33	12	
16	510.74	39	30	23	4	31	25	NET<CL
17	583.17	66	19	9	65	19	9	
18	609.30	158	29	11	156	29	12	
19	911.03	31	16	9	29	16	10	
20	1460.56	196	29	6	193	29	7	

041056D07.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-11 GS040614-2 Code: 041056D07A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 10:23:57
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.04e+002 g	Real Time	1816 Sec
Collection Efficiency	1.0000	Spectrum File	.041056D07.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 7 (Detector 7)

Efficiency File: (D07)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[1.41E-01*En^-1.49E+00 + 9.67E+01*En^9.61E-01] 01/02/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	2.98E+00	+- 1.21E+00	. . . .	. . . .	3.92E+13
	63.29		2.52E+00	+- 1.72E+00	2.68E+00	1.26E+00	3.92E+13
	92.50		3.43E+00	+- 1.70E+00	2.63E+00	1.26E+00	3.92E+13
U-235	143.76	N	-2.21E-01	+- 5.63E-01	1.02E+00	4.78E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	. . . .	6.17E+12
Pb-212	238.63		2.00E+00	+- 3.28E-01	3.33E-01	1.55E-01	1.67E+04
Pb-214	Average:	x	2.94E+00	+- 3.71E-01	. . . .	. . . .	1.40E+07
	295.22		2.90E+00	+- 6.30E-01	6.53E-01	2.95E-01	1.40E+07
	351.99		2.96E+00	+- 4.60E-01	3.89E-01	1.75E-01	1.40E+07
Ra-228	Average:	x	1.46E+00	+- 5.60E-01	. . . .	. . . .	5.04E+04
	338.40		1.46E+00	+- 7.88E-01	1.11E+00	4.95E-01	5.04E+04
	911.07		1.46E+00	+- 7.96E-01	1.10E+00	4.80E-01	5.04E+04
Tl-208	583.14		6.41E-01	+- 1.92E-01	2.06E-01	8.98E-02	1.27E+14
Bi-214	609.32		2.95E+00	+- 5.42E-01	4.92E-01	2.20E-01	1.40E+07
K-40	1460.75		3.52E+01	+- 5.26E+00	2.90E+00	1.20E+00	1.12E+13
Am-241	59.54	N	-8.58E-03	+- 1.63E-01	2.87E-01B	1.35E-01	3.80E+06
Eu-155	105.31	N	5.29E-02	+- 2.27E-01	3.93E-01	1.82E-01	4.35E+04
Co-57	122.07	N	2.50E-02	+- 6.90E-02	1.18E-01	5.49E-02	6.48E+03
Ce-144	133.53	N	2.25E-01	+- 5.47E-01	9.32E-01	4.32E-01	6.82E+03
Ce-139	165.85	N	9.13E-03	+- 9.66E-02	1.70E-01	7.88E-02	3.30E+03
Th-227	236.00	N	-5.98E-02	+- 7.85E-01	1.39E+00R	6.53E-01	1.90E+05
Cr-51	320.07	N	-2.90E+00	+- 3.70E+00	7.07E+00	3.28E+00	6.65E+02
I-131	364.48	N	-3.00E+00	+- 1.13E+01	2.13E+01	9.62E+00	1.93E+02
Sb-125	427.95	N	1.35E-02	+- 3.00E-01	5.49E-01	2.45E-01	2.43E+04
Be-7	477.56	N	-8.05E-01	+- 1.78E+00	3.48E+00	1.56E+00	1.28E+03

041056D07.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Sb-124	602.71	N	-1.65E-02	+- 2.17E-01	4.05E-01	1.80E-01	1.44E+03
Cs-134	604.66	N	8.39E-02	+- 1.22E-01	2.04E-01B	8.94E-02	1.81E+04
Ru-106	621.84	N	-9.04E-01	+- 1.22E+00	2.51E+00	1.12E+00	8.84E+03
Ag-110M	657.75	N	-3.63E-02	+- 1.42E-01	2.75E-01	1.22E-01	6.00E+03
Cs-137	661.62	N	7.77E-02	+- 1.49E-01	2.56E-01	1.13E-01	2.64E+05
Nb-94	702.50	N	-7.51E-02	+- 1.26E-01	2.53E-01	1.13E-01	1.78E+08
Bi-212	727.17	N	3.27E+00	+- 2.19E+00	3.11E+00	1.33E+00	1.67E+04
Nb-95	765.82	N	-1.69E-01	+- 2.53E-01	5.11E-01	2.29E-01	1.54E+03
Co-58	810.75	N	6.10E-02	+- 1.84E-01	3.34E-01	1.40E-01	1.70E+03
Mn-54	834.81	N	-1.01E-01	+- 1.54E-01	3.16E-01	1.40E-01	7.49E+03
Sc-46	889.26	N	-1.97E-02	+- 2.19E-01	4.19E-01	1.83E-01	2.01E+03
Pa-234m	1001.03	N	9.48E+00	+- 2.60E+01	4.62E+01	1.99E+01	3.92E+13
Eu-154	1004.80	N	0.00E+00	+- 7.73E-01	1.49E+00	6.36E-01	7.45E+04
Fe-59	1099.22	N	1.95E-01	+- 6.16E-01	1.12E+00	4.72E-01	1.08E+03
Zn-65	1115.52	N	-4.66E-01	+- 4.13E-01	8.99E-01	4.01E-01	5.85E+03
Co-56	1238.28	N	2.49E-01	+- 5.87E-01	1.02E+00	4.53E-01	1.86E+03
Na-22	1274.54	N	0.00E+00	+- 1.64E-01	3.20E-01	1.35E-01	2.28E+04
Co-60	1332.51	N	9.38E-02	+- 1.45E-01	2.46E-01	9.76E-02	4.62E+04
Eu-152	1408.08	N	1.86E-01	+- 6.97E-01	1.31E+00	5.30E-01	1.17E+05
Al-26	1808.65	N	-1.20E-01	+- 1.38E-01	3.56E-01	1.45E-01	6.31E+09

MEASURED TOTAL: 6.21E+01 +- 4.04E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.51	97.03	47	27	19	71	0.69	Unknown
3	74.79	153.56	158	39	25	119	0.76	Unknown
4	77.10	158.17	234	40	21	95	0.71	Unknown
5	83.97	171.91	35	31	24	100	0.93	Unknown
6	87.23	178.43	83	34	23	100	0.90	Unknown
7	89.86	183.67	48	28	20	83	0.76	Unknown
11	241.77	487.18	74	28	18	57	1.17	Unknown
12	270.32	544.20	16	19	14	38	0.79	Unknown
16	510.74	1024.22	4	31	25	66	2.47	Deleted
21	1764.02	3524.92	16	8	3	2	1.17	Unknown

041132D02.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-11D GS040614-2 Code: 041132D02A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 11:09:01
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.07E+002 g	Real Time	1803 Sec
Collection Efficiency	1.0000	Spc. File	.041132D02.SPC

Detector #: 2 (Detector 2)

Energy(keV)= -0.75 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004
FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.82	151.08	81	35	25	113	0.91	a
2	77.04	155.52	97	30	18	75	0.68	b
3	87.10	175.63	44	24	17	61	0.63	a
4	89.71	180.85	39	24	17	61	0.64	b
5	92.75	186.92	83	35	25	106	1.20	c
6	185.98	373.30	75	32	22	83	1.07	a
7	238.49	478.28	289	40	17	50	1.07	a
8	241.72	484.73	95	29	17	50	1.22	b
9	295.12	591.48	179	32	14	37	0.96	a
10	338.24	677.70	47	25	17	49	1.08	a
11	351.87	704.94	310	40	15	40	1.08	a
12	463.12	927.34	20	13	7	13	0.86	a
13	583.08	1167.15	55	18	9	18	1.04	a
14	609.17	1219.32	226	34	14	33	1.48	a
15	911.21	1823.12	48	18	9	16	1.45	a
16	969.01	1938.68	31	16	10	17	1.68	a
17	1120.40	2241.32	45	21	14	27	2.45	a
18	1460.74	2921.70	290	35	6	5	2.14	a
19	1764.33	3528.61	24	13	7	8	3.04	a

041132D02.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	74.82	81	35	25	77	35	25	
2	77.04	97	30	18	94	30	19	
3	87.10	44	24	17	42	25	17	
4	89.71	39	24	17	38	24	17	
5	92.75	83	35	25	70	36	26	
6	185.98	75	32	22	67	32	23	
7	238.49	289	40	17	282	40	18	
9	295.12	179	32	14	176	32	15	
10	338.24	47	25	17	45	25	17	
11	351.87	310	40	15	306	40	16	
13	583.08	55	18	9	50	19	10	
14	609.17	226	34	14	222	35	15	
15	911.21	48	18	9	46	18	10	
16	969.01	31	16	10	29	16	10	
18	1460.74	290	35	6	284	35	7	
19	1764.33	24	13	7	23	13	8	

041132D02.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-11D GS040614-2 Code: 041132D02A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 11:09:01
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.07e+002 g	Real Time	1803 Sec
Collection Efficiency	1.0000	Spectrum File	.041132D02.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 2 (Detector 2)

Efficiency File: (D02)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[8.73E-04*En^-4.04E+00 + 6.76E+01*En^8.33E-01] 06/01/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	92.50		4.03E+00 +- 2.05E+00	3.14E+00	1.49E+00	3.92E+13
U-235	143.76	N	5.09E-01 +- 4.76E-01	7.64E-01	3.55E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		2.01E+00 +- 2.86E-01	2.76E-01	1.28E-01	1.67E+04
Pb-214	Average:x		3.26E+00 +- 3.47E-01	. . . .	. . . .	1.40E+07
	295.22		3.18E+00 +- 5.84E-01	6.02E-01	2.77E-01	1.40E+07
	351.99		3.30E+00 +- 4.31E-01	3.71E-01	1.71E-01	1.40E+07
Ra-228	Average:x		1.62E+00 +- 4.48E-01	. . . .	. . . .	5.04E+04
	338.40		1.56E+00 +- 8.75E-01	1.31E+00	6.10E-01	5.04E+04
	911.07		1.61E+00 +- 6.21E-01	7.59E-01	3.32E-01	5.04E+04
	968.90		1.73E+00 +- 9.63E-01	1.36E+00	5.97E-01	5.04E+04
Sb-125	Average:x		8.25E-02 +- 2.80E-01	. . . .	. . . .	2.43E+04
	463.51		9.81E-01 +- 6.27E-01	8.71E-01	3.68E-01	2.43E+04
	427.95	N	-1.41E-01 +- 3.13E-01	5.82E-01	2.69E-01	2.43E+04
Tl-208	583.14		3.60E-01 +- 1.35E-01	1.65E-01	7.30E-02	1.27E+14
Bi-214	Average:x		3.04E+00 +- 4.50E-01	. . . .	. . . .	1.40E+07
	609.32		3.03E+00 +- 4.73E-01	4.34E-01	1.98E-01	1.40E+07
	1120.28		3.13E+00 +- 1.47E+00	2.06E+00	9.37E-01	1.40E+07
K-40	1460.75		3.37E+01 +- 4.12E+00	1.98E+00	8.30E-01	1.12E+13
Am-241	59.54	N	3.57E-01 +- 6.34E-01	1.07E+00	4.89E-01	3.80E+06
Eu-155	105.31	N	4.12E-03 +- 2.84E-01	5.00E-01	2.33E-01	4.35E+04
Co-57	122.07	N	5.07E-03 +- 6.60E-02	1.16E-01	5.39E-02	6.48E+03
Ce-144	133.53	N	-1.67E-01 +- 5.12E-01	9.28E-01	4.33E-01	6.82E+03
Ce-139	165.85	N	-4.86E-02 +- 7.53E-02	1.42E-01	6.58E-02	3.30E+03
Th-227	236.00	N	-1.19E-01 +- 6.60E-01	1.18E+00R	5.57E-01	1.90E+05

041132D02.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Cr-51	320.07	N	-2.63E+00	+- 2.41E+00	4.86E+00	2.23E+00	6.65E+02
I-131	364.48	N	1.44E+00	+- 9.68E+00	1.72E+01	7.82E+00	1.93E+02
Be-7	477.56	N	1.12E-01	+- 1.48E+00	2.69E+00	1.21E+00	1.28E+03
Sb-124	602.71	N	1.20E-02	+- 1.84E-01	3.32E-01	1.50E-01	1.44E+03
Cs-134	604.66	N	-4.72E-02	+- 1.04E-01	1.99E-01B	9.01E-02	1.81E+04
Ru-106	621.84	N	0.00E+00	+- 9.39E-01	1.74E+00	7.72E-01	8.84E+03
Ag-110M	657.75	N	-4.16E-02	+- 1.23E-01	2.35E-01	1.06E-01	6.00E+03
Cs-137	661.62	N	5.57E-02	+- 1.22E-01	2.10E-01	9.44E-02	2.64E+05
Nb-94	702.50	N	-7.52E-02	+- 1.07E-01	2.11E-01	9.57E-02	1.78E+08
Bi-212	727.17	N	8.79E-01	+- 1.74E+00	2.98E+00	1.33E+00	1.67E+04
Nb-95	765.82	N	-6.56E-02	+- 1.91E-01	3.67E-01	1.65E-01	1.54E+03
Co-58	810.75	N	-4.13E-02	+- 1.63E-01	3.17E-01	1.40E-01	1.70E+03
Mn-54	834.81	N	-4.16E-02	+- 1.14E-01	2.24E-01	9.95E-02	7.49E+03
Sc-46	889.26	N	-1.09E-01	+- 1.54E-01	3.20E-01	1.41E-01	2.01E+03
Pa-234m	1001.03	N	6.46E+00	+- 1.77E+01	3.15E+01	1.35E+01	3.92E+13
Eu-154	1004.80	N	-5.91E-01	+- 6.71E-01	1.39E+00	6.25E-01	7.45E+04
Fe-59	1099.22	N	2.97E-02	+- 4.70E-01	8.79E-01	3.82E-01	1.08E+03
Zn-65	1115.52	N	1.77E-01	+- 6.75E-01	1.15E+00P	5.45E-01	5.85E+03
Co-56	1238.28	N	4.89E-01	+- 4.07E-01	6.25E-01	2.75E-01	1.86E+03
Na-22	1274.54	N	-7.28E-02	+- 1.50E-01	2.98E-01	1.32E-01	2.28E+04
Co-60	1332.51	N	-2.47E-02	+- 1.05E-01	2.15E-01	9.07E-02	4.62E+04
Eu-152	1408.08	N	6.07E-02	+- 6.31E-01	1.18E+00	5.09E-01	1.17E+05
Al-26	1808.65	N	2.61E-02	+- 8.11E-02	1.58E-01	5.78E-02	6.31E+09

MEASURED TOTAL: 5.87E+01 +- 4.27E+01 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.82	151.08	77	35	25	113	0.91	Unknown
2	77.04	155.52	94	30	19	75	0.68	Unknown
3	87.10	175.63	42	25	17	61	0.63	Unknown
4	89.71	180.85	38	24	17	61	0.64	Unknown
8	241.72	484.73	95	29	17	50	1.22	Unknown
19	1764.33	3528.61	23	13	8	8	3.04	Unknown

041126D03.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-12 GS040614-2 Code: 041126D03A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 11:09:10
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.08E+002 g	Real Time	1803 Sec
Collection Efficiency	1.0000	Spc. File	.041126D03.SPC

Detector #: 3 (Detector 3)

Energy(keV) = -0.82 + 0.500*Ch + 1.08E-07*Ch^2 +-1.09E-11*Ch^3 07/01/2004
FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG	
1	63.32	128.25	43	33	25	122	0.85	a	
2	74.90	151.41	176	52	37	215	1.23	a	
3	77.06	155.73	293	50	30	161	0.92	b	
4	87.33	176.27	94	45	33	202	1.04	a	
5	92.87	187.35	93	42	31	176	1.06	a	
6	186.14	373.82	145	41	28	120	1.31	a	
7	209.30	420.13	45	27	19	76	0.88	a	
8	238.71	478.92	432	50	22	84	1.21	a	
9	241.77	485.05	208	44	27	108	1.41	b	
10	270.37	542.23	47	32	23	96	1.48	a	
11	295.25	591.96	298	42	20	75	1.19	a	
12	338.22	677.87	79	29	19	68	1.35	a	
13	351.87	705.15	481	51	21	74	1.47	a	
14	463.32	927.95	28	18	12	29	0.99	a	
15	510.46	1022.18	98	37	25	68	3.28	a	Wide Pk
16	583.28	1167.73	111	27	14	36	1.60	a	
17	609.25	1219.65	321	40	15	39	1.57	a	
18	727.51	1456.01	18	18	13	32	1.68	a	
19	911.43	1823.58	83	24	12	29	1.76	a	
20	968.78	1938.20	28	18	12	33	1.26	a	
21	1120.11	2240.62	56	22	14	33	2.23	a	
22	1460.89	2921.58	277	35	10	15	2.68	a	
23	1764.71	3528.69	46	14	4	2	2.33	a	

041126D03.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	63.32	43	33	25	37	33	25	
2	74.90	176	52	37	172	52	37	
3	77.06	293	50	30	289	50	30	
5	92.87	93	42	31	78	43	32	
6	186.14	145	41	28	135	41	28	
8	238.71	432	50	22	426	50	23	
11	295.25	298	42	20	294	42	20	
12	338.22	79	29	19	77	30	19	
13	351.87	481	51	21	475	51	21	
15	510.46	98	37	25	49	37	28	
16	583.28	111	27	14	105	27	15	
17	609.25	321	40	15	318	40	15	
19	911.43	83	24	12	81	24	13	
22	1460.89	277	35	10	269	35	11	
23	1764.71	46	14	4	45	14	5	

041126D03.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-12 GS040614-2 Code: 041126D03A

Sampling Start: 05/07/2004 12:00:00	Counting Start: 07/01/2004 11:09:10
Sampling Stop: 05/07/2004 12:00:00	Decay Time. . . . . 1.32e+003 Hrs
Buildup Time. . . . . 0.00e+000 Hrs	Live Time . . . . . 1800 Sec
Sample Size . . . . . 1.08e+002 g	Real Time . . . . . 1803 Sec
Collection Efficiency 1.0000	Spectrum File 041126D03.SPC
Cr. Level Confidence Interval: 95 %	Det. Limit Confidence Interval: 95 %

Detector #: 3 (Detector 3)

Efficiency File: (D03)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[2.98E-03*En^-3.47E+00 + 7.49E+01*En^8.79E-01] 05/26/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	4.37E+00 +- 2.08E+00	. . . .	. . . .	3.92E+13
	63.29		6.51E+00 +- 5.86E+00	9.46E+00	4.49E+00	3.92E+13
	92.50		4.07E+00 +- 2.23E+00	3.48E+00	1.67E+00	3.92E+13
U-235	143.76	N	4.78E-01 +- 6.43E-01	1.06E+00	5.03E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		3.13E+00 +- 3.65E-01	3.55E-01	1.68E-01	1.67E+04
Pb-214	Average:	x	5.40E+00 +- 4.62E-01	. . . .	. . . .	1.40E+07
	295.22		5.50E+00 +- 7.87E-01	8.04E-01	3.77E-01	1.40E+07
	351.99		5.34E+00 +- 5.70E-01	5.09E-01	2.39E-01	1.40E+07
Ra-228	Average:	x	2.66E+00 +- 5.95E-01	. . . .	. . . .	5.04E+04
	338.40		2.81E+00 +- 1.07E+00	1.52E+00	7.10E-01	5.04E+04
	911.07		3.05E+00 +- 8.98E-01	1.07E+00	4.85E-01	5.04E+04
	968.90		1.80E+00 +- 1.18E+00	1.76E+00	7.92E-01	5.04E+04
Sb-125	Average:	x	1.69E-01 +- 3.41E-01	. . . .	. . . .	2.43E+04
	463.51		1.49E+00 +- 9.32E-01	1.38E+00	6.17E-01	2.43E+04
	427.95	N	-3.63E-02 +- 3.67E-01	6.55E-01	3.05E-01	2.43E+04
Tl-208	583.14		8.06E-01 +- 2.09E-01	2.48E-01	1.13E-01	1.27E+14
Bi-214	Average:	x	4.60E+00 +- 5.54E-01	. . . .	. . . .	1.40E+07
	609.32		4.64E+00 +- 5.86E-01	4.82E-01	2.21E-01	1.40E+07
	1120.28		4.27E+00 +- 1.71E+00	2.31E+00	1.05E+00	1.40E+07
Bi-212	727.17		2.30E+00 +- 2.29E+00	3.66E+00	1.66E+00	1.67E+04
K-40	1460.75		3.55E+01 +- 4.66E+00	3.22E+00	1.43E+00	1.12E+13
Am-241	59.54	N	-4.18E-01 +- 7.54E-01	1.34E+00B	6.41E-01	3.80E+06
Eu-155	105.31	N	-7.13E-02 +- 3.65E-01	6.40E-01	3.04E-01	4.35E+04
Co-57	122.07	N	5.15E-02 +- 8.85E-02	1.48E-01	6.98E-02	6.48E+03

041126D03.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g	)	MDA	Critical Level	Halflife (hrs)
Ce-144	133.53	N	-2.29E-01 +-	6.74E-01	1.20E+00	5.67E-01	6.82E+03
Ce-139	165.85	N	-7.73E-03 +-	1.20E-01	2.09E-01	9.91E-02	3.30E+03
Th-227	236.00	N	-8.78E-01 +-	1.14E+00	2.06E+00R	9.96E-01	1.90E+05
Cr-51	320.07	N	1.82E+00 +-	3.36E+00	5.66E+00	2.62E+00	6.65E+02
I-131	364.48	N	-1.20E+00 +-	1.19E+01	2.14E+01	9.89E+00	1.93E+02
Be-7	477.56	N	-1.85E-01 +-	2.19E+00	3.92E+00	1.82E+00	1.28E+03
Sb-124	602.71	N	-6.39E-02 +-	2.12E-01	3.96E-01B	1.81E-01	1.44E+03
Cs-134	604.66	N	1.44E-02 +-	1.22E-01	2.18E-01B	9.92E-02	1.81E+04
Ru-106	621.84	N	-9.30E-01 +-	1.22E+00	2.40E+00	1.10E+00	8.84E+03
Ag-110M	657.75	N	-9.82E-02 +-	1.55E-01	2.96E-01	1.36E-01	6.00E+03
Cs-137	661.62	N	-1.02E-01 +-	1.53E-01	2.92E-01	1.35E-01	2.64E+05
Nb-94	702.50	N	-4.60E-02 +-	1.43E-01	2.64E-01	1.22E-01	1.78E+08
Nb-95	765.82	N	2.84E-02 +-	3.27E-01	5.73E-01	2.67E-01	1.54E+03
Co-58	810.75	N	-1.52E-01 +-	2.51E-01	4.81E-01	2.20E-01	1.70E+03
Mn-54	834.81	N	-6.02E-02 +-	1.78E-01	3.30E-01	1.52E-01	7.49E+03
Sc-46	889.26	N	-8.87E-02 +-	2.33E-01	4.41E-01	2.01E-01	2.01E+03
Pa-234m	1001.03	N	4.76E+00 +-	2.37E+01	4.26E+01	1.89E+01	3.92E+13
Eu-154	1004.80	N	-3.72E-01 +-	8.86E-01	1.70E+00	7.68E-01	7.45E+04
Fe-59	1099.22	N	4.66E-01 +-	7.46E-01	1.25E+00	5.64E-01	1.08E+03
Zn-65	1115.52	N	2.22E-02 +-	8.72E-01	1.50E+00P	7.16E-01	5.85E+03
Co-56	1238.28	N	1.21E+00 +-	6.17E-01	8.78E-01	3.98E-01	1.86E+03
Na-22	1274.54	N	-3.02E-02 +-	2.02E-01	3.76E-01	1.70E-01	2.28E+04
Co-60	1332.51	N	-1.06E-01 +-	1.85E-01	3.66E-01	1.64E-01	4.62E+04
Eu-152	1408.08	N	1.28E+00 +-	8.70E-01	1.24E+00	5.27E-01	1.17E+05
Al-26	1808.65	N	-1.76E-02 +-	1.32E-01	2.71E-01	1.12E-01	6.31E+09

MEASURED TOTAL: 6.91E+01 +- 4.29E+01 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
2	74.90	151.41	172	52	37	215	1.23	Unknown
3	77.06	155.73	289	50	30	161	0.92	Unknown
4	87.33	176.27	94	45	33	202	1.04	Unknown
7	209.30	420.13	45	27	19	76	0.88	Unknown
9	241.77	485.05	208	44	27	108	1.41	Unknown
10	270.37	542.23	47	32	23	96	1.48	Unknown
15	510.46	1022.18	49	37	28	68	3.28	Unknown
23	1764.71	3528.69	45	14	5	2	2.33	Unknown

041218D04.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-13 GS040614-2 Code: 041218D04A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 11:09:18
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	9.98E+001 g	Real Time	1803 Sec
Collection Efficiency	1.0000	Spc. File	.041218D04.SPC

Detector #: 4 (Detector 4)

Energy(keV)= -1.08 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004
FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.75	151.36	106	33	21	98	0.65 a	
2	77.03	155.92	184	40	25	123	0.74 b	
3	87.35	176.53	56	23	14	52	0.41 a	
4	89.90	181.61	48	32	24	103	1.01 b	
5	92.77	187.34	105	38	27	120	1.14 c	
6	129.28	260.23	17	21	16	54	0.65 a	
7	186.01	373.48	82	31	21	82	0.93 a	
8	208.87	419.11	25	25	19	66	1.04 a	
9	238.53	478.32	329	42	18	59	1.00 a	
10	241.64	484.53	103	34	22	79	1.31 b	
11	270.42	541.97	34	33	25	90	1.68 a	Wide Pk
12	295.17	591.39	176	32	15	41	0.98 a	
13	300.19	601.40	34	23	17	48	1.12 b	
14	338.32	677.53	44	23	15	40	1.17 a	
15	351.74	704.31	253	38	17	45	1.25 a	
16	510.64	1021.51	56	24	16	39	1.76 a	
17	582.82	1165.61	114	25	11	21	1.58 a	
18	609.01	1217.88	201	34	15	42	1.54 a	
19	910.81	1820.35	69	21	11	21	1.84 a	
20	968.04	1934.59	28	17	11	23	1.39 a	
21	1119.91	2237.77	46	18	10	16	2.15 a	
22	1460.14	2916.94	204	30	8	10	2.46 a	
23	1764.23	3523.97	32	14	7	7	3.61 a	

041218D04.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET040625.BKG (0418003-34 Weekly Background)

Bkg.File Detector #: 4

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	74.75	106	33	21	102	33	22	
2	77.03	184	40	25	179	41	25	
3	87.35	56	23	14	56	23	15	
4	89.90	48	32	24	48	32	24	
5	92.77	105	38	27	94	38	27	
7	186.01	82	31	21	75	32	22	
9	238.53	329	42	18	324	42	19	
14	338.32	44	23	15	43	23	16	
15	351.74	253	38	17	249	38	18	
16	510.64	56	24	16	17	25	20	NET<CL
17	582.82	114	25	11	112	26	12	
18	609.01	201	34	15	198	34	16	
19	910.81	69	21	11	69	22	12	
22	1460.14	204	30	8	198	30	9	

041218D04.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-13 GS040614-2 Code: 041218D04A

Sampling Start: 05/07/2004 12:00:00	Counting Start: 07/01/2004 11:09:18
Sampling Stop: 05/07/2004 12:00:00	Decay Time. . . . . 1.32e+003 Hrs
Buildup Time. . . . . 0.00e+000 Hrs	Live Time . . . . . 1800 Sec
Sample Size . . . . . 9.98e+001 g	Real Time . . . . . 1803 Sec
Collection Efficiency 1.0000	Spectrum File 041218D04.SPC
Cr. Level Confidence Interval: 95 %	Det. Limit Confidence Interval: 95 %

Detector #: 4 (Detector 4)

Efficiency File: (D04)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[4.98E-03*En^-3.26E+00 + 6.77E+01*En^8.96E-01] 06/21/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	92.50		5.04E+00 +- 2.05E+00	3.06E+00	1.46E+00	3.92E+13
U-235	143.76	N	4.26E-01 +- 4.79E-01	7.82E-01	3.64E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	Average:x		2.31E+00 +- 2.98E-01	. . . .	. . . .	1.67E+04
	238.63		2.29E+00 +- 3.00E-01	2.81E-01	1.31E-01	1.67E+04
	300.09		3.86E+00 +- 2.65E+00	4.10E+00	1.89E+00	1.67E+04
Pb-214	Average:x		2.86E+00 +- 3.36E-01	. . . .	. . . .	1.40E+07
	295.22		3.16E+00 +- 5.77E-01	5.85E-01	2.68E-01	1.40E+07
	351.99		2.70E+00 +- 4.13E-01	4.10E-01	1.90E-01	1.40E+07
Ra-228	Average:x		1.97E+00 +- 5.07E-01	. . . .	. . . .	5.04E+04
	338.40		1.50E+00 +- 8.08E-01	1.19E+00	5.47E-01	5.04E+04
	911.07		2.56E+00 +- 8.14E-01	9.80E-01	4.40E-01	5.04E+04
	968.90		1.78E+00 +- 1.08E+00	1.57E+00	7.00E-01	5.04E+04
Tl-208	583.14		8.31E-01 +- 1.90E-01	1.97E-01	8.83E-02	1.27E+14
Bi-214	Average:x		2.89E+00 +- 4.55E-01	. . . .	. . . .	1.40E+07
	609.32		2.81E+00 +- 4.84E-01	4.91E-01	2.26E-01	1.40E+07
	1120.28		3.43E+00 +- 1.33E+00	1.63E+00	7.14E-01	1.40E+07
K-40	1460.75		2.57E+01 +- 3.91E+00	2.68E+00	1.17E+00	1.12E+13
Am-241	59.54	N	1.44E-01 +- 4.70E-01	8.12E-01	3.75E-01	3.80E+06
Eu-155	105.31	N	2.11E-01 +- 3.04E-01	5.05E-01	2.36E-01	4.35E+04
Co-57	122.07	N	1.31E-02 +- 7.07E-02	1.23E-01	5.72E-02	6.48E+03
Ce-144	133.53	N	1.89E-01 +- 4.82E-01	8.24E-01	3.81E-01	6.82E+03
Ce-139	165.85	N	-3.65E-02 +- 8.93E-02	1.62E-01	7.59E-02	3.30E+03
Th-227	236.00	N	-5.05E+00 +- 1.76E+01	2.91E+01P	1.45E+01	1.90E+05
Cr-51	320.07	N	0.00E+00 +- 2.45E+00	4.43E+00	2.02E+00	6.65E+02

041218D04.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
I-131	364.48	N	-3.86E-01 +- 9.70E+00	1.76E+01	8.02E+00	1.93E+02
Sb-125	427.95	N	2.06E-02 +- 2.19E-01	4.00E-01	1.77E-01	2.43E+04
Be-7	477.56	N	4.08E-01 +- 1.50E+00	2.65E+00	1.19E+00	1.28E+03
Sb-124	602.71	N	-3.26E-02 +- 2.03E-01	3.73E-01B	1.70E-01	1.44E+03
Cs-134	604.66	N	-1.80E-01 +- 1.34E+00	2.23E+00P	1.11E+00	1.81E+04
Ru-106	621.84	N	-1.98E-01 +- 1.04E+00	1.96E+00	8.77E-01	8.84E+03
Ag-110M	657.75	N	2.17E-02 +- 1.23E-01	2.21E-01	9.86E-02	6.00E+03
Cs-137	661.62	N	7.67E-02 +- 1.30E-01	2.20E-01	9.89E-02	2.64E+05
Nb-94	702.50	N	-5.91E-02 +- 1.04E-01	2.05E-01	9.23E-02	1.78E+08
Bi-212	727.17	N	2.53E+00 +- 1.98E+00	3.03E+00	1.35E+00	1.67E+04
Nb-95	765.82	N	8.72E-02 +- 2.21E-01	3.84E-01	1.72E-01	1.54E+03
Co-58	810.75	N	-5.81E-02 +- 1.79E-01	3.49E-01	1.55E-01	1.70E+03
Mn-54	834.81	N	-2.94E-02 +- 1.34E-01	2.54E-01	1.14E-01	7.49E+03
Sc-46	889.26	N	7.80E-02 +- 1.88E-01	3.28E-01	1.44E-01	2.01E+03
Pa-234m	1001.03	N	8.06E+00 +- 2.18E+01	3.84E+01	1.68E+01	3.92E+13
Eu-154	1004.80	N	-6.71E-02 +- 7.04E-01	1.33E+00	5.88E-01	7.45E+04
Fe-59	1099.22	N	2.74E-01 +- 5.32E-01	9.18E-01	3.97E-01	1.08E+03
Zn-65	1115.52	N	4.75E-01 +- 6.48E-01	1.07E+00P	5.00E-01	5.85E+03
Co-56	1238.28	N	5.10E-01 +- 4.96E-01	7.88E-01	3.54E-01	1.86E+03
Na-22	1274.54	N	-5.49E-02 +- 1.38E-01	2.79E-01	1.22E-01	2.28E+04
Co-60	1332.51	N	-3.81E-02 +- 1.34E-01	2.69E-01	1.17E-01	4.62E+04
Eu-152	1408.08	N	-1.11E-01 +- 6.45E-01	1.28E+00	5.49E-01	1.17E+05
Al-26	1808.65	N	-2.89E-02 +- 1.20E-01	2.58E-01	1.06E-01	6.31E+09

MEASURED TOTAL: 5.51E+01 +- 3.74E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	74.75	151.36	102	33	22	98	0.65	Unknown
2	77.03	155.92	179	41	25	123	0.74	Unknown
3	87.35	176.53	56	23	15	52	0.41	Unknown
4	89.90	181.61	48	32	24	103	1.01	Unknown
6	129.28	260.23	17	21	16	54	0.65	Unknown
8	208.87	419.11	25	25	19	66	1.04	Unknown
10	241.64	484.53	103	34	22	79	1.31	Unknown
11	270.42	541.97	34	33	25	90	1.68	Unknown
16	510.64	1021.51	17	25	20	39	1.76	Deleted
23	1764.23	3523.97	32	14	8	7	3.61	Unknown

041058D07.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-14 GS040614-2 Code: 041058D07A

Sampling Start:	05/03/2004 12:00:00	Counting Start:	07/01/2004 11:09:27
Sampling Stop:	05/03/2004 12:00:00	Decay Time.	1.42E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	14400 Sec
Sample Size	9.13E+001 g	Real Time	14486 Sec
Collection Efficiency	1.0000	Spc. File	.041058D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.03 + 0.500*Ch + 5.21E-07*Ch^2 +-8.19E-11*Ch^3 07/01/2004
FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.48	96.98	256	56	38	290	0.80 a	
2	63.25	130.49	161	54	39	309	0.77 a	
3	66.58	137.15	42	36	27	186	0.56 b	
4	74.87	153.72	327	61	41	331	0.85 a	
5	77.08	158.15	494	66	41	331	0.83 b	
6	84.19	172.34	74	42	32	225	0.61 a	
7	87.13	178.22	176	58	43	337	0.97 b	
8	89.83	183.63	76	61	48	393	1.14 c	
9	92.75	189.45	221	60	43	337	0.94 d	
10	99.30	202.55	29	53	43	310	1.15 a	NET< CL
11	185.79	375.36	178	48	32	195	0.99 a	
12	209.27	422.27	41	28	21	107	0.50 a	
13	238.53	480.71	538	60	32	187	1.03 a	
14	241.49	486.63	94	56	44	281	1.54 b	
15	270.13	543.83	62	53	42	242	1.59 a	
16	295.09	593.67	186	47	32	173	1.11 a	
17	317.25	637.93	15	30	24	112	0.84 a	NET< CL
18	328.08	659.56	22	27	21	95	0.59 a	
19	338.20	679.76	144	45	31	153	1.25 a	
20	351.86	707.05	283	48	28	134	1.18 a	
21	381.68	766.58	15	27	21	90	0.75 a	NET< CL
22	510.88	1024.50	389	62	39	190	2.58 a	Wide Pk
23	558.42	1119.38	56	26	17	65	1.03 a	
24	583.23	1168.91	110	32	20	87	0.93 a	

041058D07.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	609.30	1220.92	173	40	24	110	1.24	a
26	661.66	1325.41	138	33	19	71	1.16	a
27	727.26	1456.30	28	24	18	63	1.17	a
28	911.14	1823.14	97	27	15	47	1.26	a
29	969.09	1938.76	49	25	18	63	1.38	a
30	1120.31	2240.41	42	22	15	43	1.28	a
31	1460.54	2919.18	612	53	16	47	1.97	a
32	1763.64	3524.15	35	16	9	14	2.17	a

041058D07.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET070625.BKG (0418003-37 Weekly Background)

Bkg.File Detector #: 7

BACKGROUND SUBTRACT RESULTS

PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.48	256	56	38	134	68	53	
2	63.25	161	54	39	65	67	53	
3	66.58	42	36	27	3	51	42	NET<CL
4	74.87	327	61	41	301	68	48	
5	77.08	494	66	41	472	73	48	
6	84.19	74	42	32	53	57	45	
9	92.75	221	60	43	93	71	56	
11	185.79	178	48	32	115	57	44	
13	238.53	538	60	32	481	67	42	
15	270.13	62	53	42	59	56	44	
19	338.20	144	45	31	132	54	40	
20	351.86	283	48	28	268	52	33	
22	510.88	389	62	39	116	83	66	
23	558.42	56	26	17	25	35	27	NET<CL
24	583.23	110	32	20	99	37	26	
25	609.30	173	40	24	154	45	31	
28	911.14	97	27	15	82	33	23	
29	969.09	49	26	18	40	31	23	
31	1460.54	612	53	16	582	56	23	

041058D07.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-14 GS040614-2 Code: 041058D07A

Sampling Start: 05/03/2004 12:00:00	Counting Start: 07/01/2004 11:09:27
Sampling Stop: 05/03/2004 12:00:00	Decay Time. . . . . 1.42e+003 Hrs
Buildup Time. . . . . 0.00e+000 Hrs	Live Time . . . . . 14400 Sec
Sample Size . . . . . 9.13e+001 g	Real Time . . . . . 14486 Sec
Collection Efficiency 1.0000	Spectrum File 041058D07.SPC
Cr. Level Confidence Interval: 95 %	Det. Limit Confidence Interval: 95 %

Detector #: 7 (Detector 7)

Efficiency File: (D07)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[1.41E-01*En^-1.49E+00 + 9.67E+01*En^9.61E-01] 01/02/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	5.21E-01 +- 3.17E-01	. . . .	. . . .	3.92E+13
	63.29		5.37E-01 +- 5.48E-01	8.97E-01	4.37E-01	3.92E+13
	92.50		5.13E-01 +- 3.90E-01	6.32E-01	3.08E-01	3.92E+13
U-235	143.76	N	-3.48E-02 +- 2.08E-01	3.54E-01	1.72E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		6.21E-01 +- 8.68E-02	1.12E-01	5.41E-02	1.67E+04
Pb-214	Average:	x	5.61E-01 +- 8.67E-02	. . . .	. . . .	1.40E+07
	295.22		6.14E-01 +- 1.56E-01	2.19E-01	1.05E-01	1.40E+07
	351.99		5.37E-01 +- 1.04E-01	1.39E-01	6.67E-02	1.40E+07
Ra-228	Average:	x	6.38E-01 +- 1.75E-01	. . . .	. . . .	5.04E+04
	338.40		8.59E-01 +- 3.50E-01	5.39E-01	2.61E-01	5.04E+04
	911.07		5.89E-01 +- 2.38E-01	3.48E-01	1.64E-01	5.04E+04
	968.90		4.98E-01 +- 3.84E-01	6.11E-01	2.88E-01	5.04E+04
Tl-208	583.14		1.40E-01 +- 5.21E-02	7.62E-02	3.62E-02	1.27E+14
Bi-214	Average:	x	4.39E-01 +- 1.14E-01	. . . .	. . . .	1.40E+07
	609.32		4.15E-01 +- 1.21E-01	1.74E-01	8.35E-02	1.40E+07
	1120.28		6.11E-01 +- 3.20E-01	4.67E-01	2.13E-01	1.40E+07
Cs-137	661.62		2.19E-01 +- 5.21E-02	6.43E-02	3.00E-02	2.64E+05
Bi-212	727.17		6.52E-01 +- 5.70E-01	9.11E-01	4.23E-01	1.67E+04
K-40	1460.75		1.51E+01 +- 1.45E+00	1.25E+00	5.91E-01	1.12E+13
Am-241	59.54	N	-2.29E-02 +- 4.17E-02	7.26E-02B	3.51E-02	3.80E+06
Eu-155	105.31	N	4.28E-02 +- 6.23E-02	1.03E-01	4.95E-02	4.35E+04
Co-57	122.07	N	-9.00E-04 +- 1.93E-02	3.30E-02	1.59E-02	6.48E+03
Ce-144	133.53	N	-4.69E-02 +- 1.54E-01	2.67E-01	1.29E-01	6.82E+03
Ce-139	165.85	N	-4.65E-03 +- 2.73E-02	4.71E-02	2.27E-02	3.30E+03

041058D07.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-227	236.00	N	-9.38E-02 +- 2.30E-01	4.00E-01R	1.94E-01	1.90E+05
Cr-51	320.07	N	-1.29E+00 +- 1.08E+00	1.97E+00	9.44E-01	6.65E+02
I-131	364.48	N	-2.44E+00 +- 5.69E+00	9.98E+00	4.78E+00	1.93E+02
Sb-125	427.95	N	-3.21E-02 +- 8.62E-02	1.54E-01	7.28E-02	2.43E+04
Be-7	477.56	N	4.64E-01 +- 6.24E-01	1.03E+00	4.88E-01	1.28E+03
Sb-124	602.71	N	1.97E-02 +- 7.74E-02	1.32E-01	6.26E-02	1.44E+03
Cs-134	604.66	N	0.00E+00 +- 4.18E-02	7.24E-02B	3.44E-02	1.81E+04
Ru-106	621.84	N	-1.44E-02 +- 3.86E-01	6.76E-01	3.18E-01	8.84E+03
Ag-110M	657.75	N	1.90E-02 +- 4.44E-02	7.52E-02B	3.53E-02	6.00E+03
Nb-94	702.50	N	5.06E-02 +- 4.39E-02	7.04E-02	3.32E-02	1.78E+08
Nb-95	765.82	N	-2.30E-02 +- 7.87E-02	1.40E-01	6.61E-02	1.54E+03
Co-58	810.75	N	-1.08E-02 +- 6.43E-02	1.15E-01	5.37E-02	1.70E+03
Mn-54	834.81	N	2.92E-02 +- 4.52E-02	7.54E-02	3.51E-02	7.49E+03
Sc-46	889.26	N	2.61E-02 +- 6.33E-02	1.08E-01	5.00E-02	2.01E+03
Pa-234m	1001.03	N	5.41E+00 +- 7.28E+00	1.20E+01	5.56E+00	3.92E+13
Eu-154	1004.80	N	-5.63E-02 +- 2.52E-01	4.53E-01	2.11E-01	7.45E+04
Fe-59	1099.22	N	9.85E-02 +- 2.08E-01	3.54E-01	1.64E-01	1.08E+03
Zn-65	1115.52	N	3.67E-02 +- 1.13E-01	1.95E-01B	9.05E-02	5.85E+03
Co-56	1238.28	N	7.37E-02 +- 1.49E-01	2.52E-01	1.18E-01	1.86E+03
Na-22	1274.54	N	-1.31E-02 +- 4.90E-02	8.99E-02	4.14E-02	2.28E+04
Co-60	1332.51	N	-2.14E-02 +- 4.67E-02	8.80E-02	4.04E-02	4.62E+04
Eu-152	1408.08	N	1.19E-01 +- 2.33E-01	3.96E-01	1.80E-01	1.17E+05
Al-26	1808.65	N	-1.17E-03 +- 4.17E-02	7.85E-02	3.45E-02	6.31E+09

MEASURED TOTAL: 2.53E+01 +- 1.18E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.48	96.98	134	68	53	290	0.80	Unknown
3	66.58	137.15	3	51	42	186	0.56	Deleted
4	74.87	153.72	301	68	48	331	0.85	Unknown
5	77.08	158.15	472	73	48	331	0.83	Unknown
6	84.19	172.34	53	57	45	225	0.61	Unknown
7	87.13	178.22	176	58	43	337	0.97	Unknown
8	89.83	183.63	76	61	48	393	1.14	Unknown
10	99.30	202.55	29	53	43	310	1.15	Deleted
12	209.27	422.27	41	28	21	107	0.50	Unknown
14	241.49	486.63	94	56	44	281	1.54	Unknown
15	270.13	543.83	59	56	44	242	1.59	Unknown
17	317.25	637.93	15	30	24	112	0.84	Deleted
18	328.08	659.56	22	27	21	95	0.59	Unknown
21	381.68	766.58	15	27	21	90	0.75	Deleted
22	510.88	1024.50	116	83	66	190	2.58	Unknown
23	558.42	1119.38	25	35	27	65	1.03	Deleted
32	1763.64	3524.15	35	16	9	14	2.17	Unknown

041135D02.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-15 GS040614-2 Code: 041135D02A

Sampling Start:	05/03/2004 12:00:00	Counting Start:	07/01/2004 12:56:01
Sampling Stop:	05/03/2004 12:00:00	Decay Time.	1.42E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	8.18E+001 g	Real Time	3675 Sec
Collection Efficiency	1.0000	Spc. File	.041135D02.SPC

Detector #: 2 (Detector 2)

Energy(keV)= -0.75 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004
FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	62.79	127.03	4	20	16	55	0.71	a	NET< CL
2	74.69	150.83	24	23	17	63	0.64	a	
3	76.98	155.40	68	26	17	63	0.72	b	
4	92.56	186.55	30	17	10	29	0.39	a	
5	185.91	373.17	61	40	30	114	2.00	a	Wide Pk
6	238.65	478.59	128	32	18	62	1.04	a	
7	295.15	591.56	54	21	12	30	0.81	a	
8	338.39	678.00	37	21	14	35	0.91	a	
9	351.85	704.91	96	26	14	38	0.91	a	
10	511.02	1023.10	84	28	17	44	2.00	a	Wide Pk
11	569.89	1140.79	18	11	6	9	0.79	a	
12	583.11	1167.21	59	19	9	15	1.08	a	
13	609.28	1219.53	73	25	15	38	1.44	a	
14	661.47	1323.87	39	19	11	21	1.56	a	
15	911.12	1822.95	31	15	8	13	1.62	a	
16	1460.69	2921.60	165	27	7	8	2.09	a	

041135D02.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	62.79	4	20	16	-7	21	18	NET<CL
2	74.69	24	23	17	15	24	19	NET<CL
3	76.98	68	26	17	61	28	19	
4	92.56	30	17	10	5	19	15	NET<CL
5	185.91	61	40	30	46	41	32	
6	238.65	128	32	18	114	33	20	
7	295.15	54	21	12	48	24	17	
8	338.39	37	21	14	33	22	16	
9	351.85	96	26	14	87	27	16	
10	511.02	84	28	17	2	31	25	NET<CL
11	569.89	18	11	6	14	13	9	
12	583.11	59	19	9	50	19	11	
13	609.28	73	25	15	64	26	17	
15	911.12	31	15	8	27	16	10	
16	1460.69	165	27	7	153	27	9	

041135D02.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-15 GS040614-2 Code: 041135D02A

Sampling Start: 05/03/2004 12:00:00	Counting Start: 07/01/2004 12:56:01
Sampling Stop: 05/03/2004 12:00:00	Decay Time. . . . . 1.42e+003 Hrs
Buildup Time. . . . . 0.00e+000 Hrs	Live Time . . . . . 3600 Sec
Sample Size . . . . . 8.18e+001 g	Real Time . . . . . 3675 Sec
Collection Efficiency 1.0000	Spectrum File 041135D02.SPC
Cr. Level Confidence Interval: 95 %	Det. Limit Confidence Interval: 95 %

Detector #: 2 (Detector 2)

Efficiency File: (D02)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[8.73E-04*En^-4.04E+00 + 6.76E+01*En^8.33E-01] 06/01/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	92.50	N	1.92E-01 +- 7.22E-01	1.26E+00	5.79E-01	3.92E+13
U-235	143.76	N	-1.52E-01 +- 2.73E-01	5.08E-01	2.36E-01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		5.32E-01 +- 1.52E-01	2.02E-01	9.49E-02	1.67E+04
Pb-214	Average:x		5.98E-01 +- 1.58E-01	. . . .	. . . .	1.40E+07
	295.22		5.68E-01 +- 2.87E-01	4.21E-01	1.95E-01	1.40E+07
	351.99		6.12E-01 +- 1.90E-01	2.46E-01	1.13E-01	1.40E+07
Ra-228	Average:x		6.63E-01 +- 2.90E-01	. . . .	. . . .	5.04E+04
	338.40		7.58E-01 +- 5.08E-01	7.78E-01	3.58E-01	5.04E+04
	911.07		6.17E-01 +- 3.53E-01	4.99E-01	2.19E-01	5.04E+04
Cs-134	Average:x		4.54E-02 +- 6.96E-02	. . . .	. . . .	1.81E+04
	569.29		3.81E-01 +- 3.42E-01	5.29E-01	2.29E-01	1.81E+04
	604.66	N	3.09E-02 +- 7.11E-02	1.22E-01B	5.53E-02	1.81E+04
Tl-208	583.14		2.34E-01 +- 9.12E-02	1.17E-01	5.20E-02	1.27E+14
Bi-214	609.32		5.73E-01 +- 2.33E-01	3.27E-01	1.51E-01	1.40E+07
Cs-137	661.62		2.03E-01 +- 9.65E-02	1.32E-01	5.89E-02	2.64E+05
K-40	1460.75		1.18E+01 +- 2.10E+00	1.64E+00	7.16E-01	1.12E+13
Am-241	59.54	N	-1.89E-01 +- 3.71E-01	7.05E-01	3.23E-01	3.80E+06
Eu-155	105.31	N	-4.17E-02 +- 1.64E-01	2.98E-01	1.38E-01	4.35E+04
Co-57	122.07	N	1.13E-02 +- 3.69E-02	6.41E-02	2.94E-02	6.48E+03
Ce-144	133.53	N	-2.07E-01 +- 2.66E-01	5.15E-01	2.37E-01	6.82E+03
Ce-139	165.85	N	-1.43E-02 +- 4.50E-02	8.35E-02	3.83E-02	3.30E+03
Th-227	236.00	N	1.85E-01 +- 2.87E-01	4.79E-01B	2.19E-01	1.90E+05
Cr-51	320.07	N	6.33E-01 +- 2.03E+00	3.51E+00	1.61E+00	6.65E+02
I-131	364.48	N	4.44E+00 +- 9.48E+00	1.62E+01	7.38E+00	1.93E+02

041135D02.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Sb-125	427.95	N	-3.54E-02 +- 1.68E-01	3.12E-01	1.42E-01	2.43E+04
Be-7	477.56	N	2.06E-01 +- 1.02E+00	1.82E+00	8.17E-01	1.28E+03
Sb-124	602.71	N	2.45E-02 +- 1.32E-01	2.34E-01	1.06E-01	1.44E+03
Ru-106	621.84	N	-9.51E-01 +- 6.31E-01	1.38E+00	6.26E-01	8.84E+03
Ag-110M	657.75	N	4.39E-02 +- 9.30E-02	1.50E-01R	6.75E-02	6.00E+03
Nb-94	702.50	N	-6.08E-02 +- 7.39E-02	1.46E-01	6.68E-02	1.78E+08
Bi-212	727.17	N	-1.92E-02 +- 1.00E+00	1.86E+00	8.27E-01	1.67E+04
Nb-95	765.82	N	-1.53E-02 +- 1.31E-01	2.45E-01	1.10E-01	1.54E+03
Co-58	810.75	N	-6.65E-02 +- 1.08E-01	2.21E-01	9.79E-02	1.70E+03
Mn-54	834.81	N	1.28E-02 +- 7.50E-02	1.36E-01	6.00E-02	7.49E+03
Sc-46	889.26	N	2.75E-02 +- 9.87E-02	1.79E-01	7.69E-02	2.01E+03
Pa-234m	1001.03	N	0.00E+00 +- 1.11E+01	2.11E+01	9.14E+00	3.92E+13
Eu-154	1004.80	N	2.10E-01 +- 3.57E-01	6.10E-01	2.58E-01	7.45E+04
Fe-59	1099.22	N	-2.94E-02 +- 2.77E-01	5.45E-01	2.33E-01	1.08E+03
Zn-65	1115.52	N	-6.35E-03 +- 1.79E-01	3.40E-01	1.49E-01	5.85E+03
Co-56	1238.28	N	8.68E-02 +- 2.35E-01	4.13E-01	1.81E-01	1.86E+03
Na-22	1274.54	N	-3.96E-02 +- 7.93E-02	1.64E-01	7.14E-02	2.28E+04
Co-60	1332.51	N	5.63E-02 +- 7.72E-02	1.28E-01	5.29E-02	4.62E+04
Eu-152	1408.08	N	1.19E-01 +- 2.86E-01	5.19E-01	2.06E-01	1.17E+05
Al-26	1808.65	N	3.39E-02 +- 7.47E-02	1.34E-01	5.33E-02	6.31E+09

MEASURED TOTAL: 2.10E+01 +- 1.82E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	62.79	127.03	-7	21	18	55	0.71	Deleted
2	74.69	150.83	15	24	19	63	0.64	Deleted
3	76.98	155.40	61	28	19	63	0.72	Unknown
10	511.02	1023.10	2	31	25	44	2.00	Deleted

041130D03.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-16 GS040614-2 Code: 041130D03A

Sampling Start:	05/03/2004 12:00:00	Counting Start:	07/01/2004 12:56:13
Sampling Stop:	05/03/2004 12:00:00	Decay Time.	1.42E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	7200 Sec
Sample Size	9.46E+001 g	Real Time	7283 Sec
Collection Efficiency	1.0000	Spc. File	.041130D03.SPC

Detector #: 3 (Detector 3)

Energy(keV)= -0.82 + 0.500*Ch + 1.08E-07*Ch^2 +-1.09E-11*Ch^3 07/01/2004

FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	46.88	95.38	33	42	33	200	0.99	a	NET< CL
2	74.91	151.43	98	44	32	194	1.04	a	
3	77.10	155.81	161	47	32	194	1.01	b	
4	87.20	176.00	41	41	32	187	0.90	a	
5	89.90	181.41	36	27	19	94	0.49	b	
6	92.74	187.08	102	52	40	249	1.34	c	
7	105.28	212.17	35	26	19	83	0.70	a	
8	145.34	292.25	17	22	17	70	0.52	a	
9	185.87	373.30	97	40	28	137	1.09	a	
10	238.63	478.77	274	51	32	175	1.18	a	
11	270.27	542.03	34	30	23	103	1.06	a	
12	295.32	592.10	76	29	19	86	0.86	a	
13	338.40	678.24	76	37	27	114	1.87	a	
14	351.93	705.28	165	36	21	89	1.21	a	
15	510.94	1023.14	196	45	29	122	2.38	a	Wide Pk
16	583.47	1168.11	95	29	17	59	1.50	a	
17	609.41	1219.96	122	35	23	91	1.72	a	
18	661.86	1324.79	151	33	19	62	1.78	a	
19	911.39	1823.49	75	27	17	53	1.93	a	
20	1460.90	2921.60	453	45	12	23	2.58	a	

041130D03.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET030625.BKG (0418003-33 Weekly Background)

Bkg.File Detector #: 3

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.88	33	42	33	20	47	38	NET<CL
2	74.91	98	44	32	82	48	36	
3	77.10	161	47	32	147	50	36	
6	92.74	102	52	40	39	56	45	NET<CL
8	145.34	17	22	17	11	28	23	NET<CL
9	185.87	97	40	28	58	44	34	
10	238.63	274	51	32	249	54	36	
12	295.32	76	29	19	62	35	26	
13	338.40	76	37	27	69	39	29	
14	351.93	165	36	21	143	40	26	
15	510.94	196	45	29	1	53	44	NET<CL
16	583.47	95	29	17	73	32	23	
17	609.41	122	35	23	110	38	26	
19	911.39	75	27	17	65	29	20	
20	1460.90	453	45	12	423	46	17	

041130D03.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-16 GS040614-2 Code: 041130D03A

Sampling Start:	05/03/2004 12:00:00	Counting Start:	07/01/2004 12:56:13
Sampling Stop:	05/03/2004 12:00:00	Decay Time.	1.42e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	7200 Sec
Sample Size	9.46e+001 g	Real Time	7283 Sec
Collection Efficiency	1.0000	Spectrum File	.041130D03.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 3 (Detector 3)

Efficiency File: (D03)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[2.98E-03*En^-3.47E+00 + 7.49E+01*En^8.79E-01] 05/26/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	92.50	N	5.81E-01 +- 8.44E-01	1.40E+00	6.77E-01	3.92E+13
Eu-155	105.31		1.19E-01 +- 8.95E-02	1.41E-01	6.59E-02	4.35E+04
U-235	143.76	N	-9.91E-02 +- 1.96E-01	3.47E-01	1.66E-01	6.17E+12
	185.72		I.D.	. . . .	. . . . .	6.17E+12
Pb-212	238.63		5.24E-01 +- 1.13E-01	1.56E-01	7.51E-02	1.67E+04
Pb-214	Average:x		4.19E-01 +- 1.06E-01	. . . .	. . . . .	1.40E+07
	295.22		3.33E-01 +- 1.88E-01	2.91E-01	1.38E-01	1.40E+07
	351.99		4.59E-01 +- 1.28E-01	1.78E-01	8.46E-02	1.40E+07
Ra-228	Average:x		7.08E-01 +- 2.50E-01	. . . .	. . . . .	5.04E+04
	338.40		7.16E-01 +- 4.11E-01	6.41E-01	3.07E-01	5.04E+04
	911.07		7.04E-01 +- 3.15E-01	4.61E-01	2.16E-01	5.04E+04
Tl-208	583.14		1.61E-01 +- 7.11E-02	1.05E-01	4.97E-02	1.27E+14
Bi-214	609.32		4.58E-01 +- 1.60E-01	2.32E-01	1.10E-01	1.40E+07
Cs-137	661.62		3.67E-01 +- 8.15E-02	9.78E-02	4.56E-02	2.64E+05
K-40	1460.75		1.59E+01 +- 1.74E+00	1.41E+00	6.53E-01	1.12E+13
Am-241	59.54	N	1.66E-01 +- 2.54E-01	4.22E-01	2.02E-01	3.80E+06
Co-57	122.07	N	-1.22E-02 +- 2.98E-02	5.25E-02	2.51E-02	6.48E+03
Ce-144	133.53	N	3.96E-02 +- 2.27E-01	3.88E-01	1.85E-01	6.82E+03
Ce-139	165.85	N	-1.54E-02 +- 3.90E-02	6.87E-02	3.28E-02	3.30E+03
Th-227	236.00	N	-2.04E-01 +- 3.67E-01	6.47E-01R	3.14E-01	1.90E+05
Cr-51	320.07	N	6.73E-01 +- 1.36E+00	2.29E+00	1.08E+00	6.65E+02
I-131	364.48	N	2.69E+00 +- 6.96E+00	1.18E+01	5.57E+00	1.93E+02
Sb-125	427.95	N	3.06E-03 +- 1.31E-01	2.29E-01	1.08E-01	2.43E+04
Be-7	477.56	N	-5.40E-01 +- 7.91E-01	1.46E+00	6.85E-01	1.28E+03
Sb-124	602.71	N	1.91E-02 +- 1.06E-01	1.82E-01B	8.58E-02	1.44E+03

041130D03.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Cs-134	604.66	N	-1.65E-02 +- 7.92E-02	1.39E-01R	6.66E-02	1.81E+04
Ru-106	621.84	N	1.11E-01 +- 5.10E-01	8.84E-01	4.12E-01	8.84E+03
Ag-110M	657.75	N	-5.15E-03 +- 7.64E-02	1.34E-01R	6.34E-02	6.00E+03
Nb-94	702.50	N	6.79E-02 +- 5.58E-02	8.85E-02	4.12E-02	1.78E+08
Bi-212	727.17	N	7.60E-02 +- 8.51E-01	1.49E+00	6.95E-01	1.67E+04
Nb-95	765.82	N	8.91E-04 +- 1.03E-01	1.82E-01	8.48E-02	1.54E+03
Co-58	810.75	N	-3.32E-02 +- 8.28E-02	1.54E-01	7.10E-02	1.70E+03
Mn-54	834.81	N	5.78E-02 +- 5.91E-02	9.52E-02	4.37E-02	7.49E+03
Sc-46	889.26	N	-7.86E-02 +- 8.10E-02	1.58E-01	7.33E-02	2.01E+03
Pa-234m	1001.03	N	-1.50E+00 +- 1.09E+01	1.96E+01	9.10E+00	3.92E+13
Eu-154	1004.80	N	4.62E-02 +- 3.20E-01	5.63E-01	2.59E-01	7.45E+04
Fe-59	1099.22	N	8.85E-02 +- 2.94E-01	5.08E-01	2.35E-01	1.08E+03
Zn-65	1115.52	N	-9.49E-02 +- 1.77E-01	3.25E-01	1.52E-01	5.85E+03
Co-56	1238.28	N	1.52E-01 +- 2.02E-01	3.33E-01	1.54E-01	1.86E+03
Na-22	1274.54	N	-2.11E-02 +- 7.73E-02	1.41E-01	6.53E-02	2.28E+04
Co-60	1332.51	N	-7.81E-03 +- 6.32E-02	1.16E-01	5.28E-02	4.62E+04
Eu-152	1408.08	N	3.85E-02 +- 2.94E-01	5.28E-01	2.38E-01	1.17E+05
Al-26	1808.65	N	1.25E-02 +- 5.38E-02	9.81E-02	4.23E-02	6.31E+09

MEASURED TOTAL: 2.35E+01 +- 1.52E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.88	95.38	20	47	38	200	0.99	Deleted
2	74.91	151.43	82	48	36	194	1.04	Unknown
3	77.10	155.81	147	50	36	194	1.01	Unknown
4	87.20	176.00	41	41	32	187	0.90	Unknown
5	89.90	181.41	36	27	19	94	0.49	Unknown
8	145.34	292.25	11	28	23	70	0.52	Deleted
11	270.27	542.03	34	30	23	103	1.06	Unknown
15	510.94	1023.14	1	53	44	122	2.38	Deleted

041005D10.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-17 GS040611-1 Code: 041005D10A

Sampling Start:	05/04/2004 12:00:00	Counting Start:	06/22/2004 13:16:36
Sampling Stop:	05/04/2004 12:00:00	Decay Time.	1.18E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.37E+000 g	Real Time	1809 Sec
Collection Efficiency	1.0000	Spc. File	.041005D10.SPC

Detector #: 10 (Detector 10)

Energy(keV)= -1.24 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/22/2004

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.40	95.08	155	59	44	386	1.10	a
2	63.29	128.79	101	56	43	413	0.77	a
3	74.75	151.67	512	82	56	621	1.15	a
4	77.03	156.21	914	86	50	533	1.06	b
5	83.91	169.95	79	52	40	363	0.87	a
6	87.18	176.48	285	65	45	436	1.02	b
7	89.78	181.67	206	62	45	436	1.03	c
8	92.99	188.07	424	80	56	581	1.26	d
9	105.20	212.44	60	58	46	413	1.23	a
10	128.77	259.49	177	75	58	518	1.77	a
11	139.72	281.34	58	68	54	512	1.49	a
12	143.76	289.41	56	45	35	284	0.78	b
13	154.03	309.90	73	66	52	477	1.40	a
14	185.95	373.60	842	80	46	386	1.34	a
15	198.90	399.45	24	36	28	199	0.73	a NET< CL
16	209.39	420.38	175	59	44	354	1.31	a
17	238.68	478.86	1412	89	40	305	1.40	a
18	241.80	485.08	480	68	43	339	1.72	b
19	270.10	541.55	217	61	44	324	1.90	a
20	276.81	554.94	43	35	26	162	1.00	b
21	295.30	591.85	962	78	38	270	1.58	a
22	300.17	601.57	65	36	26	162	1.01	b
23	327.91	656.93	80	47	35	243	1.51	a
24	338.50	678.07	518	60	33	208	1.44	a

041005D10.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	352.02	705.06	1731	92	33	202	1.67	a
26	409.59	819.94	44	29	21	111	1.05	a
27	463.07	926.69	130	38	25	137	1.41	a
28	511.00	1022.35	296	54	35	191	2.67	a
29	583.51	1167.07	432	50	23	105	1.70	a
30	609.59	1219.12	1314	81	30	165	2.12	a
31	727.79	1455.02	93	41	30	144	2.70	a
32	768.90	1537.08	166	55	40	177	4.55	a Wide Pk
33	795.23	1589.63	71	33	23	99	1.99	a
34	860.95	1720.80	57	39	29	126	2.88	a
35	911.41	1821.49	749	63	25	99	2.55	a
36	933.55	1865.69	65	44	34	132	4.28	a
37	965.23	1928.91	174	43	28	103	3.37	a
38	969.24	1936.91	414	49	22	79	2.56	b
39	1120.62	2239.05	263	45	26	93	3.20	a
40	1238.42	2474.16	94	43	32	121	4.15	a
41	1377.94	2752.61	64	27	18	52	2.58	a
42	1462.35	2921.07	48	26	18	48	2.91	a
43	1509.17	3014.53	28	21	15	38	2.16	a
44	1587.97	3171.80	73	31	21	52	4.16	a
45	1729.37	3454.01	62	25	16	33	3.80	a
46	1764.10	3523.32	266	39	18	34	4.75	a
47	1847.18	3689.13	54	36	27	49	8.72	a Wide Pk

041005D10.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET100618.BKG (0418003-30 Weekly Background)

Bkg.File Detector #: 10

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.40	155	59	44	122	60	46	
2	63.29	101	56	43	74	56	44	
3	74.75	512	82	56	488	82	57	
4	77.03	914	86	50	880	86	52	
5	83.91	79	52	40	69	53	41	
6	87.18	285	65	45	270	65	46	
8	92.99	424	80	56	365	80	58	
11	139.72	58	68	54	42	68	55	NET<CL
12	143.76	56	45	35	46	46	36	
14	185.95	842	80	46	800	81	47	
15	198.90	24	36	28	5	37	30	NET<CL
16	209.39	175	59	44	173	60	44	
17	238.68	1412	89	40	1385	90	41	
18	241.80	480	68	43	459	69	44	
19	270.10	217	61	44	214	61	44	
21	295.30	962	78	38	910	78	41	
24	338.50	518	60	33	515	61	33	
25	352.02	1731	92	33	1641	93	37	
28	511.00	296	54	35	150	56	41	
29	583.51	432	50	23	422	50	24	
30	609.59	1314	81	30	1235	82	35	
32	768.90	166	55	40	159	55	41	
35	911.41	749	63	25	739	63	26	
36	933.55	65	44	34	62	44	34	
38	969.24	414	49	22	407	49	23	
39	1120.62	263	45	26	248	46	27	
40	1238.42	94	43	32	87	44	32	
41	1377.94	64	27	18	60	28	19	
42	1462.35	48	26	18	15	27	21	NET<CL
45	1729.37	62	25	16	58	25	17	
46	1764.10	266	39	18	249	39	19	

041005D10.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-17 GS040611-1 Code: 041005D10A

Sampling Start:	05/04/2004 12:00:00	Counting Start:	06/22/2004 13:16:36
Sampling Stop:	05/04/2004 12:00:00	Decay Time.	1.18e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.37e+000 g	Real Time	1809 Sec
Collection Efficiency	1.0000	Spectrum File	.041005D10.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 10 (Detector 10)

Efficiency File: (D10)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[4.18E-02*En^-2.24E+00 + 3.41E+01*En^6.74E-01] 05/24/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	9.64E+02	+- 2.11E+02	. . . .	. . . .	3.92E+13
	63.29		5.33E+02	+- 4.06E+02	6.56E+02	3.18E+02	3.92E+13
	92.50		1.12E+03	+- 2.47E+02	3.66E+02	1.79E+02	3.92E+13
Eu-155	105.31		4.45E+01	+- 4.25E+01	6.94E+01	3.37E+01	4.35E+04
U-235	143.76		5.78E+01	+- 5.77E+01	9.41E+01	4.54E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	. . . .	6.17E+12
Pb-212	Average:	x	5.11E+02	+- 3.29E+01	. . . .	. . . .	1.67E+04
	238.63		5.16E+02	+- 3.34E+01	3.16E+01	1.53E+01	1.67E+04
	300.09		3.63E+02	+- 2.00E+02	3.09E+02	1.47E+02	1.67E+04
Tl-208	Average:	x	1.30E+02	+- 1.52E+01	. . . .	. . . .	1.27E+14
	277.36		1.13E+02	+- 9.10E+01	1.46E+02	6.94E+01	1.27E+14
	583.14		1.30E+02	+- 1.56E+01	1.57E+01	7.41E+00	1.27E+14
	860.47		1.55E+02	+- 1.05E+02	1.66E+02	7.95E+01	1.27E+14
Pb-214	Average:	x	8.30E+02	+- 3.92E+01	. . . .	. . . .	1.40E+07
	295.22		8.12E+02	+- 6.95E+01	7.49E+01	3.62E+01	1.40E+07
	351.99		8.38E+02	+- 4.75E+01	3.96E+01	1.91E+01	1.40E+07
Ra-228	Average:	x	9.54E+02	+- 5.73E+01	. . . .	. . . .	5.04E+04
	338.40		8.59E+02	+- 1.01E+02	1.15E+02	5.53E+01	5.04E+04
	911.07		1.02E+03	+- 8.69E+01	7.55E+01	3.59E+01	5.04E+04
	968.90		9.58E+02	+- 1.16E+02	1.16E+02	5.47E+01	5.04E+04
Bi-212	727.17		4.47E+02	+- 1.99E+02	3.04E+02	1.45E+02	1.67E+04
Cs-134	Average:	x	1.13E+01	+- 1.02E+01	. . . .	. . . .	1.81E+04
	795.76		2.80E+01	+- 1.29E+01	1.92E+01	9.08E+00	1.81E+04
	604.66	N	-1.64E+01	+- 1.66E+01	2.98E+01R	1.45E+01	1.81E+04
Bi-214	Average:	x	6.63E+02	+- 1.12E+02	. . . .	. . . .	1.40E+07

041005D10.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
	1120.28		6.63E+02 +- 1.22E+02	1.53E+02	7.29E+01	1.40E+07
	609.32		6.63E+02 +- 2.79E+02	4.40E+02	2.19E+02	1.40E+07
Co-56	1238.28		8.64E+01 +- 4.32E+01	6.70E+01	3.22E+01	1.86E+03
K-40	1460.75	N	6.57E+01 +- 1.17E+02	1.96E+02	9.19E+01	1.12E+13
Am-241	59.54	N	6.16E+01 +- 5.64E+01	9.19E+01B	4.48E+01	3.80E+06
Co-57	122.07	N	3.75E-01 +- 1.07E+01	1.81E+01	8.82E+00	6.48E+03
Ce-144	133.53	N	-1.15E+02 +- 8.48E+01	1.49E+02b	7.28E+01	6.82E+03
Ce-139	165.85	N	-9.06E+00 +- 1.34E+01	2.31E+01	1.13E+01	3.30E+03
Th-227	236.00	N	6.27E+02 +- 1.34E+03	2.21E+03P	1.10E+03	1.90E+05
Cr-51	320.07	N	-1.22E+02 +- 2.63E+02	4.59E+02	2.21E+02	6.65E+02
I-131	364.48	N	8.94E+01 +- 6.58E+02	1.12E+03	5.38E+02	1.93E+02
Sb-125	427.95	N	8.11E+00 +- 2.86E+01	4.84E+01	2.32E+01	2.43E+04
Be-7	477.56	N	7.82E+01 +- 1.48E+02	2.47E+02	1.18E+02	1.28E+03
Sb-124	602.71	N	-6.43E+00 +- 1.97E+01	3.42E+01B	1.65E+01	1.44E+03
Ru-106	621.84	N	-1.93E+01 +- 1.08E+02	1.88E+02	9.01E+01	8.84E+03
Ag-110M	657.75	N	-5.60E+00 +- 1.24E+01	2.18E+01	1.05E+01	6.00E+03
Cs-137	661.62	N	-4.60E+00 +- 1.26E+01	2.20E+01	1.06E+01	2.64E+05
Nb-94	702.50	N	1.24E+01 +- 1.19E+01	1.93E+01	9.27E+00	1.78E+08
Nb-95	765.82	N	-4.04E+01 +- 3.04E+01	5.60E+01R	2.73E+01	1.54E+03
Co-58	810.75	N	-9.59E+00 +- 1.84E+01	3.26E+01	1.56E+01	1.70E+03
Mn-54	834.81	N	3.29E+00 +- 1.47E+01	2.49E+01	1.20E+01	7.49E+03
Sc-46	889.26	N	-4.41E+00 +- 1.66E+01	2.92E+01	1.39E+01	2.01E+03
Pa-234m	1001.03	N	2.80E+03 +- 1.81E+03	2.81E+03	1.32E+03	3.92E+13
Eu-154	1004.80	N	3.67E+01 +- 6.21E+01	1.04E+02	4.90E+01	7.45E+04
Fe-59	1099.22	N	-7.86E+00 +- 4.45E+01	7.82E+01	3.71E+01	1.08E+03
Zn-65	1115.52	N	-2.91E+01 +- 4.82E+01	8.53E+01R	4.14E+01	5.85E+03
Na-22	1274.54	N	-1.70E+01 +- 1.55E+01	2.83E+01	1.35E+01	2.28E+04
Co-60	1332.51	N	1.38E+00 +- 1.38E+01	2.39E+01	1.13E+01	4.62E+04
Eu-152	1408.08	N	7.07E+01 +- 7.99E+01	1.31E+02	6.24E+01	1.17E+05
Al-26	1808.65	N	3.58E+00 +- 1.26E+01	2.16E+01	1.01E+01	6.31E+09

MEASURED TOTAL: 8.56E+03 +- 5.19E+03 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.40	95.08	122	60	46	386	1.10	Unknown
3	74.75	151.67	488	82	57	621	1.15	Unknown
4	77.03	156.21	880	86	52	533	1.06	Unknown
5	83.91	169.95	69	53	41	363	0.87	Unknown
6	87.18	176.48	270	65	46	436	1.02	Unknown
7	89.78	181.67	206	62	45	436	1.03	Unknown
10	128.77	259.49	177	75	58	518	1.77	Unknown
11	139.72	281.34	42	68	55	512	1.49	Deleted
13	154.03	309.90	73	66	52	477	1.40	Unknown
15	198.90	399.45	5	37	30	199	0.73	Deleted

041005D10.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
16	209.39	420.38	173	60	44	354	1.31	Unknown
18	241.80	485.08	459	69	44	339	1.72	Unknown
19	270.10	541.55	214	61	44	324	1.90	Unknown
23	327.91	656.93	80	47	35	243	1.51	Unknown
26	409.59	819.94	44	29	21	111	1.05	Unknown
27	463.07	926.69	130	38	25	137	1.41	Unknown
28	511.00	1022.35	150	56	41	191	2.67	Unknown
30	609.59	1219.12	1235	82	35	165	2.12	SPLIT
32	768.90	1537.08	159	55	41	177	4.55	Unknown
36	933.55	1865.69	62	44	34	132	4.28	Unknown
37	965.23	1928.91	174	43	28	103	3.37	Unknown
41	1377.94	2752.61	60	28	19	52	2.58	Unknown
43	1509.17	3014.53	28	21	15	38	2.16	Unknown
44	1587.97	3171.80	73	31	21	52	4.16	Unknown
45	1729.37	3454.01	58	25	17	33	3.80	Unknown
46	1764.10	3523.32	249	39	19	34	4.75	Unknown
47	1847.18	3689.13	54	36	27	49	8.72	Unknown
49	609.59	1219.12	98	972	35	165	2.12	1121SEsc

041220D04.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-18 GS040614-2 Code: 041220D04A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 12:56:41
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	9.71E+001 g	Real Time	1812 Sec
Collection Efficiency	1.0000	Spc. File	.041220D04.SPC

Detector #: 4 (Detector 4)

Energy(keV)= -1.08 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004
FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.65	95.27	73	58	46	519	0.48	a
2	56.92	115.78	27	45	36	364	0.37	a NET< CL
3	63.24	128.40	350	116	90	1397	1.09	a
4	74.82	151.51	1758	130	82	1339	0.77	a Wide Pk
5	77.08	156.02	3025	144	77	1187	0.79	b
6	79.26	160.37	42	64	52	663	0.44	c NET< CL
7	81.16	164.17	49	50	39	430	0.37	d
8	84.04	169.92	392	95	71	1024	0.77	e
9	87.18	176.18	1343	129	88	1306	1.08	f
10	89.92	181.65	855	99	65	858	0.88	g
11	92.94	187.68	1532	133	88	1227	1.36	h
12	94.79	191.37	84	65	51	577	0.65	i
13	99.17	200.11	274	129	103	1457	1.65	a Wide Pk
14	105.40	212.55	199	90	70	912	0.96	a
15	112.93	227.59	62	94	76	984	1.12	a NET< CL
16	115.26	232.24	88	74	59	703	0.75	b
17	125.81	253.29	52	42	32	289	0.40	a
18	129.13	259.93	376	82	60	723	0.77	b
19	143.86	289.34	125	66	52	589	0.69	a
20	154.04	309.65	167	88	69	876	0.96	a
21	185.96	373.38	1510	110	65	770	0.98	a
22	195.12	391.66	50	50	39	376	0.45	a
23	209.15	419.67	623	89	60	674	0.92	a
24	210.97	423.29	17	46	37	337	0.46	b NET< CL

041220D04.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	235.83	472.93	107	69	54	539	0.97 a	HiResid
26	238.57	478.40	6631	176	54	539	1.01 b	HiResid
27	241.57	484.38	1676	122	74	809	1.45 c	HiResid
28	262.43	526.03	57	87	71	690	1.65 a	NET< CL Wide Pk
29	270.19	541.51	521	87	61	583	1.32 a	
30	277.37	555.84	211	61	44	390	0.89 a	
31	287.99	577.06	64	51	40	323	0.77 a	
32	295.14	591.33	2554	118	50	426	1.09 a	
33	300.09	601.20	411	68	44	365	1.04 b	
34	313.82	628.62	42	47	37	278	0.74 a	
35	327.90	656.72	288	64	45	371	0.97 a	
36	331.98	664.86	45	43	33	247	0.63 b	
37	338.20	677.28	1323	94	49	410	1.09 a	
38	351.76	704.34	4179	140	44	334	1.18 a	
39	401.74	804.12	50	60	48	364	1.28 a	
40	404.94	810.52	57	55	43	319	1.16 b	
41	409.43	819.47	146	58	43	319	1.11 c	
42	462.91	926.22	345	60	39	260	1.48 a	
43	510.69	1021.60	543	68	41	286	1.43 a	
44	533.24	1066.62	53	50	39	251	1.63 a	
45	562.33	1124.70	58	38	29	160	1.12 a	
46	583.03	1166.01	1878	99	39	267	1.42 a	
47	609.10	1218.07	2964	117	35	208	1.44 a	
48	665.38	1330.42	52	35	26	147	0.94 a	
49	727.03	1453.48	430	55	30	175	1.47 a	
50	754.80	1508.92	37	41	32	194	1.69 a	
51	768.21	1535.69	229	53	36	227	1.78 a	
52	772.22	1543.69	57	35	26	144	1.16 b	
53	785.51	1570.22	112	44	32	175	1.88 a	
54	794.78	1588.73	220	45	28	140	1.61 a	
55	860.20	1719.31	260	46	27	127	1.78 a	
56	904.67	1808.09	50	40	31	153	2.11 a	
57	911.04	1820.81	1362	81	27	130	1.81 b	
58	933.77	1866.18	127	36	23	98	1.67 a	
59	964.45	1927.42	236	43	24	98	1.90 a	
60	968.63	1935.77	795	64	24	98	1.99 b	
61	1000.59	1999.58	24	28	22	93	1.82 a	
62	1119.92	2237.78	551	56	25	107	2.32 a	
63	1154.72	2307.26	86	40	29	119	3.09 a	
64	1237.56	2472.62	189	39	23	92	2.34 a	
65	1280.29	2557.91	41	32	24	93	2.43 a	
66	1377.32	2751.61	116	31	18	59	1.90 a	
67	1407.61	2812.07	55	29	21	87	1.63 a	
68	1460.22	2917.10	109	39	27	107	2.89 a	
69	1508.54	3013.57	39	30	22	85	2.25 a	
70	1588.70	3173.58	110	52	39	178	4.25 a	Wide Pk
71	1620.13	3236.33	33	24	17	54	2.12 a	
72	1629.94	3255.91	41	28	21	67	2.55 b	

041220D04.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
73	1729.02	3453.70	110	28	16	41	2.53	a
74	1763.88	3523.29	462	49	19	52	3.06	a
75	1846.98	3689.18	41	24	16	41	2.73	a

041220D04.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET040625.BKG (0418003-34 Weekly Background)

Bkg.File Detector #: 4

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.65	73	58	46	72	58	46	
3	63.24	350	116	90	346	116	91	
4	74.82	1758	130	82	1754	130	82	
5	77.08	3025	144	77	3020	144	77	
9	87.18	1343	129	88	1343	129	88	
10	89.92	855	99	65	854	99	65	
11	92.94	1532	133	88	1521	133	88	
16	115.26	88	74	59	86	74	59	
21	185.96	1510	110	65	1502	111	65	
26	238.57	6631	176	54	6625	176	54	
37	338.20	1323	94	49	1321	94	49	
38	351.76	4179	140	44	4175	140	44	
43	510.69	543	68	41	504	68	42	
46	583.03	1878	99	39	1876	99	39	
47	609.10	2964	117	35	2961	117	35	
57	911.04	1362	81	27	1362	81	28	
68	1460.22	109	39	27	104	39	27	

041220D04.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-18 GS040614-2 Code: 041220D04A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 12:56:41
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	9.71e+001 g	Real Time	1812 Sec
Collection Efficiency	1.0000	Spectrum File	.041220D04.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 4 (Detector 4)

Efficiency File: (D04)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[4.98E-03*En^-3.26E+00 + 6.77E+01*En^8.96E-01] 06/21/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	8.12E+01 +- 6.88E+00	. . . .	. . . .	3.92E+13
	63.29		6.26E+01 +- 2.10E+01	3.33E+01	1.64E+01	3.92E+13
	92.50		8.35E+01 +- 7.28E+00	9.83E+00	4.84E+00	3.92E+13
Eu-155	105.31		2.47E+00 +- 1.11E+00	1.77E+00	8.70E-01	4.35E+04
Pb-212	Average:	x	4.82E+01 +- 1.26E+00	. . . .	. . . .	1.67E+04
	115.18		3.70E+01 +- 3.17E+01	5.17E+01	2.53E+01	1.67E+04
	238.63		4.82E+01 +- 1.28E+00	8.09E-01	3.94E-01	1.67E+04
	300.09		4.78E+01 +- 7.85E+00	1.07E+01	5.17E+00	1.67E+04
U-235	143.76		2.59E+00 +- 1.38E+00	2.19E+00	1.07E+00	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Th-227	236.00		2.59E+00 +- 1.66E+00	2.67E+00	1.30E+00	1.90E+05
Tl-208	Average:	x	1.44E+01 +- 7.20E-01	. . . .	. . . .	1.27E+14
	277.36		1.13E+01 +- 3.25E+00	4.84E+00	2.35E+00	1.27E+14
	583.14		1.43E+01 +- 7.56E-01	6.22E-01	3.00E-01	1.27E+14
	860.47		1.92E+01 +- 3.38E+00	4.15E+00	1.97E+00	1.27E+14
Pb-214	Average:	x	4.67E+01 +- 1.27E+00	. . . .	. . . .	1.40E+07
	295.22		4.72E+01 +- 2.18E+00	1.90E+00	9.24E-01	1.40E+07
	351.99		4.65E+01 +- 1.56E+00	1.02E+00	4.95E-01	1.40E+07
Ra-228	Average:	x	5.04E+01 +- 2.00E+00	. . . .	. . . .	5.04E+04
	338.40		4.76E+01 +- 3.39E+00	3.64E+00	1.77E+00	5.04E+04
	911.07		5.17E+01 +- 3.08E+00	2.20E+00	1.05E+00	5.04E+04
	968.90		5.21E+01 +- 4.17E+00	3.35E+00	1.59E+00	5.04E+04
Cs-134	Average:	x	7.53E-01 +- 2.58E-01	. . . .	. . . .	1.81E+04
	563.26		4.57E+00 +- 2.99E+00	4.71E+00	2.25E+00	1.81E+04
	604.66	N	2.70E-02 +- 3.11E-01	5.29E-01B	2.55E-01	1.81E+04

041220D04.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
	795.76		2.31E+00 +- 4.69E-01	6.06E-01	2.89E-01	1.81E+04
Bi-212	727.17		5.43E+01 +- 6.97E+00	7.91E+00	3.78E+00	1.67E+04
Pa-234m	1001.03		4.26E+01 +- 5.03E+01	8.26E+01	3.89E+01	3.92E+13
Bi-214	Average:x		4.23E+01 +- 3.94E+00	. . . .	. . . .	1.40E+07
	1120.28		4.23E+01 +- 4.29E+00	4.06E+00	1.93E+00	1.40E+07
	609.32		4.23E+01 +- 9.85E+00	1.55E+01	7.73E+00	1.40E+07
Eu-152	1408.08		3.79E+00 +- 2.00E+00	3.01E+00	1.42E+00	1.17E+05
K-40	1460.75		1.38E+01 +- 5.18E+00	7.63E+00	3.63E+00	1.12E+13
Am-241	59.54	N	-6.99E-02 +- 1.61E+00	2.72E+00B	1.33E+00	3.80E+06
Co-57	122.07	N	1.14E-01 +- 2.22E-01	3.69E-01	1.80E-01	6.48E+03
Ce-144	133.53	N	-1.95E-01 +- 1.71E+00	2.88E+00	1.41E+00	6.82E+03
Ce-139	165.85	N	8.08E-02 +- 2.71E-01	4.52E-01	2.21E-01	3.30E+03
Cr-51	320.07	N	1.66E+00 +- 7.88E+00	1.33E+01	6.43E+00	6.65E+02
I-131	364.48	N	-3.50E+00 +- 3.04E+01	5.19E+01	2.51E+01	1.93E+02
Sb-125	427.95	N	3.35E-01 +- 7.71E-01	1.29E+00	6.22E-01	2.43E+04
Be-7	477.56	N	3.78E+00 +- 4.74E+00	7.80E+00	3.76E+00	1.28E+03
Sb-124	602.71	N	7.50E-02 +- 5.52E-01	9.36E-01	4.51E-01	1.44E+03
Ru-106	621.84	N	-1.51E+00 +- 3.28E+00	5.72E+00	2.75E+00	8.84E+03
Ag-110M	657.75	N	-3.81E-01 +- 3.78E-01	6.75E-01	3.25E-01	6.00E+03
Cs-137	661.62	N	3.39E-01 +- 3.60E-01	5.88E-01B	2.83E-01	2.64E+05
Nb-94	702.50	N	3.29E-01 +- 3.20E-01	5.21E-01	2.50E-01	1.78E+08
Nb-95	765.82	N	-9.27E-01 +- 1.03E+00	1.82E+00R	8.88E-01	1.54E+03
Co-58	810.75	N	-6.43E-01 +- 5.29E-01	9.68E-01	4.64E-01	1.70E+03
Mn-54	834.81	N	2.11E-01 +- 4.08E-01	6.81E-01	3.27E-01	7.49E+03
Sc-46	889.26	N	-4.08E-01 +- 5.01E-01	9.03E-01	4.31E-01	2.01E+03
Eu-154	1004.80	N	-2.07E+00 +- 2.40E+00	4.44E+00r	2.14E+00	7.45E+04
Fe-59	1099.22	N	-7.98E-01 +- 1.31E+00	2.38E+00	1.13E+00	1.08E+03
Zn-65	1115.52	N	-1.28E+00 +- 1.15E+00	2.15E+00R	1.04E+00	5.85E+03
Co-56	1238.28	N	5.63E-02 +- 2.01E+00	3.38E+00r	1.65E+00	1.86E+03
Na-22	1274.54	N	-2.17E-01 +- 5.37E-01	9.55E-01R	4.59E-01	2.28E+04
Co-60	1332.51	N	-6.21E-02 +- 3.76E-01	6.63E-01	3.13E-01	4.62E+04
Al-26	1808.65	N	1.10E-01 +- 3.48E-01	6.02E-01	2.77E-01	6.31E+09

MEASURED TOTAL: 4.13E+02 +- 1.03E+02 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.65	95.27	72	58	46	519	0.48	Unknown
2	56.92	115.78	27	45	36	364	0.37	Deleted
4	74.82	151.51	1754	130	82	1339	0.77	Unknown
5	77.08	156.02	3020	144	77	1187	0.79	Unknown
6	79.26	160.37	42	64	52	663	0.44	Deleted
7	81.16	164.17	49	50	39	430	0.37	Unknown
8	84.04	169.92	392	95	71	1024	0.77	Unknown
9	87.18	176.18	1343	129	88	1306	1.08	Unknown

041220D04.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
10	89.92	181.65	854	99	65	858	0.88	Unknown
12	94.79	191.37	84	65	51	577	0.65	Unknown
13	99.17	200.11	274	129	103	1457	1.65	1120DEsc
15	112.93	227.59	62	94	76	984	1.12	Deleted
17	125.81	253.29	52	42	32	289	0.40	Unknown
18	129.13	259.93	376	82	60	723	0.77	Unknown
20	154.04	309.65	167	88	69	876	0.96	Unknown
22	195.12	391.66	50	50	39	376	0.45	Unknown
23	209.15	419.67	623	89	60	674	0.92	Unknown
24	210.97	423.29	17	46	37	337	0.46	Deleted
27	241.57	484.38	1676	122	74	809	1.45	Unknown
28	262.43	526.03	57	87	71	690	1.65	Deleted
29	270.19	541.51	521	87	61	583	1.32	Unknown
31	287.99	577.06	64	51	40	323	0.77	Unknown
34	313.82	628.62	42	47	37	278	0.74	Unknown
35	327.90	656.72	288	64	45	371	0.97	Unknown
36	331.98	664.86	45	43	33	247	0.63	Unknown
39	401.74	804.12	50	60	48	364	1.28	Unknown
40	404.94	810.52	57	55	43	319	1.16	Unknown
41	409.43	819.47	146	58	43	319	1.11	Unknown
42	462.91	926.22	345	60	39	260	1.48	Unknown
43	510.69	1021.60	504	68	42	286	1.43	Unknown
44	533.24	1066.62	53	50	39	251	1.63	Unknown
47	609.10	1218.07	2961	117	35	208	1.44	SPLIT
48	665.38	1330.42	52	35	26	147	0.94	Unknown
50	754.80	1508.92	37	41	32	194	1.69	Unknown
51	768.21	1535.69	229	53	36	227	1.78	Unknown
52	772.22	1543.69	57	35	26	144	1.16	Unknown
53	785.51	1570.22	112	44	32	175	1.88	Unknown
56	904.67	1808.09	50	40	31	153	2.11	Unknown
58	933.77	1866.18	127	36	23	98	1.67	Unknown
59	964.45	1927.42	236	43	24	98	1.90	Unknown
63	1154.72	2307.26	86	40	29	119	3.09	Unknown
64	1237.56	2472.62	189	39	23	92	2.34	Unknown
65	1280.29	2557.91	41	32	24	93	2.43	Unknown
66	1377.32	2751.61	116	31	18	59	1.90	Unknown
69	1508.54	3013.57	39	30	22	85	2.25	Unknown
70	1588.70	3173.58	110	52	39	178	4.25	Unknown
71	1620.13	3236.33	33	24	17	54	2.12	Unknown
72	1629.94	3255.91	41	28	21	67	2.55	Unknown
73	1729.02	3453.70	110	28	16	41	2.53	Unknown
74	1763.88	3523.29	462	49	19	52	3.06	Unknown
75	1846.98	3689.18	41	24	16	41	2.73	Unknown
77	609.10	1218.07	60	1371	35	208	1.44	1120SEsc

041007D10.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-19 GS040611-1 Code: 041007D10A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 13:58:20
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.11E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.45E+000 g	Real Time	3625 Sec
Collection Efficiency	1.0000	Spc. File	.041007D10.SPC

Detector #: 10 (Detector 10)

Energy(keV)= -1.24 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/22/2004

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.33	94.94	370	95	71	1004	1.21 a	
2	63.21	128.65	351	100	76	1218	0.94 a	
3	74.76	151.70	1398	130	87	1507	1.22 a	
4	77.01	156.18	2153	133	78	1292	1.02 b	
5	83.90	169.94	401	105	80	1267	1.14 a	HiResid Wide Pk
6	87.21	176.54	903	118	84	1290	1.33 b	HiResid
7	89.83	181.76	713	103	72	1033	1.15 c	HiResid
8	92.97	188.03	1586	147	102	1533	1.95 d	HiResid
9	99.04	200.14	500	134	104	1444	2.28 e	HiResid
10	105.31	212.66	102	61	48	561	0.66 a	
11	128.92	259.78	253	83	63	845	0.93 a	
12	143.57	289.02	286	102	79	1152	1.25 a	
13	154.09	310.02	225	122	97	1478	1.81 a	
14	163.44	328.68	86	67	53	642	0.76 a	
15	185.96	373.63	2510	133	72	957	1.33 a	
16	198.76	399.17	108	70	55	646	0.97 a	
17	205.17	411.96	124	63	49	538	0.88 b	
18	209.28	420.16	488	87	62	753	1.18 c	
19	238.69	478.86	3536	141	63	763	1.45 a	
20	241.85	485.17	1396	111	68	848	1.60 b	
21	259.09	519.58	54	66	53	569	1.30 a	
22	270.25	541.86	725	93	62	681	1.76 a	Wide Pk
23	276.86	555.04	222	130	104	1300	3.44 b	

041007D10.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
24	295.28	591.81	2526	120	54	559	1.50 a	
25	300.07	601.37	229	62	45	435	1.20 b	
26	328.17	657.46	287	73	53	548	1.45 a	
27	338.45	677.97	1430	97	50	491	1.55 a	
28	352.04	705.10	4608	148	49	449	1.68 a	HiResid
29	409.78	820.33	177	59	43	397	1.46 a	
30	463.27	927.08	360	64	42	347	1.81 a	
31	511.09	1022.54	661	85	55	469	2.81 a	
32	583.52	1167.08	1181	84	40	295	1.98 a	
33	609.65	1219.24	3569	131	43	334	2.18 a	
34	665.81	1331.32	104	56	43	313	2.34 a	
35	727.70	1454.84	327	61	40	286	2.17 a	
36	755.63	1510.60	40	44	35	227	2.02 a	
37	768.45	1536.17	413	71	48	341	2.99 b	
38	772.95	1545.16	100	47	35	227	1.92 c	
39	785.46	1570.13	145	77	60	431	4.13 a	
40	795.25	1589.65	308	58	38	242	2.36 b	
41	805.59	1610.29	72	70	56	397	3.79 c	
42	836.36	1671.72	98	47	36	233	1.99 a	
43	839.79	1678.57	52	38	29	175	1.39 b	
44	860.90	1720.68	139	50	36	218	2.40 a	
45	911.55	1821.77	1819	99	42	271	2.73 a	
46	934.39	1867.37	175	51	36	197	2.79 a	
47	965.51	1929.48	462	66	41	224	3.39 a	
48	969.39	1937.22	1016	75	33	171	2.61 b	
49	1001.50	2001.31	38	34	26	131	1.80 a	
50	1120.75	2239.30	805	73	38	202	3.24 a	
51	1154.82	2307.31	65	52	40	202	3.91 a	
52	1238.20	2473.72	259	51	33	150	3.28 a	
53	1281.80	2560.74	54	40	31	141	3.01 a	
54	1377.70	2752.14	177	45	30	145	2.48 a	
55	1408.39	2813.38	78	39	28	127	2.62 a	
56	1460.97	2918.32	111	49	36	158	4.08 a	
57	1508.55	3013.29	66	61	48	228	5.37 a	
58	1588.07	3172.00	138	49	35	145	4.26 a	
59	1630.99	3257.66	33	54	43	201	4.79 a	NET< CL
60	1661.25	3318.05	71	40	30	88	5.36 a	
61	1729.04	3453.35	158	41	27	88	3.90 a	
62	1764.28	3523.68	692	64	31	102	4.70 a	
63	1847.09	3688.95	69	32	22	71	3.08 a	

041007D10.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET100618.BKG (0418003-30 Weekly Background)

Bkg.File Detector #: 10

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.33	370	95	71	304	97	74	
2	63.21	351	100	76	297	101	79	
3	74.76	1398	130	87	1351	131	89	
4	77.01	2153	133	78	2085	134	81	
5	83.90	401	105	80	380	107	82	
6	87.21	903	118	84	874	119	85	
8	92.97	1586	147	102	1467	149	105	
12	143.57	286	102	79	268	103	81	
14	163.44	86	67	53	83	69	54	
15	185.96	2510	133	72	2425	134	75	
16	198.76	108	70	55	70	72	58	
18	209.28	488	87	62	484	88	63	
19	238.69	3536	141	63	3480	142	65	
20	241.85	1396	111	68	1353	112	70	
22	270.25	725	93	62	720	93	63	
24	295.28	2526	120	54	2422	121	58	
27	338.45	1430	97	50	1423	98	51	
28	352.04	4608	148	49	4428	150	56	
31	511.09	661	85	55	369	88	65	
32	583.52	1181	84	40	1160	85	42	
33	609.65	3569	131	43	3411	132	51	
37	768.45	413	71	48	398	72	50	
42	836.36	98	47	36	87	50	38	
45	911.55	1819	99	42	1799	100	44	
46	934.39	175	51	36	169	52	37	
48	969.39	1016	75	33	1003	76	35	
50	1120.75	805	73	38	775	74	41	
52	1238.20	259	51	33	245	53	35	
54	1377.70	177	45	30	168	46	31	
56	1460.97	111	49	36	45	51	40	
61	1729.04	158	41	27	151	42	28	
62	1764.28	692	64	31	659	65	33	

041007D10.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-19 GS040611-1 Code: 041007D10A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 13:58:20
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.11e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	3600 Sec
Sample Size	1.45e+000 g	Real Time	3625 Sec
Collection Efficiency	1.0000	Spectrum File	.041007D10.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 10 (Detector 10)

Efficiency File: (D10)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[4.18E-02*En^-2.24E+00 + 3.41E+01*En^6.74E-01] 05/24/2004

Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	1.83E+03 +- 1.84E+02	. . . .	. . . .	3.92E+13
	63.29		1.02E+03 +- 3.48E+02	5.47E+02	2.69E+02	3.92E+13
	92.50		2.15E+03 +- 2.18E+02	3.11E+02	1.53E+02	3.92E+13
Eu-155	105.31		3.54E+01 +- 2.14E+01	3.42E+01	1.66E+01	4.35E+04
U-235	Average:	x	1.48E+02 +- 4.33E+01	. . . .	. . . .	6.17E+12
	143.76		1.58E+02 +- 6.09E+01	9.67E+01	4.75E+01	6.17E+12
	163.35		1.06E+02 +- 8.76E+01	1.42E+02	6.95E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
	205.31		1.69E+02 +- 8.63E+01	1.37E+02	6.65E+01	6.17E+12
Pb-212	Average:	x	6.12E+02 +- 2.47E+01	. . . .	. . . .	1.67E+04
	238.63		6.13E+02 +- 2.50E+01	2.34E+01	1.14E+01	1.67E+04
	300.09		5.99E+02 +- 1.63E+02	2.42E+02	1.17E+02	1.67E+04
Tl-208	Average:	x	1.71E+02 +- 1.22E+01	. . . .	. . . .	1.27E+14
	277.36		2.75E+02 +- 1.62E+02	2.63E+02	1.30E+02	1.27E+14
	583.14		1.70E+02 +- 1.25E+01	1.27E+01	6.14E+00	1.27E+14
	860.47		1.80E+02 +- 6.46E+01	9.74E+01	4.69E+01	1.27E+14
Pb-214	Average:	x	1.06E+03 +- 2.96E+01	. . . .	. . . .	1.40E+07
	295.22		1.02E+03 +- 5.11E+01	5.01E+01	2.45E+01	1.40E+07
	351.99		1.07E+03 +- 3.62E+01	2.79E+01	1.36E+01	1.40E+07
Ra-228	Average:	x	1.15E+03 +- 4.31E+01	. . . .	. . . .	5.04E+04
	338.40		1.13E+03 +- 7.73E+01	8.31E+01	4.05E+01	5.04E+04
	911.07		1.18E+03 +- 6.56E+01	5.91E+01	2.87E+01	5.04E+04
	968.90		1.12E+03 +- 8.50E+01	8.08E+01	3.89E+01	5.04E+04
Bi-214	Average:	x	9.48E+02 +- 3.40E+01	. . . .	. . . .	1.40E+07
	609.32		9.43E+02 +- 3.65E+01	2.87E+01	1.40E+01	1.40E+07

041007D10.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g	)	MDA	Critical Level	Halflife (hrs)
	1120.28		9.82E+02 +-	9.43E+01	1.07E+02	5.16E+01	1.40E+07
Bi-212	727.17		7.45E+02 +-	1.38E+02	1.89E+02	9.15E+01	1.67E+04
Mn-54	834.81		1.51E+01 +-	8.71E+00	1.38E+01	6.66E+00	7.49E+03
Pa-234m	1001.03		1.16E+03 +-	1.03E+03	1.65E+03	7.86E+02	3.92E+13
Eu-152	1408.08		8.29E+01 +-	4.13E+01	6.33E+01	3.02E+01	1.17E+05
K-40	1460.75		9.38E+01 +-	1.05E+02	1.72E+02	8.34E+01	1.12E+13
Am-241	59.54	N	5.72E+01 +-	4.26E+01	6.93E+01B	3.41E+01	3.80E+06
Co-57	122.07	N	1.15E+00 +-	8.34E+00	1.39E+01	6.84E+00	6.48E+03
Ce-144	133.53	N	-1.98E+00 +-	6.12E+01	1.03E+02b	5.04E+01	6.82E+03
Ce-139	165.85	N	-1.45E+01 +-	1.30E+01	2.20E+01P	1.09E+01	3.30E+03
Th-227	236.00	N	1.47E+02 +-	1.10E+03	1.81E+03P	9.04E+02	1.90E+05
Pa-231	302.67	N	2.70E+02 +-	3.50E+02	5.76E+02P	2.83E+02	7.87E+05
Cr-51	320.07	N	3.77E+01 +-	1.79E+02	2.99E+02	1.46E+02	6.65E+02
I-131	364.48	N	-1.43E+02 +-	3.76E+02	6.43E+02	3.13E+02	1.93E+02
Sb-125	427.95	N	2.20E+01 +-	2.10E+01	3.43E+01	1.67E+01	2.43E+04
Be-7	477.56	N	7.52E+01 +-	1.03E+02	1.70E+02	8.24E+01	1.28E+03
Sb-124	602.71	N	-3.27E+00 +-	1.46E+01	2.47E+01B	1.21E+01	1.44E+03
Cs-134	604.66	N	1.12E+01 +-	9.46E+01	1.56E+02P	7.78E+01	1.81E+04
Ru-106	621.84	N	1.10E+02 +-	7.85E+01	1.26E+02	6.11E+01	8.84E+03
Ag-110M	657.75	N	-1.08E+01 +-	8.93E+00	1.58E+01B	7.66E+00	6.00E+03
Cs-137	661.62	N	-1.11E+01 +-	1.33E+01	2.32E+01R	1.14E+01	2.64E+05
Nb-94	702.50	N	-1.43E-01 +-	8.68E+00	1.47E+01	7.14E+00	1.78E+08
Nb-95	765.82	N	-5.21E+01 +-	2.24E+01	4.10E+01R	2.02E+01	1.54E+03
Co-58	810.75	N	-1.46E+00 +-	1.95E+01	3.29E+01r	1.61E+01	1.70E+03
Sc-46	889.26	N	-1.35E+01 +-	1.20E+01	2.12E+01	1.03E+01	2.01E+03
Eu-154	1004.80	N	-2.46E+01 +-	7.10E+01	1.22E+02r	5.95E+01	7.45E+04
Fe-59	1099.22	N	2.88E+00 +-	3.34E+01	5.66E+01	2.74E+01	1.08E+03
Zn-65	1115.52	N	-4.67E+01 +-	3.57E+01	6.34E+01R	3.11E+01	5.85E+03
Co-56	1238.28	N	1.04E+02 +-	4.68E+01	7.12E+01r	3.50E+01	1.86E+03
Na-22	1274.54	N	-6.90E+00 +-	1.49E+01	2.58E+01R	1.26E+01	2.28E+04
Co-60	1332.51	N	-5.68E+00 +-	1.01E+01	1.76E+01	8.49E+00	4.62E+04
Al-26	1808.65	N	3.53E-01 +-	9.13E+00	1.57E+01	7.49E+00	6.31E+09

MEASURED TOTAL: 8.88E+03 +- 3.78E+03 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.33	94.94	304	97	74	1004	1.21	Unknown
3	74.76	151.70	1351	131	89	1507	1.22	Unknown
4	77.01	156.18	2085	134	81	1292	1.02	Unknown
5	83.90	169.94	380	107	82	1267	1.14	Unknown
6	87.21	176.54	874	119	85	1290	1.33	Unknown
7	89.83	181.76	713	103	72	1033	1.15	Unknown
9	99.04	200.14	500	134	104	1444	2.28	1121DEsc
11	128.92	259.78	253	83	63	845	0.93	Unknown

041007D10.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
13	154.09	310.02	225	122	97	1478	1.81	Unknown
16	198.76	399.17	70	72	58	646	0.97	Unknown
18	209.28	420.16	484	88	63	753	1.18	Unknown
20	241.85	485.17	1353	112	70	848	1.60	Unknown
21	259.09	519.58	54	66	53	569	1.30	Unknown
22	270.25	541.86	720	93	63	681	1.76	Unknown
26	328.17	657.46	287	73	53	548	1.45	Unknown
29	409.78	820.33	177	59	43	397	1.46	Unknown
30	463.27	927.08	360	64	42	347	1.81	Unknown
31	511.09	1022.54	369	88	65	469	2.81	Unknown
34	665.81	1331.32	104	56	43	313	2.34	Unknown
36	755.63	1510.60	40	44	35	227	2.02	Unknown
37	768.45	1536.17	398	72	50	341	2.99	Unknown
38	772.95	1545.16	100	47	35	227	1.92	Unknown
39	785.46	1570.13	145	77	60	431	4.13	Unknown
40	795.25	1589.65	308	58	38	242	2.36	Unknown
41	805.59	1610.29	72	70	56	397	3.79	Unknown
43	839.79	1678.57	52	38	29	175	1.39	Unknown
46	934.39	1867.37	169	52	37	197	2.79	Unknown
47	965.51	1929.48	462	66	41	224	3.39	Unknown
51	1154.82	2307.31	65	52	41	202	3.91	Unknown
52	1238.20	2473.72	245	53	35	150	3.28	Unknown
53	1281.80	2560.74	54	40	31	141	3.01	Unknown
54	1377.70	2752.14	168	46	31	145	2.48	Unknown
57	1508.55	3013.29	66	61	48	228	5.37	Unknown
58	1588.07	3172.00	138	49	35	145	4.26	Unknown
59	1630.99	3257.66	33	54	43	201	4.79	Deleted
60	1661.25	3318.05	71	40	30	88	5.36	Unknown
61	1729.04	3453.35	151	42	28	88	3.90	Unknown
62	1764.28	3523.68	659	65	33	102	4.70	Unknown
63	1847.09	3688.95	69	32	22	71	3.08	Unknown

040959D07.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-19D GS040611-1 Code: 040959D07A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/23/2004 06:22:34
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.12E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.45E+000 g	Real Time	3613 Sec
Collection Efficiency	1.0000	Spc. File	.040959D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.32 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/23/2004
FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.26	96.95	652	78	49	479	0.75 a	
2	52.99	110.37	70	45	35	294	0.57 a	
3	63.02	130.39	237	74	56	627	0.74 a	
4	74.62	153.55	680	101	71	929	1.10	
5	76.92	158.13	1244	104	62	720	0.88	
6	79.15	162.58	82	56	43	417	1.10	
7	83.79	171.85	-141	93	79	1057	0.93	NET< CL
8	87.06	178.37	-28	99	82	1141	0.12	NET< CL
9	89.77	183.77	-667	104	96	1559	20.46	NET< CL
10	92.83	189.88	560	88	61	637	1.31	
11	98.35	200.89	-3	120	99	1085	0.05	NET< CL Wide Pk
12	105.24	214.65	103	61	48	418	1.02 a	
13	108.75	221.66	36	59	48	418	1.04 b	NET< CL
14	115.07	234.27	28	44	35	275	0.65 a	NET< CL
15	128.89	261.85	150	61	46	384	0.94 a	
16	143.61	291.22	129	60	45	380	0.92 a	
17	153.90	311.75	68	65	51	452	1.11 a	
18	185.82	375.46	811	77	43	344	0.95 a	
19	198.69	401.15	37	37	29	187	0.69 a	
20	205.22	414.18	43	47	37	259	0.91 a	
21	209.19	422.10	247	55	37	259	0.97 b	
22	238.56	480.71	1020	75	33	198	0.97 a	
23	241.74	487.06	439	61	37	231	1.22 b	

040959D07.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
24	270.17	543.79	195	69	52	328	1.97 a	Wide Pk
25	295.20	593.74	696	64	30	171	0.92 a	
26	300.19	603.70	46	31	23	114	0.72 b	
27	327.85	658.91	100	38	27	135	0.99 a	
28	338.39	679.93	387	53	29	147	1.16 a	
29	351.97	707.05	1205	78	29	145	1.10 a	
30	409.64	822.14	43	26	19	81	0.77 a	
31	463.30	929.21	117	35	23	96	1.25 a	
32	510.92	1024.24	148	45	31	146	2.03 a	
33	583.34	1168.77	259	43	23	96	1.41 a	
34	609.53	1221.03	991	67	19	64	1.30 a	
35	665.51	1332.76	29	28	22	82	1.46 a	
36	727.37	1456.21	84	30	19	59	1.86 a	
37	768.51	1538.31	58	27	18	67	1.20 a	
38	785.89	1573.00	20	19	14	43	1.01 a	
39	795.05	1591.28	63	24	15	44	1.35 a	
40	911.31	1823.29	369	42	14	35	1.62 a	
41	934.27	1869.10	34	17	10	23	0.99 a	
42	964.49	1929.42	58	20	11	27	1.16 a	
43	969.06	1938.54	205	33	13	35	1.52 b	
44	1120.29	2240.35	161	31	15	41	1.73 a	
45	1238.13	2475.51	73	22	11	25	1.73 a	
46	1377.41	2753.47	45	18	10	21	1.68 a	
47	1407.92	2814.36	23	17	12	27	1.88 a	
48	1763.84	3524.66	146	25	7	8	2.05 a	

040959D07.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET070618.BKG (0418003-27 Weekly Background)

Bkg.File Detector #: 7

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.26	652	78	49	623	79	50	
2	52.99	70	45	35	65	46	35	
3	63.02	237	74	56	215	75	57	
4	74.62	680	101	71	674	101	72	
5	76.92	1244	104	62	1240	104	63	
7	83.79	-141	93	79	-151	93	79	NET<CL
8	87.06	-28	99	82	-32	99	82	NET<CL
10	92.83	560	88	61	528	89	62	
18	185.82	812	77	43	797	78	44	
19	198.69	37	37	29	29	39	31	NET<CL
22	238.56	1020	75	33	1004	76	34	
25	295.20	696	64	30	693	65	31	
29	351.97	1205	78	29	1200	78	30	
32	510.92	148	45	31	80	47	36	
33	583.34	259	43	23	254	43	24	
34	609.53	991	67	19	987	67	20	
40	911.31	369	42	14	368	42	15	

040959D07.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-19D GS040611-1 Code: 040959D07A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/23/2004 06:22:34
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.12e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	3600 Sec
Sample Size	1.45e+000 g	Real Time	3613 Sec
Collection Efficiency	1.0000	Spectrum File	.040959D07.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 7 (Detector 7)

Efficiency File: (D07)(Sh01).EFF (Geo 1 Eff CaL)

Eff.=1/[4.38E-01*En^-1.35E+00 + 1.62E+02*En^9.38E-01] 01/23/2004

Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	1.20E+03	+- 1.85E+02	. . . .	. . . .	3.92E+13
	63.29		8.62E+02	+- 3.02E+02	4.68E+02	2.29E+02	3.92E+13
	92.50		1.40E+03	+- 2.35E+02	3.37E+02	1.65E+02	3.92E+13
Eu-155	105.31		7.36E+01	+- 4.39E+01	7.01E+01	3.41E+01	4.35E+04
U-235	Average:	x	1.94E+02	+- 8.29E+01	. . . .	. . . .	6.17E+12
	143.76		1.97E+02	+- 9.12E+01	1.43E+02	6.94E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	. . . .	6.17E+12
	205.31		1.81E+02	+- 1.99E+02	3.26E+02	1.57E+02	6.17E+12
Pb-212	Average:	x	5.69E+02	+- 4.26E+01	. . . .	. . . .	1.67E+04
	238.63		5.72E+02	+- 4.32E+01	4.04E+01	1.94E+01	1.67E+04
	300.09		4.14E+02	+- 2.79E+02	4.37E+02	2.06E+02	1.67E+04
Pb-214	Average:	x	1.04E+03	+- 5.56E+01	. . . .	. . . .	1.40E+07
	295.22		1.01E+03	+- 9.44E+01	9.43E+01	4.52E+01	1.40E+07
	351.99		1.05E+03	+- 6.87E+01	5.50E+01	2.63E+01	1.40E+07
Ra-228	Average:	x	1.11E+03	+- 8.55E+01	. . . .	. . . .	5.04E+04
	338.40		1.10E+03	+- 1.51E+02	1.74E+02	8.33E+01	5.04E+04
	911.07		1.12E+03	+- 1.29E+02	9.86E+01	4.52E+01	5.04E+04
	968.90		1.08E+03	+- 1.74E+02	1.56E+02	7.09E+01	5.04E+04
Tl-208	583.14		1.54E+02	+- 2.63E+01	3.10E+01	1.47E+01	1.27E+14
Bi-212	727.17		8.39E+02	+- 2.99E+02	4.17E+02	1.95E+02	1.67E+04
Cs-134	Average:	x	1.49E+01	+- 1.15E+01	. . . .	. . . .	1.81E+04
	795.76		5.28E+01	+- 1.99E+01	2.67E+01	1.22E+01	1.81E+04
	604.66	N	-3.97E+00	+- 1.40E+01	2.51E+01B	1.18E+01	1.81E+04
Bi-214	Average:	x	1.00E+03	+- 1.79E+02	. . . .	. . . .	1.40E+07
	1120.28		1.00E+03	+- 1.95E+02	2.06E+02	9.47E+01	1.40E+07

040959D07.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
	609.32		1.00E+03	+- 4.48E+02	7.06E+02	3.52E+02	1.40E+07
Eu-152	1408.08		1.26E+02	+- 9.56E+01	1.46E+02	6.55E+01	1.17E+05
Am-241	59.54	N	2.00E+01	+- 2.87E+01	4.74E+01B	2.31E+01	3.80E+06
Co-57	122.07	N	-4.67E+00	+- 1.18E+01	2.02E+01	9.82E+00	6.48E+03
Ce-144	133.53	N	5.40E+01	+- 9.33E+01	1.55E+02	7.52E+01	6.82E+03
Ce-139	165.85	N	-1.20E+01	+- 1.53E+01	2.66E+01	1.29E+01	3.30E+03
Th-227	236.00	N	5.95E+02	+- 1.88E+03	3.09E+03P	1.54E+03	1.90E+05
Pa-231	302.67	N	-2.23E+02	+- 6.75E+02	1.16E+03P	5.62E+02	7.87E+05
Cr-51	320.07	N	1.10E+02	+- 3.72E+02	6.29E+02	3.02E+02	6.65E+02
I-131	364.48	N	-1.28E+02	+- 7.26E+02	1.27E+03	6.04E+02	1.93E+02
Sb-125	427.95	N	3.22E+01	+- 3.74E+01	6.12E+01	2.88E+01	2.43E+04
Be-7	477.56	N	8.95E+01	+- 2.06E+02	3.48E+02	1.64E+02	1.28E+03
Sb-124	602.71	N	-2.77E+00	+- 2.28E+01	4.04E+01	1.90E+01	1.44E+03
Ru-106	621.84	N	3.64E+01	+- 1.46E+02	2.52E+02	1.18E+02	8.84E+03
Ag-110M	657.75	N	-1.41E+01	+- 1.63E+01	3.06E+01	1.43E+01	6.00E+03
Cs-137	661.62	N	-5.43E+00	+- 2.68E+01	4.68E+01R	2.25E+01	2.64E+05
Nb-94	702.50	N	1.10E+01	+- 1.66E+01	2.76E+01	1.30E+01	1.78E+08
Nb-95	765.82	N	2.49E+01	+- 4.19E+01	6.75E+01R	3.23E+01	1.54E+03
Co-58	810.75	N	-3.01E+01	+- 2.28E+01	4.50E+01	2.10E+01	1.70E+03
Mn-54	834.81	N	9.52E-01	+- 1.77E+01	3.11E+01	1.45E+01	7.49E+03
Sc-46	889.26	N	-1.00E+01	+- 1.83E+01	3.50E+01	1.60E+01	2.01E+03
Pa-234m	1001.03	N	2.01E+03	+- 2.57E+03	4.22E+03	1.92E+03	3.92E+13
Eu-154	1004.80	N	-7.62E+01	+- 8.20E+01	1.62E+02	7.44E+01	7.45E+04
Fe-59	1099.22	N	-2.99E+01	+- 6.05E+01	1.14E+02	5.24E+01	1.08E+03
Zn-65	1115.52	N	4.31E+01	+- 5.81E+01	9.03E+01R	4.23E+01	5.85E+03
Co-56	1238.28	N	1.07E+02	+- 8.67E+01	1.29E+02r	6.11E+01	1.86E+03
Na-22	1274.54	N	-6.59E+00	+- 1.61E+01	3.10E+01	1.40E+01	2.28E+04
Co-60	1332.51	N	-4.50E+00	+- 1.71E+01	3.22E+01	1.46E+01	4.62E+04
K-40	1460.75	N	8.21E+01	+- 1.89E+02	3.24E+02	1.47E+02	1.12E+13
Al-26	1808.65	N	-1.01E+01	+- 1.35E+01	2.96E+01	1.28E+01	6.31E+09

MEASURED TOTAL: 9.53E+03 +- 6.84E+03 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.26	96.95	623	79	50	479	0.75	Unknown
2	52.99	110.37	65	46	35	294	0.57	Unknown
4	74.62	153.55	674	101	72	929	1.10	Unknown
5	76.92	158.13	1240	104	63	720	0.88	Unknown
6	79.15	162.58	82	56	43	417	1.10	Unknown
7	83.79	171.85	-151	93	79	1057	0.93	Deleted
8	87.06	178.37	-32	99	82	1141	0.12	Deleted
9	89.77	183.77	-667	104	96	1559	20.46	Deleted
11	98.35	200.89	-3	120	99	1085	0.05	Deleted
13	108.75	221.66	36	59	48	418	1.04	Deleted

040959D07.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
14	115.07	234.27	28	44	35	275	0.65	Deleted
15	128.89	261.85	150	61	46	384	0.94	Unknown
17	153.90	311.75	68	65	51	452	1.11	Unknown
19	198.69	401.15	29	39	31	187	0.69	Deleted
21	209.19	422.10	247	55	37	259	0.97	Unknown
23	241.74	487.06	439	61	37	231	1.22	Unknown
24	270.17	543.79	195	69	52	328	1.97	Unknown
27	327.85	658.91	100	38	27	135	0.99	Unknown
30	409.64	822.14	43	26	19	81	0.77	Unknown
31	463.30	929.21	117	35	23	96	1.25	Unknown
32	510.92	1024.24	80	47	36	146	2.03	Unknown
34	609.53	1221.03	987	67	20	64	1.30	SPLIT
35	665.51	1332.76	29	28	22	82	1.46	Unknown
37	768.51	1538.31	58	27	18	67	1.20	Unknown
38	785.89	1573.00	20	19	14	43	1.01	Unknown
41	934.27	1869.10	34	17	10	23	0.99	Unknown
42	964.49	1929.42	58	20	11	27	1.16	Unknown
45	1238.13	2475.51	73	22	11	25	1.73	Unknown
46	1377.41	2753.47	45	18	10	21	1.68	Unknown
48	1763.84	3524.66	146	25	7	8	2.05	Unknown
50	609.53	1221.03	124	785	20	64	1.30	1120SEsc

041221D04.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-20 GS040614-2 Code: 041221D04A

Sampling Start: 05/07/2004 12:00:00	Counting Start: 07/01/2004 13:37:27
Sampling Stop: 05/07/2004 12:00:00	Decay Time. . . . . 1.32E+003 Hrs
Buildup Time. . . . . 0.00E+000 Hrs	Live Time . . . . . 1800 Sec
Sample Size . . . . . 1.19E+002 g	Real Time . . . . . 1881 Sec
Collection Efficiency 1.0000	Spc. File 041221D04.SPC

Detector #: 4 (Detector 4)

Energy(keV)= -1.08 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/01/2004
FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.67	95.31	332	191	154	5275	0.58 a	
2	48.52	99.00	16	119	98	2638	0.35 b	NET< CL
3	53.64	109.22	350	253	206	7807	0.94 a	
4	63.33	128.58	2737	261	197	7831	0.85 a	
5	67.77	137.45	442	180	144	5124	0.52 a	
6	74.83	151.54	11749	382	259	12413	1.10	
7	77.13	156.11	21461	414	241	10700	0.81	
8	79.38	160.62	646	254	205	8470	1.03	
9	81.10	164.04	-2827	308	268	13291	10.99	NET< CL
10	84.02	169.87	3971	331	252	10799	1.16	
11	87.20	176.22	263	411	337	19390	0.05	NET< CL
12	89.91	181.64	-7922	384	348	22373	10.17	NET< CL
13	92.81	187.43	10722	376	258	11383	1.22	
14	94.72	191.23	318	295	241	9870	0.36	
15	98.53	198.84	-1106	296	249	10598	2.43	NET< CL
16	99.61	201.00	562	191	152	5152	0.72	
17	105.52	212.80	1763	246	190	6693	1.04 a	HiResid Wide Pk
18	109.00	219.74	1012	323	261	10040	1.42 b	HiResid
19	112.42	226.57	596	459	375	15617	2.36 c	HiResid
20	115.12	231.95	611	208	166	5578	0.79 d	HiResid
21	122.53	246.74	130	172	140	4369	0.58 a	NET< CL
22	129.18	260.03	2123	198	144	4609	0.73 a	HiResid
23	143.97	289.54	1504	221	170	5833	0.84 a	

041221D04.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
24	154.19	309.96	1312	188	143	4542	0.72 a	
25	163.45	328.44	442	144	114	3180	0.43 a	
26	186.02	373.49	14207	342	202	6937	1.08 a	
27	199.24	399.88	114	188	154	4758	0.75 a	NET< CL
28	205.27	411.92	486	209	168	5232	1.01 a	
29	209.22	419.81	3648	238	168	5232	0.91 b	
30	211.00	423.36	148	128	103	2616	0.47 c	
31	215.96	433.26	193	148	120	3185	0.62 a	
32	233.26	467.79	192	135	109	2626	0.65 a	HiResid
33	235.98	473.21	1637	236	182	5252	1.37 b	HiResid
34	238.63	478.51	39652	436	146	3939	1.01 c	HiResid
35	241.76	484.75	13645	322	182	5252	1.35 d	HiResid
36	256.44	514.08	539	171	135	3369	0.99 a	
37	258.85	518.88	778	154	118	2808	0.81 b	
38	270.20	541.54	4622	273	195	5277	1.57 a	HiResid Wide Pk
39	274.77	550.66	359	164	131	3166	0.91 b	HiResid
40	277.44	555.99	1447	176	131	3166	1.02 c	HiResid
41	288.27	577.61	141	100	80	1560	0.51 a	
42	295.22	591.48	22259	337	129	3075	1.05 a	HiResid
43	300.15	601.33	2138	165	113	2563	0.85 b	HiResid
44	323.61	648.15	201	130	104	2189	0.75 a	
45	327.98	656.88	1883	169	119	2627	1.01 b	
46	330.03	660.98	221	148	119	2627	0.97 c	
47	332.51	665.93	149	129	104	2189	0.88 d	
48	338.26	677.40	8216	240	129	2842	1.10 a	
49	340.92	682.72	271	160	129	2842	1.13 b	
50	351.83	704.49	37852	418	126	2694	1.12 a	HiResid
51	387.20	775.11	207	164	133	2793	1.31 a	
52	388.82	778.33	191	116	93	1746	0.89 b	
53	401.77	804.18	337	132	104	2016	1.03 a	HiResid
54	405.08	810.79	290	162	130	2688	1.30 b	HiResid
55	409.40	819.41	973	141	104	2016	1.04 c	HiResid
56	427.28	855.10	115	100	81	1479	0.86 a	
57	454.78	910.00	202	162	131	2668	1.73 a	
58	462.91	926.24	2292	160	106	1949	1.53 a	
59	474.53	949.43	21	74	60	902	0.63 a	NET< CL
60	480.48	961.31	211	102	80	1352	1.01 b	
61	487.10	974.53	228	102	80	1352	1.06 c	
62	504.03	1008.32	70	105	85	1432	1.08 a	NET< CL
63	510.70	1021.63	3383	172	104	1878	1.54 a	
64	533.62	1067.38	174	103	82	1312	1.19 a	
65	562.27	1124.58	291	95	73	1126	1.04 a	
66	580.14	1160.24	358	163	130	2395	2.08 a	
67	583.14	1166.24	11472	245	98	1658	1.42 b	
68	609.23	1218.33	26918	347	92	1481	1.49 a	
69	616.03	1231.90	108	102	82	1246	1.31 a	
70	665.58	1330.81	743	120	88	1335	1.51 a	
71	687.70	1374.97	60	70	57	728	0.81 a	

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PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
72	702.86	1405.23	174	98	78	1246	1.31	a	
73	719.94	1439.33	250	106	83	1279	1.63	a	
74	727.25	1453.93	2558	143	83	1279	1.69	b	
75	742.45	1484.27	110	82	65	913	1.19	a	
76	755.04	1509.39	316	99	76	1122	1.52	a	
77	768.32	1535.90	2431	145	87	1403	1.56	a	HiResid
78	772.28	1543.80	339	90	67	982	1.14	b	HiResid
79	782.32	1563.86	116	60	46	526	0.81	a	
80	785.85	1570.90	941	116	81	1157	1.77	b	
81	794.90	1588.97	1337	121	80	1114	1.81	a	
82	806.06	1611.25	481	92	67	867	1.44	a	
83	831.16	1661.36	153	100	79	1108	1.86	a	
84	835.66	1670.33	398	92	68	906	1.41	b	
85	839.62	1678.23	584	126	96	1410	2.29	c	
86	860.41	1719.74	1273	109	68	856	1.67	a	
87	893.39	1785.57	81	55	42	442	0.87	a	
88	904.24	1807.24	158	82	64	805	1.46	a	
89	911.17	1821.06	8226	203	75	983	1.87	b	
90	933.96	1866.56	1219	109	69	835	1.78	a	
91	958.06	1914.67	58	60	48	494	1.13	a	
92	964.63	1927.79	1568	117	71	847	1.99	b	
93	968.86	1936.24	4581	161	71	847	1.92	c	
94	1000.88	2000.15	417	79	55	616	1.71	a	
95	1052.06	2102.31	113	75	59	654	2.02	a	
96	1069.96	2138.05	18	52	42	418	1.13	a	NET< CL
97	1078.29	2154.68	79	69	54	598	1.72	b	
98	1094.40	2186.83	112	77	61	691	1.97	a	
99	1110.20	2218.38	65	54	42	419	1.11	a	
100	1120.16	2238.26	5320	166	64	736	2.10	a	
101	1155.05	2307.90	603	89	61	668	2.18	a	
102	1207.52	2412.65	102	58	45	426	1.55	a	
103	1237.97	2473.44	2101	117	60	616	2.23	a	
104	1246.05	2489.58	154	77	60	616	2.26	b	
105	1252.83	2503.10	143	96	76	836	3.19	c	
106	1280.88	2559.09	418	82	58	597	2.19	a	
107	1377.38	2751.73	1358	103	59	603	2.35	a	
108	1385.24	2767.42	165	69	53	517	1.93	b	
109	1401.16	2799.20	457	90	65	655	2.74	a	
110	1407.76	2812.38	803	98	65	655	2.77	b	
111	1459.64	2915.96	211	83	64	652	2.57	a	
112	1495.62	2987.77	130	81	64	673	2.42	a	
113	1509.06	3014.59	618	96	67	691	2.83	a	
114	1538.34	3073.04	120	53	40	333	1.53	a	
115	1543.17	3082.69	106	52	40	333	1.49	b	
116	1582.34	3160.89	290	97	75	713	3.80	a	Wide Pk
117	1586.62	3169.43	130	47	33	248	1.27	b	
118	1588.35	3172.89	465	70	45	372	2.05	c	
119	1591.44	3179.04	434	109	83	806	4.27	d	
120	1620.19	3236.44	304	66	46	332	2.55	a	

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PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
121	1630.24	3256.50	366	74	52	394	3.15	b
122	1638.71	3273.42	103	64	50	374	2.89	c
123	1661.05	3318.01	232	62	44	325	2.39	a
124	1729.12	3453.90	931	78	41	261	2.63	a
125	1764.16	3523.84	4303	140	41	251	2.91	a
126	1846.90	3689.00	487	71	46	337	2.55	a
127	1872.38	3739.88	78	60	47	303	3.49	a

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET040625.BKG (0418003-34 Weekly Background)

Bkg.File Detector #: 4

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.67	332	191	154	330	191	154	
3	53.64	350	253	206	349	253	206	
4	63.33	2737	261	197	2733	261	197	
5	67.77	442	180	144	437	180	144	
6	74.83	11749	382	259	11745	383	259	
7	77.13	21461	414	241	21456	414	241	
11	87.20	263	411	337	263	411	337	NET<CL
12	89.91	-7922	384	348	-7922	384	348	NET<CL
13	92.81	10722	376	258	10712	376	258	
20	115.12	611	208	166	610	208	166	
26	186.02	14207	342	202	14199	342	202	
27	199.24	114	188	154	109	188	154	NET<CL
34	238.63	39652	436	146	39646	436	146	
48	338.26	8216	240	129	8215	240	129	
50	351.83	37852	418	126	37848	418	126	
63	510.70	3383	172	104	3344	172	105	
67	583.14	11472	245	98	11470	245	98	
68	609.23	26918	347	92	26915	347	92	
89	911.17	8226	203	75	8225	203	75	
111	1459.64	211	83	64	205	83	64	

041221D04.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-20 GS040614-2 Code: 041221D04A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/01/2004 13:37:27
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.32e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.19e+002 g	Real Time	1881 Sec
Collection Efficiency	1.0000	Spectrum File	.041221D04.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 4 (Detector 4)

Efficiency File: (D04)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[4.98E-03*En^-3.26E+00 + 6.77E+01*En^8.96E-01] 06/21/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	4.69E+02 +- 1.55E+01	. . . .	. . . .	3.92E+13
	63.29		4.04E+02 +- 3.87E+01	5.88E+01	2.92E+01	3.92E+13
	92.50		4.81E+02 +- 1.69E+01	2.33E+01	1.16E+01	3.92E+13
Eu-155	105.31		1.79E+01 +- 2.49E+00	3.88E+00	1.93E+00	4.35E+04
Pb-212	Average:	x	2.35E+02 +- 2.56E+00	. . . .	. . . .	1.67E+04
	115.18		2.13E+02 +- 7.28E+01	1.17E+02	5.82E+01	1.67E+04
	238.63		2.36E+02 +- 2.59E+00	1.75E+00	8.69E-01	1.67E+04
	300.09		2.03E+02 +- 1.57E+01	2.17E+01	1.07E+01	1.67E+04
U-235	Average:	x	2.25E+01 +- 2.92E+00	. . . .	. . . .	6.17E+12
	143.76		2.55E+01 +- 3.74E+00	5.80E+00	2.88E+00	6.17E+12
	163.35		1.67E+01 +- 5.45E+00	8.68E+00	4.29E+00	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
	205.31		2.12E+01 +- 9.11E+00	1.48E+01	7.33E+00	6.17E+12
Th-227	236.00		3.23E+01 +- 4.66E+00	7.25E+00	3.60E+00	1.90E+05
Tl-208	Average:	x	7.10E+01 +- 4.55E+00	. . . .	. . . .	1.27E+14
	277.36		6.32E+01 +- 7.70E+00	1.15E+01	5.72E+00	1.27E+14
	583.14		7.10E+01 +- 1.09E+01	1.74E+01	8.70E+00	1.27E+14
	860.47		7.67E+01 +- 6.58E+00	8.36E+00	4.10E+00	1.27E+14
Pb-214	Average:	x	3.42E+02 +- 3.05E+00	. . . .	. . . .	1.40E+07
	295.22		3.37E+02 +- 5.10E+00	3.94E+00	1.95E+00	1.40E+07
	351.99		3.45E+02 +- 3.81E+00	2.32E+00	1.15E+00	1.40E+07
Ra-228	Average:	x	2.49E+02 +- 4.13E+00	. . . .	. . . .	5.04E+04
	338.40		2.42E+02 +- 7.07E+00	7.70E+00	3.81E+00	5.04E+04
	911.07		2.56E+02 +- 6.31E+00	4.74E+00	2.33E+00	5.04E+04
	968.90		2.46E+02 +- 8.61E+00	7.76E+00	3.81E+00	5.04E+04

041221D04.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)			MDA	Critical Level	Halflife (hrs)
Sb-125	Average:	x	5.43E+00	+-	1.37E+00	. . . .	. . . .	2.43E+04
	427.95		1.59E+00	+-	1.39E+00	2.28E+00	1.12E+00	2.43E+04
	463.51		9.77E+01	+-	6.84E+00	9.14E+00	4.51E+00	2.43E+04
Bi-214	Average:	x	3.23E+02	+-	3.84E+00	. . . .	. . . .	1.40E+07
	609.32		3.21E+02	+-	4.14E+00	2.23E+00	1.10E+00	1.40E+07
	1120.28		3.34E+02	+-	1.04E+01	8.25E+00	4.04E+00	1.40E+07
Nb-94	702.50		1.11E+00	+-	6.27E-01	1.01E+00	4.97E-01	1.78E+08
Bi-212	727.17		2.64E+02	+-	1.48E+01	1.75E+01	8.60E+00	1.67E+04
Cs-134	Average:	x	3.41E+00	+-	5.67E-01	. . . .	. . . .	1.81E+04
	795.76		1.15E+01	+-	1.04E+00	1.39E+00	6.83E-01	1.81E+04
	563.26		1.15E+01	+-	1.75E+01	2.30E+01	1.14E+01	1.81E+04
	604.66	N	-6.62E-03	+-	6.77E-01	1.13E+00B	5.57E-01	1.81E+04
Mn-54	834.81		3.28E+00	+-	7.58E-01	1.15E+00	5.62E-01	7.49E+03
Pa-234m	1001.03		6.06E+02	+-	1.14E+02	1.64E+02	8.03E+01	3.92E+13
Ru-106	Average:	x	5.13E+00	+-	6.73E+00	. . . .	. . . .	8.84E+03
	1050.47		6.50E+01	+-	4.32E+01	6.98E+01	3.41E+01	8.84E+03
	621.84	N	3.65E+00	+-	6.81E+00	1.13E+01b	5.55E+00	8.84E+03
Eu-152	Average:	x	2.46E+00	+-	3.45E+00	. . . .	. . . .	1.17E+05
	1112.07		4.54E+00	+-	3.75E+00	6.08E+00	2.95E+00	1.17E+05
	1408.08	N	-8.66E+00	+-	8.67E+00	1.48E+01r	7.32E+00	1.17E+05
Ag-110M	Average:	x	-3.49E-01	+-	7.64E-01	. . . .	. . . .	6.00E+03
	1384.27		9.15E+00	+-	3.83E+00	6.00E+00	2.93E+00	6.00E+03
	657.75	N	-7.43E-01	+-	7.80E-01	1.33E+00	6.53E-01	6.00E+03
K-40	1460.75		2.24E+01	+-	9.09E+00	1.43E+01	7.02E+00	1.12E+13
Am-241	59.54	N	2.57E+00	+-	3.77E+00	6.22E+00	3.08E+00	3.80E+06
Co-57	122.07	N	-1.19E-02	+-	5.08E-01	8.43E-01	4.18E-01	6.48E+03
Ce-144	133.53	N	-8.32E-01	+-	3.89E+00	6.46E+00	3.21E+00	6.82E+03
Ce-139	165.85	N	1.33E-01	+-	6.15E-01	1.02E+00b	5.05E-01	3.30E+03
Cr-51	320.07	N	4.57E+00	+-	1.76E+01	2.92E+01B	1.45E+01	6.65E+02
I-131	364.48	N	-9.91E+00	+-	6.99E+01	1.17E+02	5.76E+01	1.93E+02
Be-7	477.56	N	-9.45E+00	+-	1.44E+01	2.43E+01R	1.20E+01	1.28E+03
Sb-124	602.71	N	5.48E-02	+-	1.20E+00	2.00E+00	9.87E-01	1.44E+03
Cs-137	661.62	N	-6.71E-01	+-	1.14E+00	1.93E+00R	9.54E-01	2.64E+05
Nb-95	765.82	N	4.99E+00	+-	1.79E+00	2.74E+00R	1.35E+00	1.54E+03
Co-58	810.75	N	1.22E-01	+-	1.06E+00	1.77E+00b	8.70E-01	1.70E+03
Sc-46	889.26	N	-1.93E-01	+-	1.10E+00	1.84E+00B	9.06E-01	2.01E+03
Eu-154	1004.80	N	7.71E+00	+-	4.97E+00	7.80E+00r	3.84E+00	7.45E+04
Fe-59	1099.22	N	-1.27E+00	+-	4.06E+00	6.86E+00r	3.38E+00	1.08E+03
Zn-65	1115.52	N	-4.65E+00	+-	2.46E+00	4.37E+00R	2.15E+00	5.85E+03
Co-56	1238.28	N	-4.37E+00	+-	5.47E+00	9.20E+00r	4.57E+00	1.86E+03
Na-22	1274.54	N	5.97E-01	+-	7.48E-01	1.23E+00B	6.01E-01	2.28E+04
Co-60	1332.51	N	-5.63E-01	+-	8.23E-01	1.41E+00	6.90E-01	4.62E+04
Al-26	1808.65	N	-3.54E-01	+-	7.64E-01	1.32E+00	6.39E-01	6.31E+09

MEASURED TOTAL: 2.69E+03 +- 2.27E+02 pCi/g

041221D04.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.67	95.31	330 Pb 210	191	154	5275	0.58	Unknown
2	48.52	99.00	16	119	98	2638	0.35	Deleted
3	53.64	109.22	349	253	206	7807	0.94	Unknown
5	67.77	137.45	437	180	144	5124	0.52	Unknown
6	74.83	151.54	11745 Pb	383	259	12413	1.10	Unknown
7	77.13	156.11	21456 Xe-1	414	241	10700	0.81	Unknown
8	79.38	160.62	646	254	205	8470	1.03	Unknown
9	81.10	164.04	-2827	308	268	13291	10.99	Deleted
10	84.02	169.87	3971 Pb Xe-1	331	252	10799	1.16	Unknown
11	87.20	176.22	263	411	337	19390	0.05	Deleted
12	89.91	181.64	-7922	384	348	22373	10.17	Deleted
14	94.72	191.23	318	295	241	9870	0.36	Unknown
15	98.53	198.84	-1106	296	249	10598	2.43	Deleted
16	99.61	201.00	562	191	152	5152	0.72	1120DEsc
18	109.00	219.74	1012 Ac 228	323	261	10040	1.42	Unknown
19	112.42	226.57	596	459	375	15617	2.36	Unknown
21	122.53	246.74	130	172	140	4369	0.58	Deleted
22	129.18	260.03	2123 Ac 228	198	144	4609	0.73	Unknown
24	154.19	309.96	1312 ↓	188	143	4542	0.72	Unknown
26	186.02	373.49	14199 Ra 226/U235	342	202	6937	1.08	SPLIT
27	199.24	399.88	109	188	154	4758	0.75	Deleted
29	209.22	419.81	3648 Ac 228	238	168	5232	0.91	Unknown
30	211.00	423.36	148	128	103	2616	0.47	Unknown
31	215.96	433.26	193	148	120	3185	0.62	1238DEsc
32	233.26	467.79	192	135	109	2626	0.65	Unknown
35	241.76	484.75	13645 Pb 214	322	182	5252	1.35	Unknown
36	256.44	514.08	539 Ac 228	171	135	3369	0.99	Unknown
37	258.85	518.88	778	154	118	2808	0.81	1281DEsc
38	270.20	541.54	4622 Ac 228	273	195	5277	1.57	Unknown
39	274.77	550.66	359	164	131	3166	0.91	Unknown
41	288.27	577.61	141	100	80	1561	0.51	Unknown
44	323.61	648.15	201	130	104	2189	0.75	Unknown
45	327.98	656.88	1883 Ac 228	169	119	2627	1.01	Unknown
46	330.03	660.98	221	148	119	2627	0.97	Unknown
47	332.51	665.93	149	129	104	2189	0.88	Unknown
49	340.92	682.72	271	160	129	2842	1.13	Unknown
51	387.20	775.11	207	164	133	2793	1.31	1408DEsc
52	388.82	778.33	191	116	93	1746	0.89	Unknown
53	401.77	804.18	337	132	104	2016	1.03	Unknown
54	405.08	810.79	290	162	130	2688	1.30	Unknown
55	409.40	819.41	973 Ac 228	141	104	2016	1.04	Unknown
57	454.78	910.00	202	162	131	2668	1.73	Unknown
59	474.53	949.43	21	74	60	902	0.63	Deleted
60	480.48	961.31	211	102	80	1352	1.01	Unknown
61	487.10	974.53	228	102	80	1352	1.06	1509DEsc
62	504.03	1008.32	70	105	85	1432	1.08	Deleted
63	510.70	1021.63	3344 Am Peak	172	105	1878	1.54	Unknown
64	533.62	1067.38	174	103	82	1312	1.19	Unknown
65	562.27	1124.58	291	95	73	1126	1.04	SPLIT

041221D04.SPC Analyzed by

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
66	580.14	1160.24	358	163	130	2395	2.08	Unknown
67	583.14	1166.24	1147071 208	245	98	1658	1.42	SPLIT
69	616.03	1231.90	108	102	82	1246	1.31	1639DEsc
70	665.58	1330.81	743 Bi 214	120	88	1335	1.51	Unknown
71	687.70	1374.97	60	70	57	728	0.81	Unknown
73	719.94	1439.33	250	106	83	1279	1.63	Unknown
75	742.45	1484.27	110	82	65	913	1.19	1764DEsc
76	755.04	1509.39	316 Ac 228	99	76	1122	1.52	Unknown
77	768.32	1535.90	2431 Bi 214	145	87	1403	1.56	1281SEsc
78	772.28	1543.80	339	90	67	982	1.14	Unknown
79	782.32	1563.86	116	60	46	526	0.81	Unknown
80	785.85	1570.90	941 Ac 228	116	81	1157	1.77	Unknown
82	806.06	1611.25	481 Ac 228	92	67	867	1.44	Unknown
83	831.16	1661.36	153	100	79	1108	1.86	Unknown
85	839.62	1678.23	584 Ac 228	126	96	1410	2.29	Unknown
87	893.39	1785.57	81	55	42	442	0.87	Unknown
88	904.24	1807.24	158	82	64	805	1.46	Unknown
90	933.96	1866.56	1219 Bi 214	109	69	835	1.78	Unknown
91	958.06	1914.67	58	60	48	494	1.13	Unknown
92	964.63	1927.79	1568 Ac 228	117	71	847	1.99	Unknown
96	1069.96	2138.05	18	52	42	418	1.13	Deleted
97	1078.29	2154.68	79	69	54	598	1.72	1588SEsc
98	1094.40	2186.83	112	77	61	691	1.97	Unknown
101	1155.05	2307.90	603 Bi 214	89	61	668	2.18	Unknown
102	1207.52	2412.65	102	58	45	426	1.55	Unknown
103	1237.97	2473.44	2101 Bi 214	117	60	616	2.23	Unknown
104	1246.05	2489.58	154	77	60	616	2.26	Unknown
105	1252.83	2503.10	143	96	76	836	3.19	1764SEsc
106	1280.88	2559.09	418 Bi 214	82	58	597	2.19	Unknown
107	1377.38	2751.73	1358 Bi 214	103	59	603	2.35	Unknown
109	1401.16	2799.20	457	90	65	655	2.74	Unknown
110	1407.76	2812.38	803	98	65	655	2.77	Unknown
112	1495.62	2987.77	130	81	64	673	2.42	Unknown
113	1509.06	3014.59	618 Bi 214	96	67	691	2.83	Unknown
114	1538.34	3073.04	120	53	40	333	1.53	Unknown
115	1543.17	3082.69	106	52	40	333	1.49	Unknown
116	1582.34	3160.89	290	97	75	713	3.80	Unknown
117	1586.62	3169.43	130	47	33	248	1.27	Unknown
118	1588.35	3172.89	465 Ac 228	70	45	372	2.05	Unknown
119	1591.44	3179.04	434 Tl 208	109	83	806	4.27	Unknown
120	1620.19	3236.44	304	66	46	332	2.55	Unknown
121	1630.24	3256.50	366 Ac 228	74	53	394	3.15	Unknown
122	1638.71	3273.42	103	64	50	374	2.89	Unknown
123	1661.05	3318.01	232 Bi 214	62	44	325	2.39	Unknown
124	1729.12	3453.90	931 Bi 214	79	41	261	2.63	Unknown
125	1764.16	3523.84	4303 Bi 214	140	41	251	2.91	Unknown
126	1846.90	3689.00	487	71	46	337	2.55	Unknown
127	1872.38	3739.88	78	60	47	303	3.49	Unknown
129	583.14	1166.24	115	3522	98	1658	1.42	1094SEsc

041221D04.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
131	562.27	1124.58	113	574	73	1126	1.04	1582DEsc
133	186.02	373.49	7907	3858	202	6937	1.08	1208DEsc

041033D03.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-21 GS040611-1 Code: 041033D03A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 14:15:17
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.11E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.04E+000 g	Real Time	3667 Sec
Collection Efficiency	1.0000	Spc. File	.041033D03.SPC

Detector #: 3 (Detector 3)

Energy(keV) = -0.83 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/22/2004
FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.57	94.73	77	48	36	267	0.81 a	
2	63.25	128.09	56	54	42	363	0.76 a	
3	74.80	151.17	387	70	48	422	1.04 a	HiResid
4	77.11	155.78	565	70	42	352	0.81 b	HiResid
5	81.24	164.05	41	52	42	352	0.89 c	NET< CL HiResid
6	84.04	169.63	99	61	48	422	0.92 d	HiResid
7	87.20	175.96	208	71	54	492	1.07 e	HiResid
8	89.98	181.52	173	64	48	422	0.98 f	HiResid
9	93.02	187.58	282	67	48	422	1.04 g	HiResid
10	99.82	201.17	39	61	49	413	1.19 a	NET< CL
11	105.36	212.25	50	76	61	558	1.53 a	NET< CL
12	122.11	245.74	54	75	61	512	1.57 a	NET< CL Wide Pk
13	129.38	260.27	96	55	43	335	0.94 a	
14	143.76	289.02	48	57	45	380	0.96 a	
15	154.42	310.32	23	113	93	867	2.63 a	NET< CL Wide Pk
16	186.07	373.59	712	77	45	352	1.20 a	
17	209.36	420.14	135	50	36	240	0.91 a	
18	238.80	478.98	980	76	36	222	1.12 a	
19	241.90	485.17	390	66	44	285	1.51 b	
20	270.34	542.03	174	57	41	283	1.55 a	
21	295.37	592.05	671	64	31	186	1.17 a	

041033D03.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
22	300.18	601.68	49	36	28	160	0.91 b	
23	328.03	657.34	137	39	26	133	1.17 a	
24	338.42	678.11	356	50	27	145	1.18 a	
25	351.99	705.23	1138	75	27	136	1.35 a	
26	409.64	820.47	28	23	17	68	0.69 a	
27	463.17	927.47	106	31	19	73	1.18 a	
28	511.07	1023.23	161	41	26	121	1.87 a	
29	558.74	1118.51	23	21	15	59	0.78 a	
30	583.35	1167.70	292	42	20	79	1.36 a	
31	609.41	1219.79	827	63	22	93	1.48 a	
32	727.11	1455.07	61	27	18	61	1.43 a	
33	768.35	1537.48	56	26	18	65	1.34 a	
34	794.72	1590.19	59	29	20	67	1.95 a	
35	836.02	1672.76	19	29	23	91	2.31 a	NET< CL
36	860.66	1722.00	33	20	14	38	1.73 a	
37	911.42	1823.47	387	44	16	47	1.76 a	
38	934.52	1869.64	35	18	11	25	1.35 a	
39	964.89	1930.34	60	26	18	55	2.12 a	
40	969.03	1938.64	201	33	15	43	1.67 b	
41	1120.27	2240.94	144	28	13	25	2.57 a	
42	1238.36	2476.99	50	21	13	32	2.02 a	
43	1377.34	2754.78	38	21	14	31	2.40 a	
44	1588.59	3177.05	25	16	10	20	2.08 a	
45	1729.54	3458.79	30	16	10	14	3.16 a	
46	1764.71	3529.09	120	26	11	18	2.90 a	

041033D03.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET030618.BKG (0418003-23 Weekly Background)

Bkg.File Detector #: 3

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.57	77	48	36	68	49	38	
2	63.25	56	54	42	47	54	43	
4	77.11	565	70	42	557	70	43	
5	84.04	99	61	48	91	62	49	
6	87.20	208	71	54	205	72	54	
8	93.02	282	67	48	246	68	50	
10	143.76	48	57	45	44	57	46	NET<CL
11	186.07	712	77	45	694	77	47	
13	238.80	980	76	36	967	77	37	
16	295.37	671	64	31	665	64	31	
19	338.42	356	50	27	352	51	28	
20	351.99	1138	75	27	1130	75	28	
23	511.07	161	41	26	68	43	33	
24	558.74	23	21	15	16	22	17	NET<CL
25	583.35	292	42	20	284	44	23	
26	609.41	827	63	22	821	64	23	
33	911.42	387	44	16	380	44	17	
42	1764.71	120	26	11	118	26	12	

041033D03.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-21 GS040611-1 Code: 041033D03A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 14:15:17
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.11e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	3600 Sec
Sample Size	1.04e+000 g	Real Time	3667 Sec
Collection Efficiency	1.0000	Spectrum File	.041033D03.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 3 (Detector 3)

Efficiency File: (D03)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[5.26E-03*En^-3.50E+00 + 1.28E+02*En^8.28E-01] 04/17/2004

Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	1.23E+03 +- 3.33E+02	. . . .	. . . .	3.92E+13
	63.29		8.32E+02 +- 9.68E+02	1.59E+03	7.71E+02	3.92E+13
	92.50		1.28E+03 +- 3.54E+02	5.31E+02	2.59E+02	3.92E+13
U-235	143.76	N	8.83E+01 +- 1.15E+02	1.89E+02	9.18E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	Average:	x	6.71E+02 +- 5.31E+01	. . . .	. . . .	1.67E+04
	238.63		6.73E+02 +- 5.35E+01	5.38E+01	2.59E+01	1.67E+04
	300.09		5.40E+02 +- 3.99E+02	6.35E+02	3.03E+02	1.67E+04
Pb-214	Average:	x	1.19E+03 +- 6.51E+01	. . . .	. . . .	1.40E+07
	295.22		1.18E+03 +- 1.13E+02	1.16E+02	5.55E+01	1.40E+07
	351.99		1.19E+03 +- 7.95E+01	6.21E+01	2.96E+01	1.40E+07
Ra-228	Average:	x	1.22E+03 +- 9.71E+01	. . . .	. . . .	5.04E+04
	338.40		1.20E+03 +- 1.72E+02	1.99E+02	9.50E+01	5.04E+04
	911.07		1.28E+03 +- 1.48E+02	1.22E+02	5.65E+01	5.04E+04
	968.90		1.16E+03 +- 1.93E+02	1.84E+02	8.40E+01	5.04E+04
Tl-208	Average:	x	2.00E+02 +- 2.97E+01	. . . .	. . . .	1.27E+14
	583.14		1.99E+02 +- 3.05E+01	3.37E+01	1.59E+01	1.27E+14
	860.47		2.15E+02 +- 1.34E+02	2.01E+02	9.18E+01	1.27E+14
Bi-214	Average:	x	9.71E+02 +- 1.76E+02	. . . .	. . . .	1.40E+07
	609.32		9.71E+02 +- 4.52E+02	7.07E+02	3.52E+02	1.40E+07
	1120.28		9.71E+02 +- 1.92E+02	1.88E+02	8.51E+01	1.40E+07
Bi-212	727.17		6.84E+02 +- 3.00E+02	4.31E+02	2.00E+02	1.67E+04
Cs-134	Average:	x	2.55E+01 +- 1.48E+01	. . . .	. . . .	1.81E+04
	795.76		5.54E+01 +- 2.68E+01	3.99E+01	1.87E+01	1.81E+04
	604.66	N	1.24E+01 +- 1.78E+01	2.96E+01B	1.39E+01	1.81E+04

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041033D03.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Co-56	1238.28		1.23E+02 +- 5.25E+01	7.16E+01	3.25E+01	1.86E+03
Am-241	59.54	N	4.16E+01 +- 1.24E+02	2.08E+02B	1.01E+02	3.80E+06
Eu-155	105.31	N	1.21E+02 +- 6.44E+01	1.02E+02	4.92E+01	4.35E+04
Co-57	122.07	N	2.07E+01 +- 1.51E+01	2.42E+01	1.17E+01	6.48E+03
Ce-144	133.53	N	1.32E+01 +- 1.12E+02	1.89E+02	9.15E+01	6.82E+03
Ce-139	165.85	N	-9.96E+00 +- 2.02E+01	3.48E+01	1.69E+01	3.30E+03
Th-227	236.00	N	1.71E+01 +- 1.67E+02	2.79E+02R	1.36E+02	1.90E+05
Pa-231	302.67	N	-1.51E+01 +- 8.27E+02	1.40E+03r	6.81E+02	7.87E+05
Cr-51	320.07	N	-8.03E+01 +- 4.17E+02	7.25E+02	3.47E+02	6.65E+02
I-131	364.48	N	-3.41E+02 +- 7.68E+02	1.37E+03	6.51E+02	1.93E+02
Sb-125	427.95	N	2.13E+01 +- 5.20E+01	8.77E+01	4.17E+01	2.43E+04
Be-7	477.56	N	-1.12E+02 +- 2.54E+02	4.54E+02	2.15E+02	1.28E+03
Sb-124	602.71	N	-1.05E+00 +- 2.91E+01	5.08E+01B	2.40E+01	1.44E+03
Ru-106	621.84	N	-3.47E+01 +- 1.75E+02	3.11E+02	1.46E+02	8.84E+03
Ag-110M	657.75	N	1.19E+01 +- 1.92E+01	3.20E+01	1.49E+01	6.00E+03
Cs-137	661.62	N	-3.17E+01 +- 2.02E+01	3.92E+01	1.85E+01	2.64E+05
Nb-94	702.50	N	1.25E+01 +- 1.92E+01	3.20E+01	1.51E+01	1.78E+08
Nb-95	765.82	N	-3.02E+02 +- 4.71E+02	7.80E+02P	3.88E+02	1.54E+03
Co-58	810.75	N	-1.30E+01 +- 2.74E+01	5.03E+01	2.35E+01	1.70E+03
Mn-54	834.81	N	2.66E+01 +- 2.23E+01	3.55E+01	1.65E+01	7.49E+03
Sc-46	889.26	N	-2.21E+01 +- 2.53E+01	4.83E+01	2.25E+01	2.01E+03
Pa-234m	1001.03	N	-1.05E+03 +- 3.03E+03	5.58E+03	2.58E+03	3.92E+13
Eu-154	1004.80	N	4.12E+01 +- 9.96E+01	1.71E+02	7.83E+01	7.45E+04
Fe-59	1099.22	N	-2.10E+01 +- 6.05E+01	1.13E+02	5.18E+01	1.08E+03
Zn-65	1115.52	N	-4.75E+02 +- 1.91E+02	3.38E+02P	1.66E+02	5.85E+03
Na-22	1274.54	N	-1.58E+01 +- 1.97E+01	3.85E+01	1.77E+01	2.28E+04
Co-60	1332.51	N	2.98E+00 +- 2.07E+01	3.68E+01	1.68E+01	4.62E+04
Eu-152	1408.08	N	6.62E+01 +- 1.23E+02	2.08E+02	9.60E+01	1.17E+05
K-40	1460.75	N	3.33E+02 +- 2.41E+02	3.71E+02	1.70E+02	1.12E+13
Al-26	1808.65	N	-9.09E+00 +- 2.23E+01	4.27E+01	1.93E+01	6.31E+09

MEASURED TOTAL: 7.13E+03 +- 2.32E+03 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.57	94.73	68	49	38	267	0.81	Unknown
3	74.80	151.17	387	70	48	422	1.04	Unknown
4	77.11	155.78	557	70	43	352	0.81	Unknown
5	84.04	169.63	91	62	49	422	0.92	Unknown
6	87.20	175.96	205	72	54	492	1.07	Unknown
7	89.98	181.52	173	64	48	422	0.98	Unknown
9	129.38	260.27	96	55	43	335	0.94	Unknown
12	209.36	420.14	135	50	36	240	0.91	Unknown
14	241.90	485.17	390	66	44	285	1.51	Unknown
15	270.34	542.03	174	57	41	283	1.55	Unknown

041033D03.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
18	328.03	657.34	137	39	26	133	1.17	Unknown
21	409.64	820.47	28	23	17	68	0.69	Unknown
22	463.17	927.47	106	31	19	73	1.18	Unknown
23	511.07	1023.23	68	43	33	121	1.87	Unknown
24	558.74	1118.51	16	22	17	59	0.78	Deleted
26	609.41	1219.79	821	64	23	93	1.48	SPLIT
27	609.41	1219.79	730	339	264	93	1.48	1120SEsc
30	768.35	1537.48	56	26	18	65	1.34	Unknown
34	934.52	1869.64	35	18	11	25	1.35	Unknown
35	964.89	1930.34	60	26	18	55	2.12	Unknown
39	1377.34	2754.78	38	21	14	31	2.40	Unknown
40	1588.59	3177.05	25	16	10	20	2.08	Unknown
41	1729.54	3458.79	30	16	10	14	3.16	Unknown
42	1764.71	3529.09	118	26	12	18	2.90	Unknown
44	609.41	1219.79	91	691	23	93	1.48	1120SEsc

041401D01.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-22 GS040611-1 Code: 041401D01B

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 14:39:57
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.11E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.53E+000 g	Real Time	1855 Sec
Collection Efficiency	1.0000	Spc. File	.041401D01.SPC

Detector #: 1 (Detector 1)

Energy(keV)= -1.07 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/22/2004
FWHM(keV) = 0.88 + 0.103*En +-3.12E-03*En^2 + 4.90E-05*En^3 06/16/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	76.29	154.55	271	99	76	695	3.50 a	Wide Pk
2	87.19	176.32	118	47	34	235	1.28 a	
3	92.93	187.80	138	60	46	353	1.93 b	
4	185.86	373.46	285	54	34	217	1.64 a	
5	198.33	398.39	59	42	32	206	1.60 a	
6	209.21	420.12	38	32	25	142	1.12 a	
7	238.68	479.00	453	60	35	212	2.06 a	
8	241.72	485.08	162	47	33	196	1.90 b	
9	295.16	591.83	267	47	28	155	1.72 a	
10	338.34	678.11	122	33	20	93	1.39 a	
11	351.85	705.10	605	57	23	102	1.88 a	
12	511.21	1023.48	164	40	25	99	2.78 a	
13	583.23	1167.37	152	34	19	59	2.38 a	
14	609.29	1219.44	462	49	20	73	1.99 a	
15	911.40	1823.03	189	35	18	53	2.54 a	
16	969.00	1938.09	80	29	19	60	2.33 a	
17	1120.03	2239.83	108	27	14	30	2.74 a	
18	1237.81	2475.15	56	19	10	19	1.89 a	
19	1377.15	2753.55	18	22	17	37	3.53 a	
20	1461.49	2922.05	63	21	11	20	2.70 a	
21	1729.81	3458.12	34	17	10	14	3.10 a	
22	1764.59	3527.62	111	24	9	12	3.01 a	

041401D01.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET010618.BKG (0418003-21 Weekly Background)

Bkg.File Detector #: 1

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
3	92.93	138	60	46	110	61	47	
4	185.86	285	54	34	260	54	36	
5	198.33	59	42	32	39	42	33	
7	238.68	453	60	35	436	60	36	
9	295.16	267	47	28	265	47	28	
10	338.34	122	33	20	119	34	21	
11	351.85	605	57	24	593	57	25	
12	511.21	164	40	25	41	42	33	
13	583.23	152	34	19	145	34	20	
14	609.29	462	49	20	433	50	23	
15	911.40	189	35	18	177	35	19	
16	969.00	80	29	19	73	29	20	
17	1120.03	108	27	14	105	27	15	
19	1377.15	18	22	17	16	22	17	NET<CL
20	1461.49	63	21	11	16	22	17	NET<CL
22	1764.59	111	24	9	105	24	10	

041401D01.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-22 GS040611-1 Code: 041401D01B

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 14:39:57
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.11e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.53e+000 g	Real Time	1855 Sec
Collection Efficiency	1.0000	Spectrum File	.041401D01.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 1 (Detector 1)

Efficiency File: (D01)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[7.08E-03*En^-3.08E+00 + 3.40E+01*En^6.39E-01] 06/17/2004

Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Th-234	92.50		3.56E+02	+- 1.98E+02	3.15E+02	1.53E+02	3.92E+13
U-235	143.76	N	6.08E+01	+- 5.57E+01	9.05E+01	4.37E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	. . . .	6.17E+12
Pb-212	238.63		1.47E+02	+- 2.03E+01	2.50E+01	1.20E+01	1.67E+04
Pb-214	Average:x		2.56E+02	+- 2.19E+01	. . . .	. . . .	1.40E+07
	295.22		2.15E+02	+- 3.84E+01	4.80E+01	2.29E+01	1.40E+07
	351.99		2.76E+02	+- 2.67E+01	2.46E+01	1.17E+01	1.40E+07
Ra-228	Average:x		1.91E+02	+- 2.93E+01	. . . .	. . . .	5.04E+04
	338.40		1.82E+02	+- 5.14E+01	6.87E+01	3.23E+01	5.04E+04
	911.07		2.18E+02	+- 4.38E+01	5.10E+01	2.38E+01	5.04E+04
	968.90		1.53E+02	+- 6.13E+01	8.78E+01	4.11E+01	5.04E+04
Tl-208	583.14		4.04E+01	+- 9.62E+00	1.21E+01	5.66E+00	1.27E+14
Bi-214	Average:x		2.32E+02	+- 2.46E+01	. . . .	. . . .	1.40E+07
	609.32		2.29E+02	+- 2.66E+01	2.61E+01	1.23E+01	1.40E+07
	1120.28		2.49E+02	+- 6.51E+01	7.77E+01	3.57E+01	1.40E+07
Co-56	1238.28		4.80E+01	+- 1.66E+01	1.96E+01	8.66E+00	1.86E+03
K-40	1460.75	N	6.12E+01	+- 8.37E+01	1.39E+02	6.42E+01	1.12E+13
Am-241	59.54	N	-1.17E+00	+- 6.20E+01	1.06E+02	5.11E+01	3.80E+06
Eu-155	105.31	N	-2.89E+00	+- 3.21E+01	5.50E+01	2.65E+01	4.35E+04
Co-57	122.07	N	-2.65E-06	+- 7.42E+00	1.27E+01	6.11E+00	6.48E+03
Ce-144	133.53	N	-2.53E+01	+- 6.12E+01	1.06E+02	5.12E+01	6.82E+03
Ce-139	165.85	N	1.65E+01	+- 9.06E+00	1.42E+01	6.85E+00	3.30E+03
Th-227	236.00	N	-3.33E+02	+- 8.30E+01	1.67E+02R	8.19E+01	1.90E+05
Pa-231	302.67	N	5.50E+01	+- 2.52E+02	4.28E+02b	2.05E+02	7.87E+05
Cr-51	320.07	N	-9.83E+01	+- 1.71E+02	3.05E+02	1.45E+02	6.65E+02

041401D01.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
I-131	364.48	N	-1.34E+01	+- 3.41E+02	5.94E+02	2.81E+02	1.93E+02
Sb-125	427.95	N	-1.53E+01	+- 1.97E+01	3.59E+01	1.70E+01	2.43E+04
Be-7	477.56	N	-6.40E+01	+- 9.99E+01	1.82E+02	8.59E+01	1.28E+03
Sb-124	602.71	N	-7.15E+00	+- 1.40E+01	2.48E+01B	1.18E+01	1.44E+03
Cs-134	604.66	N	9.99E+00	+- 6.57E+01	1.09E+02P	5.39E+01	1.81E+04
Ru-106	621.84	N	-6.21E+01	+- 7.44E+01	1.37E+02	6.48E+01	8.84E+03
Ag-110M	657.75	N	-4.37E+00	+- 7.69E+00	1.40E+01	6.60E+00	6.00E+03
Cs-137	661.62	N	-3.17E+00	+- 7.73E+00	1.39E+01	6.56E+00	2.64E+05
Nb-94	702.50	N	1.36E+00	+- 8.01E+00	1.38E+01	6.51E+00	1.78E+08
Bi-212	727.17	N	5.18E+01	+- 1.12E+02	1.89E+02	8.88E+01	1.67E+04
Nb-95	765.82	N	1.39E+01	+- 1.27E+01	2.04E+01	9.56E+00	1.54E+03
Co-58	810.75	N	5.06E+00	+- 1.15E+01	1.96E+01	9.16E+00	1.70E+03
Mn-54	834.81	N	2.30E+00	+- 8.73E+00	1.50E+01	7.03E+00	7.49E+03
Sc-46	889.26	N	-7.02E+00	+- 8.66E+00	1.66E+01	7.70E+00	2.01E+03
Pa-234m	1001.03	N	5.11E+02	+- 1.20E+03	2.05E+03	9.51E+02	3.92E+13
Eu-154	1004.80	N	2.56E+01	+- 3.76E+01	6.26E+01	2.88E+01	7.45E+04
Fe-59	1099.22	N	8.91E+00	+- 2.43E+01	4.18E+01	1.92E+01	1.08E+03
Zn-65	1115.52	N	-5.37E+00	+- 2.60E+01	4.60E+01R	2.19E+01	5.85E+03
Na-22	1274.54	N	5.37E+00	+- 6.64E+00	1.09E+01	4.90E+00	2.28E+04
Co-60	1332.51	N	-7.53E+00	+- 8.35E+00	1.60E+01	7.45E+00	4.62E+04
Eu-152	1408.08	N	2.78E+01	+- 4.33E+01	7.24E+01	3.35E+01	1.17E+05
Al-26	1808.65	N	-2.80E+00	+- 7.35E+00	1.40E+01	6.35E+00	6.31E+09

MEASURED TOTAL: 2.13E+03 +- 2.26E+03 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	76.29	154.55	271	99	76	695	3.50	Unknown
2	87.19	176.32	118	47	34	235	1.28	Unknown
5	198.33	398.39	39	42	33	206	1.60	Unknown
6	209.21	420.12	38	32	25	142	1.12	Unknown
8	241.72	485.08	162	47	33	196	1.90	Unknown
12	511.21	1023.48	41	42	33	99	2.78	Unknown
19	1377.15	2753.55	16	22	17	37	3.53	Deleted
21	1729.81	3458.12	34	17	10	14	3.10	Unknown
22	1764.59	3527.62	105	24	10	12	3.01	Unknown

040955D07.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-23 GS040611-1 Code: 040955D07A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 14:40:09
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.11E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.16E+000 g	Real Time	1813 Sec
Collection Efficiency	1.0000	Spc. File	.040955D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.16 + 0.501*Ch + 2.43E-08*Ch^2 + 3.83E-11*Ch^3 06/22/2004
FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.49	97.14	81	28	17	61	0.81	a
2	74.87	153.82	87	32	22	93	0.75	a
3	76.99	158.05	128	35	22	93	0.84	b
4	83.88	171.82	36	27	20	75	1.00	a
5	87.12	178.28	31	27	20	75	1.06	b
6	89.82	183.67	33	27	20	75	1.05	c
7	92.84	189.71	54	31	23	88	1.16	d
8	186.04	375.81	106	31	20	61	1.26	a
9	209.12	421.91	18	16	12	30	0.63	a
10	238.58	480.71	96	27	16	50	0.86	a
11	295.10	593.57	74	22	12	23	1.15	a
12	338.39	680.01	28	18	12	25	0.97	a
13	351.97	707.13	133	28	13	29	0.95	a
14	511.61	1025.83	33	19	12	23	1.80	a
15	583.23	1168.80	23	14	8	14	1.01	a
16	609.43	1221.10	86	21	9	13	1.64	a
17	911.27	1823.43	18	12	7	10	1.25	a

040955D07.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET070618.BKG (0418003-27 Weekly Background)

Bkg.File Detector #: 7

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.49	81	28	17	66	28	19	
2	74.87	87	32	22	84	33	22	
3	76.99	128	35	22	126	35	22	
4	83.88	36	27	20	31	28	21	
5	87.12	31	27	20	29	27	21	
7	92.84	54	31	23	38	32	24	
8	186.04	106	31	20	98	32	20	
10	238.58	96	27	16	88	28	17	
11	295.10	74	22	12	73	23	12	
13	351.97	133	28	13	130	28	13	
14	511.61	33	19	12	-1	20	17	NET<CL
15	583.23	23	14	8	20	14	9	
16	609.43	86	21	9	84	22	9	
17	911.27	18	12	7	17	12	7	

040955D07.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-23 GS040611-1 Code: 040955D07A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/22/2004 14:40:09
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.11e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.16e+000 g	Real Time	1813 Sec
Collection Efficiency	1.0000	Spectrum File	.040955D07.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 7 (Detector 7)

Efficiency File: (D07)(Sh01).EFF (Geo 1 Eff CaL)

Eff.=1/[4.38E-01*En^-1.35E+00 + 1.62E+02*En^9.38E-01] 01/23/2004

Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	92.50		2.54E+02 +- 2.09E+02	3.34E+02	1.58E+02	3.92E+13
U-235	143.76	N	1.91E+01 +- 8.55E+01	1.48E+02	6.89E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		1.26E+02 +- 3.95E+01	5.17E+01	2.39E+01	1.67E+04
Pb-214	Average:x		2.79E+02 +- 4.90E+01	. . . .	. . . .	1.40E+07
	295.22		2.67E+02 +- 8.22E+01	9.83E+01	4.42E+01	1.40E+07
	351.99		2.86E+02 +- 6.11E+01	6.37E+01	2.89E+01	1.40E+07
Ra-228	Average:x		1.56E+02 +- 7.44E+01	. . . .	. . . .	5.04E+04
	338.40		1.97E+02 +- 1.25E+02	1.84E+02	8.26E+01	5.04E+04
	911.07		1.33E+02 +- 9.28E+01	1.34E+02	5.68E+01	5.04E+04
Tl-208	583.14		3.11E+01 +- 2.14E+01	3.13E+01	1.36E+01	1.27E+14
Bi-214	609.32		2.43E+02 +- 6.24E+01	6.24E+01	2.73E+01	1.40E+07
Am-241	59.54	N	-3.30E+00 +- 2.92E+01	5.15E+01	2.43E+01	3.80E+06
Eu-155	105.31	N	7.76E+00 +- 3.40E+01	5.94E+01	2.73E+01	4.35E+04
Co-57	122.07	N	3.92E+00 +- 1.11E+01	1.90E+01	8.79E+00	6.48E+03
Ce-144	133.53	N	5.31E+01 +- 7.44E+01	1.23E+02	5.62E+01	6.82E+03
Ce-139	165.85	N	3.57E+00 +- 1.55E+01	2.68E+01	1.24E+01	3.30E+03
Th-227	236.00	N	-4.77E+00 +- 1.02E+02	1.82E+02R	8.45E+01	1.90E+05
Pa-231	302.67	N	-5.19E+00 +- 6.02E+02	1.08E+03	4.96E+02	7.87E+05
Cr-51	320.07	N	1.07E+02 +- 3.61E+02	6.35E+02	2.85E+02	6.65E+02
I-131	364.48	N	-3.47E+02 +- 7.29E+02	1.43E+03	6.41E+02	1.93E+02
Sb-125	427.95	N	1.79E+01 +- 4.03E+01	7.03E+01	3.06E+01	2.43E+04
Be-7	477.56	N	-1.85E+01 +- 2.31E+02	4.35E+02	1.92E+02	1.28E+03
Sb-124	602.71	N	0.00E+00 +- 2.59E+01	4.88E+01	2.13E+01	1.44E+03
Cs-134	604.66	N	2.84E+00 +- 1.60E+01	2.94E+01B	1.28E+01	1.81E+04

040955D07.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Ru-106	621.84	N	4.54E+01	+- 1.74E+02	3.14E+02	1.36E+02	8.84E+03
Ag-110M	657.75	N	1.97E+01	+- 1.67E+01	2.44E+01	9.86E+00	6.00E+03
Cs-137	661.62	N	-1.36E+01	+- 1.87E+01	3.92E+01	1.73E+01	2.64E+05
Nb-94	702.50	N	-5.06E+00	+- 1.96E+01	3.78E+01	1.68E+01	1.78E+08
Bi-212	727.17	N	1.25E+02	+- 3.29E+02	5.77E+02	2.55E+02	1.67E+04
Nb-95	765.82	N	-2.38E+00	+- 3.22E+01	6.09E+01	2.68E+01	1.54E+03
Co-58	810.75	N	-1.29E+01	+- 2.30E+01	5.01E+01	2.13E+01	1.70E+03
Mn-54	834.81	N	2.38E+00	+- 1.85E+01	3.49E+01	1.48E+01	7.49E+03
Sc-46	889.26	N	0.00E+00	+- 2.22E+01	4.41E+01	1.83E+01	2.01E+03
Pa-234m	1001.03	N	1.08E+03	+- 2.96E+03	5.39E+03	2.21E+03	3.92E+13
Eu-154	1004.80	N	-7.15E+01	+- 8.92E+01	2.08E+02	8.77E+01	7.45E+04
Fe-59	1099.22	N	-3.32E+00	+- 4.94E+01	1.06E+02	4.15E+01	1.08E+03
Zn-65	1115.52	N	-1.90E+01	+- 6.10E+01	1.20E+02	5.28E+01	5.85E+03
Co-56	1238.28	N	5.78E+01	+- 5.17E+01	7.57E+01	3.00E+01	1.86E+03
Na-22	1274.54	N	-2.75E+01	+- 1.90E+01	4.98E+01	2.12E+01	2.28E+04
Co-60	1332.51	N	-5.62E+00	+- 1.38E+01	3.38E+01	1.31E+01	4.62E+04
Eu-152	1408.08	N	-1.40E+01	+- 1.01E+02	2.10E+02	8.59E+01	1.17E+05
K-40	1460.75	N	4.79E+01	+- 2.47E+02	4.62E+02	1.94E+02	1.12E+13
Al-26	1808.65	N	-4.92E+00	+- 1.42E+01	3.73E+01	1.37E+01	6.31E+09

MEASURED TOTAL: 2.68E+03 +- 4.89E+03 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.49	97.14	66	28	19	61	0.81	Unknown
2	74.87	153.82	84	33	22	93	0.75	Unknown
3	76.99	158.05	126	35	22	93	0.84	Unknown
4	83.88	171.82	31	28	21	75	1.00	Unknown
5	87.12	178.28	29	27	21	75	1.06	Unknown
6	89.82	183.67	33	27	20	75	1.05	Unknown
9	209.12	421.91	18	16	12	30	0.63	Unknown
14	511.61	1025.83	-1	20	17	23	1.80	Deleted

041030D08.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-24 GS040611-1 Code: 041030D08A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/23/2004 06:22:52
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.12E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.93E+000 g	Real Time	3613 Sec
Collection Efficiency	1.0000	Spc. File	.041030D08.SPC

Detector #: 8 (Detector 8)

Energy(keV)= -0.36 + 0.500*Ch +-5.25E-07*Ch^2 + 1.84E-10*Ch^3 06/23/2004
FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.44	93.53	1208	95	54	580	0.77 a	
2	53.15	106.93	203	71	53	574	0.86 a	
3	63.22	127.05	389	78	55	681	0.73 a	
4	66.36	133.33	50	57	46	511	0.41 b	
5	74.73	150.06	988	105	69	954	0.74 a	HiResid
6	77.04	154.68	1842	118	67	899	0.85 b	HiResid
7	79.20	159.00	9	43	35	341	0.39 c	NET< CL HiResid
8	81.20	163.00	9	55	45	502	0.43 d	NET< CL HiResid
9	83.89	168.37	163	71	54	651	0.71 e	HiResid
10	87.20	174.99	523	88	62	779	0.78 f	HiResid
11	89.88	180.34	168	68	52	598	0.63 g	HiResid
12	92.84	186.25	707	90	59	709	0.90 h	HiResid
13	104.95	210.46	54	44	34	284	0.42 a	
14	105.85	212.26	42	43	34	284	0.51 b	
15	112.75	226.06	22	41	33	272	0.53 a	NET< CL
16	128.92	258.36	188	71	54	538	1.03 a	
17	140.14	280.80	30	57	46	423	0.82 a	NET< CL
18	143.76	288.05	160	61	46	423	0.76 b	
19	154.37	309.25	124	73	57	564	1.09 a	
20	163.37	327.23	70	56	44	393	0.74 a	
21	186.01	372.50	1337	97	52	466	1.08 a	
22	198.62	397.71	41	55	44	356	0.94 a	NET< CL

041030D08.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
23	205.79	412.05	26	59	48	396	1.20 a	NET< CL
24	209.34	419.14	235	55	37	283	0.75 b	
25	238.66	477.77	1556	91	38	260	0.97 a	HiResid
26	241.95	484.35	612	67	38	260	1.01 b	HiResid
27	259.12	518.68	38	29	22	117	0.53 a	
28	270.37	541.18	316	78	57	396	1.92 a	Wide Pk
29	277.55	555.54	39	35	27	161	0.59 a	
30	295.27	590.98	1133	77	31	175	1.02 a	
31	300.22	600.87	116	43	31	175	0.99 b	
32	328.19	656.80	130	43	30	162	1.05 a	
33	338.39	677.20	476	58	31	181	0.96 a	
34	351.98	704.37	1897	94	29	160	1.13 a	
35	409.53	819.48	63	38	28	158	1.16 a	
36	463.01	926.44	150	39	25	113	1.30 a	
37	510.77	1021.96	214	49	32	164	1.76 a	
38	583.24	1166.88	498	51	21	84	1.17 a	
39	609.38	1219.15	1498	82	23	96	1.37 a	
40	665.34	1331.06	27	21	15	58	0.81 a	
41	727.24	1454.83	94	30	19	74	1.32 a	
42	755.73	1511.81	29	28	21	81	1.60 a	
43	768.13	1536.59	147	36	22	89	1.57 a	
44	772.22	1544.76	35	20	13	45	0.84 b	
45	785.68	1571.68	48	23	15	49	1.09 a	
46	794.72	1589.76	96	28	17	55	1.54 a	
47	806.46	1613.21	20	17	12	36	0.84 a	
48	860.50	1721.23	44	22	15	43	1.33 a	
49	910.95	1822.07	463	47	16	49	1.49 a	
50	934.00	1868.13	64	23	14	35	1.62 a	
51	964.38	1928.82	94	27	16	45	1.57 a	
52	968.82	1937.71	305	39	14	41	1.45 b	
53	1000.87	2001.72	25	15	10	24	1.01 a	
54	1120.20	2240.02	268	37	14	38	1.57 a	
55	1155.10	2309.69	27	15	9	19	1.38 a	
56	1238.12	2475.34	131	27	12	28	1.92 a	
57	1280.84	2560.57	23	18	13	32	1.68 a	
58	1377.65	2753.56	64	23	14	38	1.84 a	
59	1407.70	2813.44	31	16	10	22	1.12 a	
60	1730.51	3455.64	41	18	11	20	2.30 a	
61	1765.99	3526.11	233	32	9	13	2.37 a	
62	1849.60	3692.03	34	17	10	16	2.26 a	

041030D08.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET080618.BKG (0418003-28 Weekly Background)

Bkg.File Detector #: 8

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.44	1208	95	54	1174	96	55	
3	63.22	389	78	55	356	79	57	
4	66.36	50	57	46	35	58	47	NET<CL
5	74.73	988	105	69	979	105	69	
6	77.04	1842	118	67	1834	119	67	
7	79.20	9	43	35	7	43	35	NET<CL
9	83.89	163	71	54	156	71	55	
12	92.84	707	90	59	657	90	61	
15	112.75	22	41	33	19	43	35	NET<CL
17	140.14	30	57	46	23	58	47	NET<CL
18	143.76	160	61	46	155	62	47	
21	186.01	1337	97	52	1314	97	53	
22	198.62	41	55	44	32	55	45	NET<CL
25	238.66	1556	91	38	1541	91	39	
30	295.27	1133	77	31	1127	78	32	
33	338.39	476	58	31	473	58	32	
34	351.98	1897	94	29	1891	94	30	
37	510.78	214	49	32	120	51	38	
38	583.24	498	51	21	489	52	22	
39	609.38	1498	82	23	1493	83	24	
49	910.95	463	47	16	458	47	17	
53	1000.87	25	15	10	23	16	11	
61	1765.99	233	32	9	232	32	9	

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041030D08.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-24 GS040611-1 Code: 041030D08A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/23/2004 06:22:52
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.12e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	3600 Sec
Sample Size	1.93e+000 g	Real Time	3613 Sec
Collection Efficiency	1.0000	Spectrum File	.041030D08.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 8 (Detector 8)

Efficiency File: (D08)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[5.00E-01*En^-1.24E+00 + 1.20E+02*En^8.79E-01] 10/29/2003

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	1.05E+03 +- 1.23E+02	. . . .	. . . .	3.92E+13
	63.29		9.20E+02 +- 2.04E+02	3.01E+02	1.47E+02	3.92E+13
	92.50		1.13E+03 +- 1.55E+02	2.14E+02	1.05E+02	3.92E+13
Eu-155	105.31		2.50E+01 +- 2.02E+01	3.26E+01	1.57E+01	4.35E+04
U-235	Average:	x	1.52E+02 +- 5.44E+01	. . . .	. . . .	6.17E+12
	143.76		1.51E+02 +- 6.04E+01	9.37E+01	4.56E+01	6.17E+12
	163.35		1.55E+02 +- 1.25E+02	2.03E+02	9.85E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	Average:	x	5.38E+02 +- 3.15E+01	. . . .	. . . .	1.67E+04
	238.63		5.36E+02 +- 3.18E+01	2.78E+01	1.34E+01	1.67E+04
	300.09		6.34E+02 +- 2.36E+02	3.51E+02	1.68E+02	1.67E+04
Tl-208	Average:	x	1.66E+02 +- 1.71E+01	. . . .	. . . .	1.27E+14
	277.36		9.90E+01 +- 8.90E+01	1.44E+02	6.85E+01	1.27E+14
	583.14		1.70E+02 +- 1.80E+01	1.62E+01	7.64E+00	1.27E+14
	860.47		1.44E+02 +- 7.26E+01	1.05E+02	4.80E+01	1.27E+14
Pb-214	Average:	x	9.86E+02 +- 3.98E+01	. . . .	. . . .	1.40E+07
	295.22		9.88E+02 +- 6.80E+01	5.86E+01	2.81E+01	1.40E+07
	351.99		9.85E+02 +- 4.90E+01	3.23E+01	1.54E+01	1.40E+07
Ra-228	Average:	x	8.10E+02 +- 5.47E+01	. . . .	. . . .	5.04E+04
	338.40		7.98E+02 +- 9.85E+01	1.13E+02	5.40E+01	5.04E+04
	911.07		7.78E+02 +- 8.04E+01	6.12E+01	2.83E+01	5.04E+04
	968.90		8.92E+02 +- 1.14E+02	9.24E+01	4.22E+01	5.04E+04
Bi-212	727.17		5.32E+02 +- 1.71E+02	2.31E+02	1.08E+02	1.67E+04
Pa-234m	1001.03		1.85E+03 +- 1.27E+03	1.90E+03	8.40E+02	3.92E+13
Bi-214	Average:	x	9.18E+02 +- 1.15E+02	. . . .	. . . .	1.40E+07

041030D08.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
	1120.28		9.18E+02 +- 1.26E+02	1.03E+02	4.67E+01	1.40E+07
	609.32		9.18E+02 +- 2.95E+02	4.61E+02	2.30E+02	1.40E+07
Eu-152	1408.08		9.46E+01 +- 4.91E+01	6.72E+01	2.95E+01	1.17E+05
Am-241	59.54	N	1.10E+01 +- 2.17E+01	3.61E+01	1.76E+01	3.80E+06
Co-57	122.07	N	8.06E+00 +- 7.25E+00	1.18E+01	5.72E+00	6.48E+03
Ce-144	133.53	N	5.21E+00 +- 5.90E+01	9.96E+01	4.84E+01	6.82E+03
Ce-139	165.85	N	-1.39E+01 +- 1.69E+01	2.87E+01P	1.41E+01	3.30E+03
Th-227	236.00	N	1.16E+00 +- 5.42E+01	9.22E+01B	4.45E+01	1.90E+05
Cr-51	320.07	N	-2.79E+01 +- 2.32E+02	3.99E+02	1.92E+02	6.65E+02
I-131	364.48	N	2.49E+02 +- 4.61E+02	7.71E+02	3.67E+02	1.93E+02
Sb-125	427.95	N	4.68E+00 +- 2.76E+01	4.71E+01	2.25E+01	2.43E+04
Be-7	477.56	N	5.63E+01 +- 1.37E+02	2.31E+02	1.10E+02	1.28E+03
Sb-124	602.71	N	-9.03E+00 +- 1.68E+01	2.99E+01	1.43E+01	1.44E+03
Cs-134	604.66	N	-4.05E-02 +- 1.03E+01	1.78E+01B	8.45E+00	1.81E+04
Ru-106	621.84	N	1.34E+01 +- 9.23E+01	1.60E+02	7.51E+01	8.84E+03
Ag-110M	657.75	N	7.30E+00 +- 1.01E+01	1.67E+01	7.83E+00	6.00E+03
Cs-137	661.62	N	-5.32E+00 +- 1.03E+01	1.86E+01B	8.78E+00	2.64E+05
Nb-94	702.50	N	-2.69E+00 +- 1.07E+01	1.89E+01	8.95E+00	1.78E+08
Nb-95	765.82	N	-3.02E+01 +- 2.71E+01	5.05E+01R	2.44E+01	1.54E+03
Co-58	810.75	N	-9.92E+00 +- 1.38E+01	2.58E+01b	1.21E+01	1.70E+03
Mn-54	834.81	N	1.33E+00 +- 1.17E+01	2.03E+01	9.53E+00	7.49E+03
Sc-46	889.26	N	-1.25E+01 +- 1.49E+01	2.79E+01	1.31E+01	2.01E+03
Eu-154	1004.80	N	-2.37E+01 +- 6.88E+01	1.26E+02r	5.95E+01	7.45E+04
Fe-59	1099.22	N	-1.11E+01 +- 3.54E+01	6.51E+01	3.01E+01	1.08E+03
Zn-65	1115.52	N	1.16E+00 +- 3.14E+01	5.44E+01R	2.57E+01	5.85E+03
Co-56	1238.28	N	1.85E+02 +- 6.42E+01	8.14E+01r	3.90E+01	1.86E+03
Na-22	1274.54	N	-6.84E+00 +- 1.08E+01	2.06E+01B	9.48E+00	2.28E+04
Co-60	1332.51	N	-7.49E+00 +- 1.06E+01	2.05E+01	9.44E+00	4.62E+04
K-40	1460.75	N	1.05E+02 +- 1.17E+02	1.91E+02	8.73E+01	1.12E+13
Al-26	1808.65	N	-5.25E+00 +- 9.57E+00	1.92E+01	8.55E+00	6.31E+09

MEASURED TOTAL: 7.77E+03 +- 3.04E+03 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.44	93.53	1174	96	55	580	0.77	Unknown
2	53.15	106.93	203	71	53	574	0.86	Unknown
4	66.36	133.33	35	58	47	511	0.41	Deleted
5	74.73	150.06	979	105	69	954	0.74	Unknown
6	77.04	154.68	1834	119	67	899	0.85	Unknown
7	79.20	159.00	7	43	35	341	0.39	Deleted
8	81.20	163.00	9	55	45	502	0.43	Deleted
9	83.89	168.37	156	71	55	651	0.71	Unknown
10	87.20	174.99	523	88	62	779	0.78	Unknown
11	89.88	180.34	168	68	52	598	0.63	Unknown

041030D08.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
14	105.85	212.26	42	43	34	284	0.51	Unknown
15	112.75	226.06	19	43	35	272	0.53	Deleted
16	128.92	258.36	188	71	54	538	1.03	Unknown
17	140.14	280.80	23	58	47	423	0.82	Deleted
19	154.37	309.25	124	73	57	564	1.09	Unknown
22	198.62	397.71	32	55	45	356	0.94	Deleted
23	205.79	412.05	26	59	48	396	1.20	Deleted
24	209.34	419.14	235	55	37	283	0.75	Unknown
26	241.95	484.35	612	67	38	260	1.01	Unknown
27	259.12	518.68	38	29	22	117	0.53	Unknown
28	270.37	541.18	316	78	57	396	1.92	Unknown
32	328.19	656.80	130	43	30	162	1.05	Unknown
35	409.54	819.48	63	38	28	158	1.16	Unknown
36	463.01	926.44	150	39	25	113	1.30	Unknown
37	510.77	1021.96	120	51	38	164	1.76	Unknown
39	609.38	1219.15	1493	83	24	96	1.37	SPLIT
40	665.34	1331.06	27	21	15	58	0.81	Unknown
42	755.73	1511.81	29	28	21	81	1.60	Unknown
43	768.13	1536.59	147	36	22	89	1.57	Unknown
44	772.22	1544.76	35	20	13	45	0.84	Unknown
45	785.68	1571.68	48	23	15	49	1.09	Unknown
46	794.72	1589.76	96	28	17	55	1.54	Unknown
47	806.46	1613.21	20	17	12	36	0.84	Unknown
50	934.00	1868.13	64	23	14	35	1.62	Unknown
51	964.38	1928.82	94	27	16	45	1.57	Unknown
55	1155.10	2309.69	27	15	9	19	1.38	Unknown
56	1238.12	2475.34	131	27	12	28	1.92	Unknown
57	1280.84	2560.57	23	18	13	32	1.68	Unknown
58	1377.65	2753.56	64	23	14	38	1.84	Unknown
60	1730.51	3455.64	41	18	11	20	2.30	Unknown
61	1765.99	3526.11	232	32	9	13	2.37	Unknown
62	1849.60	3692.03	34	17	10	16	2.26	Unknown
64	609.38	1219.15	107	906	24	96	1.37	1120SEsc

040960D07.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-25 GS040611-1 Code: 040960D07A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/23/2004 07:33:51
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.12E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.45E+000 g	Real Time	3609 Sec
Collection Efficiency	1.0000	Spc. File	.040960D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.32 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/23/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.28	96.99	120	32	20	86	0.67 a	
2	63.06	130.47	112	45	33	187	1.07 a	Wide Pk
3	66.01	136.37	77	52	40	240	1.47 b	
4	74.66	153.62	151	39	24	133	0.72 a	
5	76.90	158.09	196	41	24	133	0.71 b	
6	83.92	172.10	37	33	25	126	0.83 a	
7	86.98	178.22	63	38	29	151	1.01 b	
8	89.57	183.38	58	38	29	151	1.04 c	
9	92.75	189.73	138	46	32	176	1.18 d	
10	128.44	260.96	28	32	25	111	0.94 a	
11	143.48	290.97	22	34	27	131	0.96 a	NET< CL
12	185.78	375.39	160	38	23	90	1.17 a	
13	238.55	480.70	235	38	18	62	0.93 a	
14	241.36	486.30	89	36	25	93	1.52 b	
15	295.12	593.58	102	29	17	54	1.00 a	
16	327.46	658.12	29	30	23	70	1.86 a	Wide Pk
17	338.21	679.58	76	24	14	34	0.91 a	
18	351.94	706.98	191	35	18	54	1.21 a	
19	509.38	1021.18	23	14	8	14	0.75 a	Wide Pk
20	511.28	1024.97	91	27	16	36	2.12 b	
21	583.33	1168.76	67	24	15	35	1.58 a	
22	609.48	1220.94	144	28	12	26	1.09 a	
23	727.68	1456.84	26	15	9	16	1.38 a	
24	794.90	1590.97	17	11	6	10	1.00 a	

040960D07.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	911.03	1822.74	68	19	8	14	1.45	a
26	968.85	1938.12	31	20	13	29	2.11	a
27	1120.39	2240.55	26	16	10	17	1.86	a
28	1763.30	3523.57	29	11	3	1	2.79	a

040960D07.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET070618.BKG (0418003-27 Weekly Background)

Bkg.File Detector #: 7

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.28	120	32	20	90	34	23	
2	63.06	112	45	33	90	47	35	
3	66.01	77	52	40	69	53	41	
4	74.66	151	39	24	145	40	26	
5	76.90	197	41	24	193	42	25	
6	83.92	37	33	25	28	35	27	
7	86.98	63	38	29	59	39	30	
9	92.75	138	46	32	107	47	34	
11	185.78	160	38	23	145	38	25	
12	238.55	235	38	18	219	39	21	
14	295.12	102	29	17	100	30	18	
17	351.94	191	35	18	186	36	19	
18	509.38	23	14	8	-45	19	19	NET<CL
20	583.33	67	24	15	62	25	16	
21	609.48	144	28	12	139	28	13	
24	911.03	68	19	8	66	20	10	

040960D07.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-25 GS040611-1 Code: 040960D07A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	06/23/2004 07:33:51
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.12e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	3600 Sec
Sample Size	1.45e+000 g	Real Time	3609 Sec
Collection Efficiency	1.0000	Spectrum File	.040960D07.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 7 (Detector 7)

Efficiency File: (D07)(Sh01).EFF (Geo 1 Eff CaL)

Eff.=1/[4.38E-01*En^-1.35E+00 + 1.62E+02*En^9.38E-01] 01/23/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	3.05E+02 +- 1.03E+02	. . . .	. . . .	3.92E+13
	63.29		3.60E+02 +- 1.87E+02	2.91E+02	1.40E+02	3.92E+13
	92.50		2.81E+02 +- 1.23E+02	1.88E+02	9.05E+01	3.92E+13
U-235	143.76	N	3.82E+01 +- 4.80E+01	7.89E+01	3.74E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		1.24E+02 +- 2.20E+01	2.50E+01	1.17E+01	1.67E+04
Pb-214	Average:	x	1.57E+02 +- 2.53E+01	. . . .	. . . .	1.40E+07
	295.22		1.45E+02 +- 4.31E+01	5.64E+01	2.62E+01	1.40E+07
	351.99		1.63E+02 +- 3.13E+01	3.58E+01	1.67E+01	1.40E+07
Ra-228	Average:	x	2.00E+02 +- 4.17E+01	. . . .	. . . .	5.04E+04
	338.40		2.14E+02 +- 6.77E+01	8.45E+01	3.84E+01	5.04E+04
	911.07		2.01E+02 +- 6.16E+01	6.88E+01	3.03E+01	5.04E+04
	968.90		1.62E+02 +- 1.03E+02	1.55E+02	7.02E+01	5.04E+04
Tl-208	583.14		3.77E+01 +- 1.50E+01	2.07E+01	9.55E+00	1.27E+14
Bi-214	Average:	x	1.61E+02 +- 3.10E+01	. . . .	. . . .	1.40E+07
	609.32		1.61E+02 +- 3.28E+01	3.33E+01	1.51E+01	1.40E+07
	1120.28		1.64E+02 +- 9.63E+01	1.37E+02	6.01E+01	1.40E+07
Bi-212	727.17		2.56E+02 +- 1.51E+02	2.13E+02	9.30E+01	1.67E+04
Cs-134	Average:	x	8.52E+00 +- 6.09E+00	. . . .	. . . .	1.81E+04
	795.76		1.40E+01 +- 9.38E+00	1.30E+01	5.37E+00	1.81E+04
	604.66	N	4.53E+00 +- 8.00E+00	1.36E+01B	6.03E+00	1.81E+04
Am-241	59.54	N	4.33E-01 +- 1.41E+01	2.43E+01B	1.16E+01	3.80E+06
Eu-155	105.31	N	2.11E+01 +- 1.97E+01	3.17E+01	1.49E+01	4.35E+04
Co-57	122.07	N	-3.83E+00 +- 6.14E+00	1.11E+01	5.26E+00	6.48E+03
Ce-144	133.53	N	9.78E+00 +- 4.84E+01	8.29E+01	3.92E+01	6.82E+03

040960D07.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Ce-139	165.85	N	4.57E+00 +- 7.71E+00	1.29E+01	6.06E+00	3.30E+03
Th-227	236.00	N	1.90E+01 +- 6.41E+01	1.07E+02R	5.08E+01	1.90E+05
Cr-51	320.07	N	1.59E+02 +- 2.07E+02	3.42E+02	1.58E+02	6.65E+02
I-131	364.48	N	-5.42E+01 +- 4.12E+02	7.50E+02	3.44E+02	1.93E+02
Sb-125	427.95	N	1.48E+01 +- 2.15E+01	3.58E+01	1.61E+01	2.43E+04
Be-7	477.56	N	-7.44E+00 +- 1.14E+02	2.10E+02	9.48E+01	1.28E+03
Sb-124	602.71	N	-7.36E+00 +- 1.30E+01	2.56E+01	1.15E+01	1.44E+03
Ru-106	621.84	N	-1.81E+01 +- 8.11E+01	1.54E+02	6.89E+01	8.84E+03
Ag-110M	657.75	N	-5.19E+00 +- 8.79E+00	1.76E+01	7.88E+00	6.00E+03
Cs-137	661.62	N	-6.26E+00 +- 9.85E+00	1.94E+01	8.78E+00	2.64E+05
Nb-94	702.50	N	7.45E+00 +- 1.03E+01	1.71E+01	7.73E+00	1.78E+08
Nb-95	765.82	N	-9.56E+00 +- 1.45E+01	2.90E+01	1.30E+01	1.54E+03
Co-58	810.75	N	-5.19E+00 +- 1.30E+01	2.58E+01	1.14E+01	1.70E+03
Mn-54	834.81	N	3.16E+00 +- 9.78E+00	1.74E+01	7.61E+00	7.49E+03
Sc-46	889.26	N	-8.91E+00 +- 1.09E+01	2.37E+01	1.04E+01	2.01E+03
Pa-234m	1001.03	N	1.14E+03 +- 1.56E+03	2.59E+03	1.10E+03	3.92E+13
Eu-154	1004.80	N	-2.38E+01 +- 5.12E+01	1.04E+02	4.56E+01	7.45E+04
Fe-59	1099.22	N	-2.41E+01 +- 3.03E+01	6.71E+01	2.90E+01	1.08E+03
Zn-65	1115.52	N	-2.68E+01 +- 5.85E+01	1.05E+02P	4.97E+01	5.85E+03
Co-56	1238.28	N	4.63E+00 +- 2.54E+01	4.66E+01	2.02E+01	1.86E+03
Na-22	1274.54	N	0.00E+00 +- 9.29E+00	1.82E+01	7.64E+00	2.28E+04
Co-60	1332.51	N	-6.73E+00 +- 1.00E+01	2.18E+01	9.41E+00	4.62E+04
Eu-152	1408.08	N	2.78E+01 +- 5.56E+01	9.69E+01	4.09E+01	1.17E+05
K-40	1460.75	N	1.90E+01 +- 1.28E+02	2.35E+02	1.03E+02	1.12E+13
Al-26	1808.65	N	7.36E+00 +- 6.58E+00	3.98E+00	. . . .	6.31E+09

MEASURED TOTAL: 2.73E+03 +- 2.63E+03 pCi/g

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.28	96.99	90	34	23	86	0.67	Unknown
3	66.01	136.37	69	53	41	240	1.47	Unknown
4	74.66	153.62	145	40	26	133	0.72	Unknown
5	76.90	158.09	193	42	25	133	0.71	Unknown
6	83.92	172.10	28	35	27	126	0.83	Unknown
7	86.98	178.22	59	39	30	151	1.01	Unknown
8	89.57	183.38	58	38	29	151	1.04	Unknown
10	128.44	260.96	28	32	25	111	0.94	Unknown
13	241.36	486.30	89	36	25	93	1.52	Unknown
15	327.46	658.12	29	30	23	70	1.86	Unknown
18	509.38	1021.18	-45	19	19	14	0.75	Deleted
19	511.28	1024.97	91	27	16	36	2.12	Unknown
27	1763.30	3523.57	29	11	3	1	2.79	Unknown

041139D02.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-26 GS040614-2 Code: 041139D02A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/02/2004 08:22:56
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.34E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	9.93E+001 g	Real Time	1823 Sec
Collection Efficiency	1.0000	Spc. File	.041139D02.SPC

Detector #: 2 (Detector 2)

Energy(keV)= -0.16 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/02/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	63.83	127.98	640	138	106	2258	0.86 a	
2	68.33	136.97	80	130	106	2258	0.81 b	NET< CL
3	75.30	150.92	3097	201	138	3518	0.85	
4	77.59	155.50	5515	218	132	3207	1.07	
5	81.71	163.73	-582	144	125	3140	0.53	NET< CL
6	84.47	169.26	1502	196	148	3461	1.20	Wide Pk
7	87.66	175.65	668	195	155	4417	0.40	
8	90.38	181.07	-3707	240	221	8346	51.71	NET< CL
9	93.31	186.94	3317	205	139	3302	1.41	
10	100.03	200.38	431	138	109	2180	1.13	
11	105.85	212.01	502	153	120	2452	1.19 a	
12	109.06	218.43	121	82	65	1051	0.49 b	
13	113.29	226.90	96	99	80	1409	0.68 a	
14	115.72	231.76	185	101	80	1409	0.63 b	
15	129.62	259.56	788	130	96	1866	0.77 a	
16	144.40	289.12	423	124	96	1877	0.74 a	
17	154.54	309.39	496	136	106	2078	0.90 a	
18	159.51	319.34	91	81	65	1039	0.43 b	
19	163.90	328.11	175	113	90	1639	0.80 a	
20	167.13	334.58	99	79	63	984	0.45 b	
21	186.46	373.23	4722	196	115	2241	1.07 a	
22	198.23	396.78	111	93	74	1226	0.73 a	
23	205.68	411.68	150	119	96	1698	1.03 a	
24	209.68	419.68	1571	141	96	1698	0.98 b	

041139D02.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	236.57	473.46	405	110	84	1309	1.06 a	HiResid
26	239.05	478.41	14201	259	84	1309	1.02 b	HiResid
27	242.08	484.47	4395	193	115	1964	1.50 c	HiResid
28	256.64	513.59	163	63	48	560	0.48 a	
29	259.10	518.52	172	98	78	1119	1.00 b	
30	270.69	541.69	1668	158	111	1722	1.60 a	Wide Pk
31	277.83	555.98	406	92	68	934	0.79 a	
32	295.62	591.56	6489	186	77	1017	1.07 a	
33	300.50	601.32	935	104	69	872	1.06 b	
34	324.43	649.18	47	53	42	440	0.57 a	
35	328.37	657.06	784	110	78	1026	1.10 b	
36	333.00	666.31	97	96	78	1026	1.19 c	
37	338.63	677.58	3069	139	69	891	1.02 a	
38	349.19	698.69	34	49	39	382	0.53 a	NET< CL
39	352.23	704.77	10996	227	72	891	1.15 b	
40	387.93	776.18	176	147	119	1559	2.35 a	Wide Pk
41	402.19	804.70	83	80	64	751	0.95 a	
42	409.91	820.13	418	90	66	748	1.18 a	
43	426.95	854.21	77	93	75	833	1.49 a	
44	454.02	908.35	171	117	94	1031	2.18 a	Wide Pk
45	463.32	926.95	938	93	57	610	1.29 a	
46	487.28	974.86	105	62	48	463	1.12 a	
47	511.07	1022.44	1349	100	55	568	1.37 a	HiResid
48	516.26	1032.84	37	50	40	355	0.89 b	NET< CL HiResid
49	562.90	1126.11	145	63	48	449	1.13 a	
50	583.48	1167.27	4097	144	54	543	1.31 a	
51	601.79	1203.89	34	52	42	371	0.94 a	NET< CL
52	609.56	1219.44	7706	186	50	461	1.38 a	
53	661.87	1324.05	51	45	35	274	0.87 a	
54	665.85	1332.01	191	65	49	438	1.29 b	
55	703.50	1407.30	49	72	58	549	1.56 a	NET< CL
56	720.55	1441.42	49	53	42	345	1.15 a	
57	727.49	1455.28	924	84	48	403	1.52 a	
58	755.31	1510.92	139	60	46	365	1.44 a	
59	763.49	1527.29	91	49	37	274	1.08 a	
60	768.59	1537.48	782	85	53	430	1.81 b	
61	772.63	1545.58	254	67	49	391	1.60 c	
62	786.01	1572.32	213	65	48	395	1.41 a	
63	795.10	1590.51	536	71	44	334	1.54 a	
64	806.56	1613.43	123	48	35	238	1.16 a	
65	831.52	1663.35	114	80	63	547	2.75 a	Wide Pk
66	835.83	1671.98	223	56	39	290	1.46 b	
67	840.04	1680.38	219	65	48	386	2.03 c	
68	860.63	1721.56	513	67	40	303	1.58 a	
69	893.43	1787.16	41	45	35	242	1.46 a	
70	904.26	1808.82	73	53	41	299	1.82 a	
71	909.09	1818.48	16	30	23	136	0.80 b	NET< CL
72	911.41	1823.14	3471	127	38	272	1.66 c	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
73	934.26	1868.83	331	54	32	204	1.54	a
74	964.92	1930.15	582	67	38	259	1.72	a
75	969.08	1938.46	1977	99	36	235	1.68	b
76	1000.54	2001.39	124	49	36	228	1.75	a
77	1001.96	2004.22	50	29	20	103	0.84	b
78	1078.42	2157.14	46	37	29	161	1.44	a
79	1120.32	2240.95	1546	89	35	210	1.84	a
80	1155.31	2310.93	181	49	34	202	1.88	a
81	1238.19	2476.68	578	62	32	187	2.04	a
82	1281.25	2562.79	114	47	34	207	2.11	a
83	1377.56	2755.43	401	56	33	189	2.18	a
84	1385.42	2771.14	43	35	27	145	1.57	b
85	1401.32	2802.94	167	48	34	180	2.67	a
86	1408.00	2816.30	230	46	29	146	2.13	b
87	1460.12	2920.53	222	57	40	234	2.89	a
88	1495.76	2991.81	43	33	25	130	1.41	a
89	1509.15	3018.59	156	43	29	156	2.04	a
90	1543.61	3087.52	38	31	23	112	1.44	a
91	1580.35	3161.01	52	33	24	109	1.92	a
92	1587.96	3176.22	321	49	27	127	2.28	b
93	1592.21	3184.72	178	40	24	109	1.98	c
94	1620.68	3241.66	137	42	28	133	2.41	a
95	1630.38	3261.05	145	42	28	133	2.43	b
96	1661.09	3322.47	62	27	18	65	1.55	a
97	1693.66	3387.61	32	26	20	71	2.04	a
98	1729.28	3458.86	250	41	22	82	2.18	a
99	1764.15	3528.60	1253	76	22	81	2.50	a
100	1847.07	3694.44	139	36	22	86	2.16	a
101	1895.53	3791.35	24	20	14	44	1.34	a

041139D02.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	63.83	640	138	106	635	138	106	
2	68.33	80	130	106	76	130	106	NET<CL
3	75.30	3097	201	138	3093	201	138	
4	77.59	5515	218	132	5512	218	132	
6	84.47	1502	196	148	1500	196	148	
7	87.66	668	195	155	666	195	155	
8	90.38	-3707	240	221	-3708	240	221	NET<CL
9	93.31	3317	205	139	3304	205	139	
14	115.72	185	101	80	184	101	80	
15	129.62	788	130	96	787	130	96	
16	144.40	423	124	96	421	124	97	
19	163.90	175	113	90	174	113	90	
21	186.46	4722	196	115	4715	196	115	
22	198.23	111	93	74	106	93	75	
25	236.57	405	110	84	398	110	84	
32	295.62	6489	186	77	6487	187	77	
37	338.63	3069	139	69	3067	139	70	
39	352.23	10996	227	72	10992	227	72	
47	511.07	1349	100	55	1308	100	57	
50	583.48	4097	144	54	4092	144	54	
52	609.56	7706	186	50	7702	186	50	
68	860.63	513	67	41	512	67	41	
72	911.41	3471	127	38	3469	127	38	
75	969.08	1977	99	36	1975	99	36	
87	1460.12	222	57	40	217	57	40	
99	1764.15	1253	76	22	1252	76	22	

000324

041139D02.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-26 GS040614-2 Code: 041139D02A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/02/2004 08:22:56
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.34e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	9.93e+001 g	Real Time	1823 Sec
Collection Efficiency	1.0000	Spectrum File	.041139D02.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 2 (Detector 2)

Efficiency File: (D02)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[8.73E-04*En^-4.04E+00 + 6.76E+01*En^8.33E-01] 06/01/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	2.00E+02 +- 1.19E+01	. . . .	. . . .	3.92E+13
	63.29		1.68E+02 +- 3.67E+01	5.69E+01	2.81E+01	3.92E+13
	92.50		2.04E+02 +- 1.26E+01	1.74E+01	8.60E+00	3.92E+13
Eu-155	105.31		6.67E+00 +- 2.02E+00	3.22E+00	1.59E+00	4.35E+04
Pb-212	Average:	x	1.09E+02 +- 1.96E+00	. . . .	. . . .	1.67E+04
	115.18		8.28E+01 +- 4.54E+01	7.31E+01	3.60E+01	1.67E+04
	238.63		1.09E+02 +- 1.99E+00	1.31E+00	6.45E-01	1.67E+04
	300.09		1.14E+02 +- 1.26E+01	1.71E+01	8.36E+00	1.67E+04
U-235	Average:	x	8.92E+00 +- 2.27E+00	. . . .	. . . .	6.17E+12
	143.76		9.11E+00 +- 2.69E+00	4.24E+00	2.09E+00	6.17E+12
	163.35		8.45E+00 +- 5.47E+00	8.88E+00	4.37E+00	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
	205.31		8.45E+00 +- 6.69E+00	1.09E+01	5.39E+00	6.17E+12
Ce-139	165.85		4.03E-01 +- 3.24E-01	5.27E-01	2.58E-01	3.30E+03
Th-227	236.00		1.01E+01 +- 2.80E+00	4.36E+00	2.15E+00	1.90E+05
Tl-208	Average:	x	3.15E+01 +- 1.06E+00	. . . .	. . . .	1.27E+14
	277.36		2.27E+01 +- 5.16E+00	7.78E+00	3.81E+00	1.27E+14
	583.14		3.16E+01 +- 1.11E+00	8.60E-01	4.20E-01	1.27E+14
	860.47		3.72E+01 +- 4.86E+00	6.09E+00	2.95E+00	1.27E+14
Pb-214	Average:	x	1.27E+02 +- 2.13E+00	. . . .	. . . .	1.40E+07
	295.22		1.26E+02 +- 3.61E+00	3.05E+00	1.50E+00	1.40E+07
	351.99		1.27E+02 +- 2.63E+00	1.71E+00	8.38E-01	1.40E+07
Ra-228	Average:	x	1.24E+02 +- 3.07E+00	. . . .	. . . .	5.04E+04
	338.40		1.15E+02 +- 5.23E+00	5.33E+00	2.61E+00	5.04E+04
	911.07		1.29E+02 +- 4.73E+00	2.97E+00	1.44E+00	5.04E+04

041139D02.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
	968.90		1.27E+02	+- 6.35E+00	4.76E+00	2.29E+00	5.04E+04
Sb-125	Average:x		6.06E+00	+- 1.54E+00	. . . .	. . . . .	2.43E+04
	427.95		1.35E+00	+- 1.62E+00	2.67E+00	1.31E+00	2.43E+04
	463.51		5.01E+01	+- 4.96E+00	6.28E+00	3.07E+00	2.43E+04
Cs-134	Average:x		1.35E+00	+- 3.82E-01	. . . .	. . . . .	1.81E+04
	563.26		1.16E+01	+- 5.02E+00	7.84E+00	3.81E+00	1.81E+04
	604.66	N	-3.19E-01	+- 4.50E-01	7.76E-01B	3.78E-01	1.81E+04
	795.76		5.57E+00	+- 7.34E-01	9.39E-01	4.56E-01	1.81E+04
Bi-214	Average:x		1.13E+02	+- 2.52E+00	. . . .	. . . . .	1.40E+07
	609.32		1.13E+02	+- 2.73E+00	1.51E+00	7.36E-01	1.40E+07
	1120.28		1.15E+02	+- 6.63E+00	5.34E+00	2.57E+00	1.40E+07
Cs-137	661.62		4.33E-01	+- 3.80E-01	6.16E-01	2.96E-01	2.64E+05
Bi-212	727.17		1.16E+02	+- 1.06E+01	1.25E+01	6.06E+00	1.67E+04
Ag-110M	Average:x		4.76E-01	+- 4.94E-01	. . . .	. . . . .	6.00E+03
	763.93		3.93E+00	+- 2.12E+00	3.33E+00	1.61E+00	6.00E+03
	1384.27		2.82E+00	+- 2.28E+00	3.65E+00	1.74E+00	6.00E+03
	657.75	N	1.43E-01	+- 5.21E-01	8.74E-01B	4.25E-01	6.00E+03
Mn-54	834.81		2.22E+00	+- 5.53E-01	7.95E-01	3.84E-01	7.49E+03
Pa-234m	1001.03		2.15E+02	+- 8.50E+01	1.29E+02	6.23E+01	3.92E+13
K-40	1460.75		2.76E+01	+- 7.23E+00	1.05E+01	5.09E+00	1.12E+13
Am-241	59.54	N	1.28E+00	+- 3.75E+00	6.22E+00	3.06E+00	3.80E+06
Co-57	122.07	N	1.13E-01	+- 3.64E-01	6.05E-01	2.98E-01	6.48E+03
Ce-144	133.53	N	-2.27E+00	+- 2.85E+00	4.82E+00	2.38E+00	6.82E+03
Cr-51	320.07	N	2.41E+00	+- 1.32E+01	2.20E+01	1.08E+01	6.65E+02
I-131	364.48	N	-1.61E+01	+- 5.31E+01	8.98E+01	4.40E+01	1.93E+02
Be-7	477.56	N	-1.52E+00	+- 7.15E+00	1.21E+01	5.92E+00	1.28E+03
Sb-124	602.71	N	4.15E-01	+- 8.05E-01	1.34E+00	6.51E-01	1.44E+03
Ru-106	621.84	N	-1.56E+00	+- 4.65E+00	7.95E+00	3.87E+00	8.84E+03
Nb-94	702.50	N	4.70E-01	+- 5.22E-01	8.56E-01	4.17E-01	1.78E+08
Nb-95	765.82	N	-2.16E+00	+- 1.32E+00	2.28E+00P	1.12E+00	1.54E+03
Co-58	810.75	N	1.34E-01	+- 7.20E-01	1.21E+00b	5.87E-01	1.70E+03
Sc-46	889.26	N	-1.76E-01	+- 9.63E-01	1.64E+00R	8.01E-01	2.01E+03
Eu-154	1004.80	N	-3.75E+00	+- 3.43E+00	6.19E+00r	3.02E+00	7.45E+04
Fe-59	1099.22	N	-1.95E+00	+- 2.06E+00	3.65E+00	1.76E+00	1.08E+03
Zn-65	1115.52	N	-1.41E+00	+- 1.69E+00	2.99E+00R	1.46E+00	5.85E+03
Co-56	1238.28	N	-1.65E+01	+- 3.75E+00	7.06E+00R	3.49E+00	1.86E+03
Na-22	1274.54	N	4.30E-01	+- 4.68E-01	7.65E-01B	3.65E-01	2.28E+04
Co-60	1332.51	N	-3.18E-01	+- 4.66E-01	8.32E-01	3.98E-01	4.62E+04
Eu-152	1408.08	N	1.48E+01	+- 4.77E+00	6.55E+00r	3.19E+00	1.17E+05
Al-26	1808.65	N	3.92E-02	+- 4.10E-01	7.14E-01	3.34E-01	6.31E+09

MEASURED TOTAL: 1.12E+03 +- 1.61E+02 pCi/g

041139D02.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
2	68.33	136.97	76	130	106	2258	0.81	Deleted
3	75.30	150.92	3093	201	138	3518	0.85	Unknown
4	77.59	155.50	5512	218	132	3207	1.07	Unknown
5	81.71	163.73	-582	144	125	3140	0.53	Deleted
6	84.47	169.26	1500	196	148	3461	1.20	Unknown
7	87.66	175.65	666	195	155	4417	0.40	Unknown
8	90.38	181.07	-3708	240	221	8346	51.71	Deleted
10	100.03	200.38	431	138	109	2180	1.13	1120DEsc
12	109.06	218.43	121	82	65	1051	0.49	Unknown
13	113.29	226.90	96	99	80	1409	0.68	Unknown
15	129.62	259.56	787	130	96	1866	0.77	Unknown
17	154.54	309.39	496	136	106	2078	0.90	Unknown
18	159.51	319.34	91	81	65	1039	0.43	Unknown
22	198.23	396.78	106	93	75	1226	0.73	Unknown
24	209.68	419.68	1571	141	96	1698	0.98	Unknown
27	242.08	484.47	4395	193	115	1964	1.50	Unknown
28	256.64	513.59	163	63	48	560	0.48	Unknown
29	259.10	518.52	172	98	78	1119	1.00	1281DEsc
30	270.69	541.69	1668	158	111	1722	1.60	Unknown
34	324.43	649.18	47	53	42	440	0.57	Unknown
35	328.37	657.06	784	110	78	1026	1.10	Unknown
36	333.00	666.31	97	96	78	1026	1.19	Unknown
38	349.19	698.69	34	49	39	382	0.53	Deleted
40	387.93	776.18	176	147	119	1559	2.35	1408DEsc
41	402.19	804.70	83	80	64	751	0.95	Unknown
42	409.91	820.13	418	90	66	748	1.18	Unknown
44	454.02	908.35	171	117	94	1031	2.18	Unknown
46	487.28	974.86	105	62	48	463	1.12	1509DEsc
47	511.07	1022.44	1308	100	57	568	1.37	Unknown
48	516.26	1032.84	37	50	40	355	0.89	Deleted
51	601.79	1203.89	34	52	42	371	0.94	Deleted
54	665.85	1332.01	192	65	49	438	1.29	Unknown
55	703.50	1407.30	49	72	58	549	1.56	Deleted
56	720.55	1441.42	49	53	42	345	1.15	Unknown
58	755.31	1510.92	139	60	46	365	1.44	Unknown
60	768.59	1537.48	782	85	53	430	1.81	1281SEsc
61	772.63	1545.58	254	67	49	391	1.60	Unknown
62	786.01	1572.32	213	65	48	395	1.41	Unknown
64	806.56	1613.43	123	48	35	238	1.16	Unknown
65	831.52	1663.35	114	80	63	547	2.75	Unknown
67	840.04	1680.38	219	65	48	386	2.03	Unknown
69	893.43	1787.16	41	45	35	242	1.46	Unknown
70	904.26	1808.82	73	53	41	299	1.82	Unknown
71	909.09	1818.48	16	30	24	136	0.80	Deleted
73	934.26	1868.83	331	54	32	204	1.54	Unknown
74	964.92	1930.15	582	67	38	259	1.72	Unknown
77	1001.96	2004.22	50	29	21	104	0.84	Unknown
78	1078.42	2157.14	46	37	29	161	1.44	1588SEsc
80	1155.31	2310.93	181	49	34	202	1.88	Unknown

041139D02.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
81	1238.19	2476.68	578	62	32	187	2.04	Unknown
82	1281.25	2562.79	115	47	34	207	2.11	Unknown
83	1377.56	2755.43	401	56	33	189	2.18	Unknown
85	1401.32	2802.94	167	48	34	180	2.67	Unknown
86	1408.00	2816.30	230	46	29	146	2.13	Unknown
88	1495.76	2991.81	43	33	25	130	1.41	Unknown
89	1509.15	3018.59	156	43	29	156	2.04	Unknown
90	1543.61	3087.52	38	31	23	112	1.44	Unknown
91	1580.35	3161.01	52	33	24	109	1.92	Unknown
92	1587.96	3176.22	321	49	27	127	2.28	Unknown
93	1592.21	3184.72	178	40	24	109	1.98	Unknown
94	1620.68	3241.66	137	42	28	133	2.41	Unknown
95	1630.38	3261.05	145	42	28	133	2.43	Unknown
96	1661.09	3322.47	62	27	18	65	1.55	Unknown
97	1693.66	3387.61	32	26	20	71	2.04	Unknown
98	1729.28	3458.86	250	41	22	82	2.18	Unknown
99	1764.15	3528.60	1252	76	22	81	2.50	Unknown
100	1847.07	3694.44	139	36	22	86	2.16	Unknown
101	1895.53	3791.35	24	20	14	44	1.34	Unknown

041061D07.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-27 GS040614-2 Code: 041061D07A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/02/2004 08:56:51
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.34E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	9.50E+001 g	Real Time	1826 Sec
Collection Efficiency	1.0000	Spc. File	.041061D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.06 + 0.500*Ch + 3.58E-07*Ch^2 +-3.53E-11*Ch^3 07/02/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.44	96.93	1707	139	92	1703	0.75 a	HiResid
2	50.03	104.09	236	100	78	1362	0.66 b	HiResid
3	53.23	110.48	373	87	64	1022	0.54 c	HiResid
4	63.28	130.56	2193	169	115	2683	0.85 a	
5	67.72	139.44	364	105	81	1610	0.43 b	
6	72.70	149.39	188	131	106	2476	0.73	
7	74.79	153.57	5930	239	150	4146	1.18	
8	77.09	158.17	10258	260	133	3290	0.90	
9	79.31	162.60	289	114	90	1781	1.16	
10	80.50	164.98	936	206	161	3849	1.31	Wide Pk
11	83.98	171.93	2112	181	128	2804	1.20	
12	87.16	178.29	-351	238	198	6672	0.19	NET< CL
13	89.87	183.70	-4733	256	239	9750	51.52	NET< CL
14	92.87	189.69	3911	207	136	3143	1.52	
15	99.36	202.66	62	256	210	4889	0.12	NET< CL Wide Pk
16	105.29	214.52	766	134	100	1708	1.19 a	
17	108.94	221.80	310	139	111	1952	1.36 b	
18	112.51	228.94	281	126	100	1708	1.11 c	
19	115.03	233.96	277	126	100	1708	1.21 d	
20	128.95	261.79	759	114	82	1348	0.81 a	
21	143.82	291.49	349	115	90	1488	0.91 a	
22	154.03	311.89	545	127	97	1609	1.11 a	
23	163.12	330.03	60	104	85	1331	0.94 a	NET< CL

041061D07.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
24	185.96	375.66	3246	159	92	1432	1.11 a	
25	199.37	402.44	65	59	47	538	0.51 a	Wide Pk
26	204.94	413.57	123	140	114	1792	1.65 b	
27	209.21	422.10	1235	116	76	1075	1.04 c	
28	215.98	435.63	87	112	91	1299	1.31 a	NET< CL
29	235.88	475.37	222	77	59	692	0.79 a	HiResid
30	238.54	480.69	10278	219	67	830	1.00 b	HiResid
31	241.51	486.63	3001	156	92	1245	1.51 c	HiResid
32	256.01	515.58	72	68	54	583	0.85 a	
33	258.74	521.04	135	87	69	817	1.15 b	
34	270.10	543.73	1109	121	83	1013	1.43 a	
35	277.35	558.20	311	81	60	672	0.93 a	
36	295.11	593.68	3987	148	64	700	1.07 a	
37	299.98	603.40	557	84	57	600	0.93 b	
38	327.90	659.14	574	82	55	561	1.05 a	
39	338.24	679.79	2244	118	57	559	1.10 a	
40	340.70	684.71	96	80	64	639	1.37 b	
41	351.84	706.95	6833	178	55	520	1.19 a	
42	365.83	734.89	38	54	43	375	0.89 a	NET< CL
43	401.55	806.21	47	49	38	326	0.66 a	
44	409.32	821.71	262	70	51	515	1.09 a	
45	440.44	883.85	31	38	29	214	0.69 a	
46	462.96	928.81	590	70	42	341	1.12 a	
47	508.94	1020.59	94	61	48	399	1.50 a	
48	510.69	1024.08	857	79	44	355	1.35 b	
49	562.62	1127.72	55	45	35	257	0.93 a	
50	583.18	1168.75	2769	117	42	329	1.30 a	
51	609.34	1220.97	4624	144	40	297	1.37 a	
52	665.38	1332.81	103	46	34	242	1.03 a	
53	702.48	1406.84	67	62	49	371	1.80 a	
54	727.25	1456.26	644	71	41	280	1.61 a	
55	755.18	1511.98	124	54	40	264	1.70 a	
56	768.29	1538.14	442	62	37	243	1.50 a	
57	772.23	1546.01	127	54	41	270	1.58 b	
58	785.74	1572.95	151	46	32	205	1.36 a	
59	794.80	1591.04	346	57	35	227	1.59 a	
60	806.21	1613.79	63	39	30	182	1.30 a	
61	835.54	1672.31	117	36	24	131	1.06 a	
62	840.03	1681.27	65	33	24	131	0.98 b	
63	860.53	1722.17	322	50	29	166	1.48 a	
64	904.42	1809.71	27	25	19	90	0.80 a	
65	911.14	1823.12	2049	98	31	179	1.60 b	
66	934.05	1868.82	199	44	28	146	1.61 a	
67	964.69	1929.93	414	53	28	136	1.83 a	
68	968.99	1938.51	1299	79	26	124	1.59 b	
69	1000.98	2002.33	77	30	20	85	1.34 a	Wide Pk
70	1001.62	2003.60	55	73	59	318	4.95 b	NET< CL
71	1120.41	2240.50	900	67	25	112	1.82 a	
72	1155.18	2309.85	86	35	24	110	1.67 a	

041061D07.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
73	1238.15	2475.31	292	44	22	95	1.76	a
74	1281.07	2560.89	66	34	25	111	2.04	a
75	1377.62	2753.40	231	41	22	93	1.95	a
76	1385.55	2769.23	21	19	14	47	1.01	b
77	1401.35	2800.72	68	32	22	94	1.82	a
78	1407.61	2813.21	79	34	24	103	1.98	b
79	1459.90	2917.45	115	37	25	101	2.60	a
80	1495.99	2989.42	41	27	20	83	1.50	a
81	1509.29	3015.93	77	38	27	127	2.28	a
82	1588.33	3173.52	157	39	25	111	1.90	a
83	1592.46	3181.75	87	34	23	102	1.79	b
84	1620.94	3238.54	72	25	15	42	1.82	a
85	1630.20	3256.99	85	27	17	50	2.14	b
86	1638.09	3272.74	23	23	17	50	2.19	c
87	1661.15	3318.71	40	31	23	78	3.10	a
88	1729.60	3455.17	135	31	17	51	1.96	a
89	1764.36	3524.48	678	56	17	48	2.42	a
90	1846.78	3688.81	83	27	17	51	1.95	a

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET070625.BKG (0418003-37 Weekly Background)

Bkg.File Detector #: 7

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.44	1707	139	92	1692	139	92	
3	53.23	373	87	64	371	87	64	
4	63.28	2193	169	115	2182	169	116	
5	67.72	364	105	81	359	106	81	
7	74.79	5930	239	150	5926	239	150	
8	77.09	10258	260	133	10255	260	134	
11	83.98	2112	181	128	2110	181	128	
14	92.87	3911	207	136	3895	207	136	
18	112.51	281	126	100	280	126	100	
20	128.95	759	114	82	759	114	82	
21	143.82	349	115	90	345	115	90	
24	185.96	3246	159	92	3238	159	92	
25	199.37	65	59	47	61	59	47	
30	238.54	10278	219	67	10271	219	67	
34	270.10	1109	121	83	1109	121	83	
39	338.24	2244	118	57	2242	118	57	
41	351.84	6833	178	55	6831	178	55	
48	510.69	857	79	44	823	79	45	
50	583.18	2769	117	42	2768	117	42	
51	609.34	4624	144	40	4622	144	40	
65	911.14	2049	98	31	2047	98	31	
68	968.99	1299	79	26	1298	79	26	
79	1459.90	115	37	25	112	38	26	

041061D07.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0405097-27 GS040614-2 Code: 041061D07A

Sampling Start:	05/07/2004 12:00:00	Counting Start:	07/02/2004 08:56:51
Sampling Stop:	05/07/2004 12:00:00	Decay Time.	1.34e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	9.50e+001 g	Real Time	1826 Sec
Collection Efficiency	1.0000	Spectrum File	.041061D07.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 7 (Detector 7)

Efficiency File: (D07)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[1.41E-01*En^-1.49E+00 + 9.67E+01*En^9.61E-01] 01/02/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	1.54E+02	+- 6.76E+00	. . . .	. . . .	3.92E+13
	63.29		1.38E+02	+- 1.06E+01	1.48E+01	7.29E+00	3.92E+13
	92.50		1.65E+02	+- 8.75E+00	1.16E+01	5.74E+00	3.92E+13
Eu-155	105.31		8.87E+00	+- 1.55E+00	2.35E+00	1.16E+00	4.35E+04
Pb-212	Average:	x	1.01E+02	+- 2.13E+00	. . . .	. . . .	1.67E+04
	115.18		1.23E+02	+- 5.61E+01	9.02E+01	4.45E+01	1.67E+04
	238.63		1.02E+02	+- 2.16E+00	1.36E+00	6.65E-01	1.67E+04
	300.09		8.90E+01	+- 1.34E+01	1.87E+01	9.11E+00	1.67E+04
U-235	Average:	x	8.76E+00	+- 2.81E+00	. . . .	. . . .	6.17E+12
	143.76		8.76E+00	+- 2.93E+00	4.63E+00	2.28E+00	6.17E+12
	185.72		I.D.	. . . .	. . . .	. . . .	6.17E+12
	205.31		8.79E+00	+- 1.00E+01	1.64E+01	8.12E+00	6.17E+12
Th-227	236.00		7.28E+00	+- 2.53E+00	3.93E+00	1.92E+00	1.90E+05
Tl-208	Average:	x	2.99E+01	+- 1.21E+00	. . . .	. . . .	1.27E+14
	277.36		2.27E+01	+- 5.95E+00	9.01E+00	4.41E+00	1.27E+14
	583.14		3.00E+01	+- 1.27E+00	9.46E-01	4.58E-01	1.27E+14
	860.47		3.44E+01	+- 5.39E+00	6.52E+00	3.12E+00	1.27E+14
Pb-214	Average:	x	1.04E+02	+- 2.22E+00	. . . .	. . . .	1.40E+07
	295.22		1.01E+02	+- 3.77E+00	3.32E+00	1.63E+00	1.40E+07
	351.99		1.05E+02	+- 2.75E+00	1.75E+00	8.52E-01	1.40E+07
Ra-228	Average:	x	1.15E+02	+- 3.52E+00	. . . .	. . . .	5.04E+04
	338.40		1.12E+02	+- 5.86E+00	5.85E+00	2.86E+00	5.04E+04
	911.07		1.13E+02	+- 5.43E+00	3.61E+00	1.73E+00	5.04E+04
	968.90		1.24E+02	+- 7.54E+00	5.24E+00	2.49E+00	5.04E+04
Cs-134	Average:	x	1.58E+00	+- 4.36E-01	. . . .	. . . .	1.81E+04

041061D07.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g	)	MDA	Critical Level	Halflife (hrs)
	563.26		6.18E+00	+- 5.01E+00	8.09E+00	3.89E+00	1.81E+04
	604.66	N	2.45E-01	+- 5.09E-01	8.49E-01B	4.10E-01	1.81E+04
	795.76		5.24E+00	+- 8.56E-01	1.10E+00	5.31E-01	1.81E+04
Bi-214	Average:x		9.65E+01	+- 2.79E+00	. . . .	. . . . .	1.40E+07
	609.32		9.57E+01	+- 2.99E+00	1.72E+00	8.33E-01	1.40E+07
	1120.28		1.02E+02	+- 7.62E+00	6.02E+00	2.85E+00	1.40E+07
Nb-94	702.50		7.42E-01	+- 6.87E-01	1.12E+00	5.45E-01	1.78E+08
Bi-212	727.17		1.17E+02	+- 1.30E+01	1.55E+01	7.49E+00	1.67E+04
Mn-54	834.81		1.71E+00	+- 5.27E-01	7.34E-01	3.47E-01	7.49E+03
Pa-234m	1001.03		1.99E+02	+- 7.86E+01	1.13E+02	5.28E+01	3.92E+13
Ag-110M	Average:x		-2.42E-01	+- 6.41E-01	. . . .	. . . . .	6.00E+03
	1384.27		2.15E+00	+- 1.92E+00	3.06E+00	1.39E+00	6.00E+03
	657.75	N	-5.40E-01	+- 6.80E-01	1.19E+00	5.76E-01	6.00E+03
Eu-152	1408.08		8.11E+00	+- 3.44E+00	5.09E+00	2.41E+00	1.17E+05
K-40	1460.75		2.24E+01	+- 7.52E+00	1.08E+01	5.12E+00	1.12E+13
Am-241	59.54	N	2.44E+00	+- 9.09E-01	1.45E+00B	7.16E-01	3.80E+06
Co-57	122.07	N	1.13E-01	+- 3.68E-01	6.11E-01	3.01E-01	6.48E+03
Ce-144	133.53	N	2.20E-01	+- 3.04E+00	5.07E+00	2.50E+00	6.82E+03
Ce-139	165.85	N	-8.40E-01	+- 5.17E-01	8.90E-01	4.38E-01	3.30E+03
Cr-51	320.07	N	4.67E+00	+- 1.57E+01	2.62E+01	1.28E+01	6.65E+02
I-131	364.48	N	6.10E+01	+- 5.90E+01	9.64E+01	4.70E+01	1.93E+02
Sb-125	427.95	N	3.44E-01	+- 1.38E+00	2.32E+00	1.13E+00	2.43E+04
Be-7	477.56	N	-5.06E+00	+- 8.65E+00	1.49E+01	7.25E+00	1.28E+03
Sb-124	602.71	N	4.39E-01	+- 9.11E-01	1.52E+00	7.35E-01	1.44E+03
Ru-106	621.84	N	-1.54E+00	+- 5.33E+00	9.17E+00	4.43E+00	8.84E+03
Cs-137	661.62	N	7.03E-01	+- 6.50E-01	1.06E+00B	5.12E-01	2.64E+05
Nb-95	765.82	N	-2.99E+00	+- 1.93E+00	3.44E+00R	1.69E+00	1.54E+03
Co-58	810.75	N	3.61E-01	+- 8.17E-01	1.37E+00b	6.56E-01	1.70E+03
Sc-46	889.26	N	-9.34E-01	+- 8.72E-01	1.57E+00	7.55E-01	2.01E+03
Eu-154	1004.80	N	-4.32E+00	+- 3.84E+00	7.16E+00r	3.46E+00	7.45E+04
Fe-59	1099.22	N	-2.23E+00	+- 2.28E+00	4.17E+00	1.99E+00	1.08E+03
Zn-65	1115.52	N	-8.98E-01	+- 1.86E+00	3.29E+00R	1.59E+00	5.85E+03
Co-56	1238.28	N	1.53E+01	+- 3.52E+00	4.41E+00r	2.14E+00	1.86E+03
Na-22	1274.54	N	-2.21E-01	+- 5.93E-01	1.05E+00B	5.00E-01	2.28E+04
Co-60	1332.51	N	-1.23E-01	+- 5.73E-01	1.01E+00	4.79E-01	4.62E+04
Al-26	1808.65	N	6.59E-01	+- 5.69E-01	9.00E-01	4.13E-01	6.31E+09

MEASURED TOTAL: 1.06E+03 +- 2.17E+02 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.44	96.93	1692	139	92	1703	0.75	Unknown
2	50.03	104.09	236	100	78	1362	0.66	Unknown
3	53.23	110.48	371	87	64	1022	0.54	Unknown
5	67.72	139.44	359	106	81	1610	0.43	Unknown

041061D07.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
6	72.70	149.39	188	131	106	2476	0.73	Unknown
7	74.79	153.57	5926	239	150	4146	1.18	Unknown
8	77.09	158.17	10255	260	134	3290	0.90	Unknown
9	79.31	162.60	289	114	90	1781	1.16	Unknown
10	80.50	164.98	936	206	161	3849	1.31	Unknown
11	83.98	171.93	2110	181	128	2804	1.20	Unknown
12	87.16	178.29	-351	238	198	6672	0.19	Deleted
13	89.87	183.70	-4733	256	239	9750	51.52	Deleted
15	99.36	202.66	62	256	210	4889	0.12	Deleted
17	108.94	221.80	310	139	111	1952	1.36	Unknown
18	112.51	228.94	280	126	100	1708	1.11	Unknown
20	128.95	261.79	759	114	82	1348	0.81	Unknown
22	154.03	311.89	545	127	97	1609	1.11	Unknown
23	163.12	330.03	60	104	85	1331	0.94	Deleted
25	199.37	402.44	61	59	47	538	0.51	Unknown
27	209.21	422.10	1235	116	76	1075	1.04	Unknown
28	215.98	435.63	87	112	91	1299	1.31	Deleted
31	241.51	486.63	3001	156	92	1245	1.51	Unknown
32	256.01	515.58	72	68	54	583	0.85	Unknown
33	258.74	521.04	135	87	69	817	1.15	Unknown
34	270.10	543.73	1109	121	83	1013	1.43	Unknown
38	327.90	659.14	574	82	55	561	1.05	Unknown
40	340.70	684.71	96	80	64	639	1.37	Unknown
42	365.83	734.89	38	54	43	375	0.89	Deleted
43	401.55	806.21	47	49	38	326	0.66	Unknown
44	409.32	821.71	262	70	51	515	1.09	Unknown
45	440.44	883.85	31	38	29	214	0.69	Unknown
46	462.96	928.81	590	70	42	341	1.12	Unknown
47	508.94	1020.59	94	61	48	399	1.50	Unknown
48	510.69	1024.08	823	79	45	355	1.35	Unknown
52	665.38	1332.81	103	46	34	242	1.03	Unknown
55	755.18	1511.98	124	54	40	264	1.70	Unknown
56	768.29	1538.14	442	62	37	243	1.50	Unknown
57	772.23	1546.01	127	54	41	270	1.58	Unknown
58	785.74	1572.95	151	46	32	205	1.36	Unknown
60	806.21	1613.79	63	39	30	182	1.30	Unknown
62	840.03	1681.27	65	33	24	131	0.98	Unknown
64	904.42	1809.71	27	25	19	90	0.80	Unknown
66	934.05	1868.82	199	44	28	146	1.61	Unknown
67	964.69	1929.93	414	53	28	136	1.83	Unknown
70	1001.62	2003.60	55	73	59	318	4.95	Deleted
72	1155.18	2309.85	86	35	24	110	1.67	Unknown
73	1238.15	2475.31	292	44	22	95	1.76	Unknown
74	1281.07	2560.89	66	34	25	111	2.04	Unknown
75	1377.62	2753.40	231	41	22	93	1.95	Unknown
77	1401.35	2800.72	68	32	22	94	1.82	Unknown
80	1495.99	2989.42	41	27	20	83	1.50	Unknown
81	1509.29	3015.93	77	38	27	127	2.28	Unknown
82	1588.33	3173.52	157	39	25	111	1.90	Unknown

041061D07.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
83	1592.46	3181.75	87	34	23	102	1.79	Unknown
84	1620.94	3238.54	72	25	15	42	1.82	Unknown
85	1630.20	3256.99	85	27	17	50	2.14	Unknown
86	1638.09	3272.74	23	23	17	50	2.19	Unknown
87	1661.15	3318.71	40	31	23	78	3.10	Unknown
88	1729.60	3455.17	135	31	17	51	1.96	Unknown
89	1764.36	3524.48	678	56	17	48	2.42	Unknown
90	1846.78	3688.81	83	27	17	51	1.95	Unknown

041031D08.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-28 GS040611-1 Code: 041031D08A

Sampling Start:	05/06/2004 12:00:00	Counting Start:	06/23/2004 07:34:00
Sampling Stop:	05/06/2004 12:00:00	Decay Time.	1.15E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.52E+000 g	Real Time	3609 Sec
Collection Efficiency	1.0000	Spc. File	.041031D08.SPC

Detector #: 8 (Detector 8)

Energy(keV)= -0.36 + 0.500*Ch +-5.25E-07*Ch^2 + 1.84E-10*Ch^3 06/23/2004
FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG	
1	46.45	93.55	700	77	46	420	0.86	a	
2	53.24	107.11	90	60	47	437	0.80	a	
3	63.29	127.19	203	66	49	529	0.72	a	
4	74.81	150.22	855	91	57	653	0.80	a	
5	77.09	154.78	1404	102	57	653	0.80	b	
6	81.20	163.00	15	37	29	239	0.39	a	NET< CL
7	83.98	168.55	125	60	45	457	0.67	b	
8	87.14	174.87	406	75	52	542	0.85	c	
9	89.90	180.37	325	71	50	504	0.79	d	
10	92.95	186.47	583	83	55	563	1.02	e	
11	99.56	199.68	82	46	35	275	0.73	a	
12	105.50	211.56	92	70	55	518	1.07	a	
13	108.91	218.37	26	38	30	222	0.42	b	NET< CL
14	115.36	231.26	29	36	28	193	0.57	a	
15	129.10	258.74	188	56	40	326	0.87	a	
16	143.84	288.19	123	54	40	328	0.87	a	
17	154.16	308.82	117	66	51	443	1.09	a	
18	185.99	372.47	874	79	43	338	0.97	a	
19	209.37	419.20	230	50	33	218	0.85	a	
20	238.72	477.89	1216	81	35	221	0.93	a	
21	241.94	484.33	432	63	39	258	1.10	b	
22	270.36	541.16	256	58	40	234	1.44	a	
23	277.48	555.40	66	48	37	219	1.38	a	
24	295.31	591.06	843	68	30	162	1.05	a	

041031D08.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
25	300.15	600.72	54	43	33	189	1.12	b	
26	328.10	656.62	147	51	37	188	1.64	a	
27	338.47	677.36	490	57	30	153	1.07	a	
28	352.06	704.54	1508	84	26	129	1.14	a	
29	409.59	819.59	69	29	20	92	0.83	a	
30	463.14	926.69	129	33	19	80	1.02	a	
31	510.91	1022.23	204	40	23	90	1.41	a	
32	583.38	1167.17	358	45	19	74	1.23	a	
33	609.48	1219.35	1146	72	21	83	1.27	a	
34	727.22	1454.80	61	27	18	66	1.38	a	
35	768.56	1537.45	81	27	17	58	1.25	a	
36	772.24	1544.81	36	25	18	65	1.53	b	
37	785.96	1572.23	27	18	12	38	0.86	a	
38	795.08	1590.48	83	25	14	43	1.07	a	
39	806.01	1612.33	28	22	16	54	1.26	a	
40	835.38	1671.03	15	21	16	57	1.16	a	NET< CL
41	860.80	1721.85	50	24	16	50	1.70	a	
42	911.14	1822.45	476	47	14	38	1.39	a	
43	934.31	1868.76	63	22	12	32	1.24	a	
44	964.67	1929.40	92	27	15	44	1.47	a	
45	968.99	1938.03	289	39	15	44	1.55	b	
46	1120.52	2240.66	206	33	13	33	1.57	a	
47	1155.38	2310.24	25	19	13	35	1.76	a	
48	1238.22	2475.55	76	21	10	20	1.60	a	
49	1377.90	2754.06	51	20	12	27	1.77	a	
50	1408.61	2815.24	23	16	10	22	1.67	a	
51	1589.21	3174.79	45	19	11	24	1.59	a	
52	1731.20	3457.01	34	15	8	12	1.94	a	
53	1766.32	3526.76	164	27	8	11	2.24	a	
54	1850.00	3692.83	18	12	7	11	1.71	a	

041031D08.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET080618.BKG (0418003-28 Weekly Background)

Bkg.File Detector #: 8

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.45	700	77	46	666	77	47	
3	63.29	203	66	49	170	67	50	
4	74.81	855	91	57	845	91	58	
5	77.09	1404	102	57	1396	102	58	
7	83.98	125	60	45	117	60	46	
10	92.95	583	83	55	533	83	57	
16	143.84	123	54	40	117	55	42	
18	185.99	874	79	43	852	79	44	
20	238.72	1216	81	35	1201	82	36	
24	295.31	843	68	30	837	69	31	
27	338.47	490	57	30	486	58	31	
28	352.06	1508	84	26	1503	84	27	
31	510.91	204	40	23	109	42	30	
32	583.38	358	45	19	350	45	21	
33	609.48	1146	72	21	1141	73	23	
42	911.14	476	47	14	471	47	15	
53	1766.32	164	27	8	163	27	8	

041031D08.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-28 GS040611-1 Code: 041031D08A

Sampling Start:	05/06/2004 12:00:00	Counting Start:	06/23/2004 07:34:00
Sampling Stop:	05/06/2004 12:00:00	Decay Time.	1.15e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	3600 Sec
Sample Size	1.52e+000 g	Real Time	3609 Sec
Collection Efficiency	1.0000	Spectrum File	.041031D08.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 8 (Detector 8)

Efficiency File: (D08)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[5.00E-01*En^-1.24E+00 + 1.20E+02*En^8.79E-01] 10/29/2003

Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	9.10E+02	+- 1.39E+02	. . . .	. . . .	3.92E+13
	63.29		5.55E+02	+- 2.18E+02	3.39E+02	1.65E+02	3.92E+13
	92.50		1.15E+03	+- 1.81E+02	2.54E+02	1.24E+02	3.92E+13
Eu-155	105.31		5.37E+01	+- 4.08E+01	6.61E+01	3.22E+01	4.35E+04
Pb-212	Average:	x	5.27E+02	+- 3.57E+01	. . . .	. . . .	1.67E+04
	115.18		6.35E+02	+- 7.87E+02	1.30E+03	6.18E+02	1.67E+04
	238.63		5.29E+02	+- 3.60E+01	3.27E+01	1.57E+01	1.67E+04
	300.09		3.72E+02	+- 2.98E+02	4.80E+02	2.30E+02	1.67E+04
U-235	143.76		1.44E+02	+- 6.76E+01	1.06E+02	5.12E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	. . . .	6.17E+12
Tl-208	Average:	x	1.57E+02	+- 1.94E+01	. . . .	. . . .	1.27E+14
	277.36		2.12E+02	+- 1.55E+02	2.48E+02	1.20E+02	1.27E+14
	583.14		1.54E+02	+- 1.99E+01	1.95E+01	9.18E+00	1.27E+14
	860.47		2.09E+02	+- 1.02E+02	1.49E+02	6.89E+01	1.27E+14
Pb-214	Average:	x	9.70E+02	+- 4.49E+01	. . . .	. . . .	1.40E+07
	295.22		9.29E+02	+- 7.66E+01	7.17E+01	3.43E+01	1.40E+07
	351.99		9.91E+02	+- 5.54E+01	3.71E+01	1.77E+01	1.40E+07
Ra-228	Average:	x	1.04E+03	+- 6.86E+01	. . . .	. . . .	5.04E+04
	338.40		1.04E+03	+- 1.23E+02	1.37E+02	6.56E+01	5.04E+04
	911.07		1.01E+03	+- 1.01E+02	6.89E+01	3.16E+01	5.04E+04
	968.90		1.07E+03	+- 1.43E+02	1.22E+02	5.58E+01	5.04E+04
Bi-212	727.17		4.37E+02	+- 1.92E+02	2.76E+02	1.28E+02	1.67E+04
Bi-214	Average:	x	8.93E+02	+- 1.30E+02	. . . .	. . . .	1.40E+07
	1120.28		8.93E+02	+- 1.42E+02	1.23E+02	5.57E+01	1.40E+07
	609.32		8.93E+02	+- 3.32E+02	5.20E+02	2.59E+02	1.40E+07

089377

041031D08.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Eu-152	1408.08		8.88E+01 +- 6.04E+01	8.98E+01	3.97E+01	1.17E+05
Am-241	59.54	N	-1.34E+00 +- 2.43E+01	4.10E+01	2.00E+01	3.80E+06
Co-57	122.07	N	-5.56E-01 +- 7.98E+00	1.36E+01	6.58E+00	6.48E+03
Ce-144	133.53	N	1.98E+01 +- 6.58E+01	1.11E+02	5.35E+01	6.82E+03
Ce-139	165.85	N	5.26E+00 +- 1.23E+01	2.05E+01	9.94E+00	3.30E+03
Th-227	236.00	N	7.37E+00 +- 6.47E+01	1.10E+02B	5.29E+01	1.90E+05
Pa-231	302.67	N	-2.89E+02 +- 5.92E+02	1.01E+03P	4.94E+02	7.87E+05
Cr-51	320.07	N	-1.18E+02 +- 2.84E+02	4.98E+02	2.39E+02	6.65E+02
I-131	364.48	N	1.62E+02 +- 5.18E+02	8.84E+02	4.16E+02	1.93E+02
Sb-125	427.95	N	2.08E+01 +- 3.07E+01	5.09E+01	2.41E+01	2.43E+04
Be-7	477.56	N	-1.89E+02 +- 1.60E+02	2.98E+02	1.42E+02	1.28E+03
Sb-124	602.71	N	7.52E+00 +- 1.91E+01	3.24E+01	1.53E+01	1.44E+03
Cs-134	604.66	N	6.32E+00 +- 1.16E+01	1.95E+01B	9.17E+00	1.81E+04
Ru-106	621.84	N	8.11E+01 +- 1.18E+02	1.96E+02	9.20E+01	8.84E+03
Ag-110M	657.75	N	-6.67E+00 +- 1.31E+01	2.37E+01	1.12E+01	6.00E+03
Cs-137	661.62	N	-7.04E+00 +- 1.33E+01	2.40E+01	1.13E+01	2.64E+05
Nb-94	702.50	N	4.62E+00 +- 1.25E+01	2.11E+01	9.97E+00	1.78E+08
Nb-95	765.82	N	3.16E+00 +- 3.13E+01	5.30E+01R	2.54E+01	1.54E+03
Co-58	810.75	N	1.27E+01 +- 1.68E+01	2.77E+01b	1.28E+01	1.70E+03
Mn-54	834.81	N	3.95E+00 +- 1.40E+01	2.41E+01	1.13E+01	7.49E+03
Sc-46	889.26	N	-5.41E+00 +- 1.62E+01	2.97E+01	1.38E+01	2.01E+03
Pa-234m	1001.03	N	-1.71E+02 +- 2.01E+03	3.61E+03	1.67E+03	3.92E+13
Eu-154	1004.80	N	-3.28E+01 +- 6.65E+01	1.24E+02	5.73E+01	7.45E+04
Fe-59	1099.22	N	-1.90E+01 +- 4.25E+01	7.98E+01	3.67E+01	1.08E+03
Zn-65	1115.52	N	5.90E+00 +- 3.83E+01	6.54E+01R	3.07E+01	5.85E+03
Co-56	1238.28	N	1.72E+02 +- 6.72E+01	8.31E+01r	3.93E+01	1.86E+03
Na-22	1274.54	N	-1.28E+01 +- 1.42E+01	2.75E+01	1.27E+01	2.28E+04
Co-60	1332.51	N	1.10E+00 +- 1.31E+01	2.34E+01	1.07E+01	4.62E+04
K-40	1460.75	N	6.52E+01 +- 1.41E+02	2.41E+02	1.10E+02	1.12E+13
Al-26	1808.65	N	2.33E+00 +- 1.21E+01	2.19E+01	9.60E+00	6.31E+09

MEASURED TOTAL: 5.80E+03 +- 1.99E+03 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.45	93.55	666	77	47	420	0.86	Unknown
2	53.24	107.11	90	60	47	437	0.80	Unknown
4	74.81	150.22	845	91	58	653	0.80	Unknown
5	77.09	154.78	1396	102	58	653	0.80	Unknown
6	81.20	163.00	15	37	29	239	0.39	Deleted
7	83.98	168.55	117	60	46	457	0.67	Unknown
8	87.14	174.87	406	75	52	542	0.85	Unknown
9	89.90	180.37	325	71	50	504	0.79	Unknown
11	99.56	199.68	82	46	35	275	0.73	1121DEsc
13	108.91	218.37	26	38	30	222	0.42	Deleted

041031D08.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
15	129.10	258.74	188	56	40	326	0.87	Unknown
17	154.16	308.82	117	66	51	443	1.09	Unknown
19	209.37	419.20	230	50	33	218	0.85	Unknown
21	241.94	484.33	432	63	39	258	1.10	Unknown
22	270.36	541.16	256	58	40	234	1.44	Unknown
26	328.10	656.62	147	51	37	188	1.64	Unknown
29	409.59	819.59	69	29	20	92	0.83	Unknown
30	463.14	926.69	129	33	19	80	1.02	Unknown
31	510.91	1022.23	109	42	30	90	1.41	Unknown
33	609.48	1219.35	1141	73	23	83	1.27	SPLIT
35	768.56	1537.45	81	27	17	58	1.25	Unknown
36	772.24	1544.81	36	25	18	65	1.53	Unknown
37	785.96	1572.23	27	18	12	38	0.86	Unknown
38	795.08	1590.48	83	25	14	43	1.07	Unknown
39	806.01	1612.33	28	22	16	54	1.26	Unknown
40	835.38	1671.03	15	21	16	57	1.16	Deleted
43	934.31	1868.76	63	22	12	32	1.24	Unknown
44	964.67	1929.40	92	27	15	44	1.47	Unknown
47	1155.38	2310.24	25	19	13	35	1.76	Unknown
48	1238.22	2475.55	76	21	10	20	1.60	Unknown
49	1377.90	2754.06	51	20	12	27	1.77	Unknown
51	1589.21	3174.79	45	19	11	24	1.59	Unknown
52	1731.20	3457.01	34	15	8	12	1.94	Unknown
53	1766.32	3526.76	163	27	8	11	2.24	Unknown
54	1850.00	3692.83	18	12	7	11	1.71	Unknown
56	609.48	1219.35	76	805	23	83	1.27	1121SEsc

040961D07.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-29 GS040611-1 Code: 040961D07A

Sampling Start:	05/06/2004 12:00:00	Counting Start:	06/23/2004 08:42:55
Sampling Stop:	05/06/2004 12:00:00	Decay Time.	1.15E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.36E+000 g	Real Time	3610 Sec
Collection Efficiency	1.0000	Spc. File	.040961D07.SPC

Detector #: 7 (Detector 7)

Energy(keV) = -2.32 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/23/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.27	96.97	186	42	26	138	0.78 a	
2	52.90	110.19	38	35	27	151	0.90 a	
3	63.09	130.54	115	51	38	242	1.11 a	Wide Pk
4	66.20	136.74	70	68	54	380	1.84 b	
5	74.65	153.61	188	50	34	217	0.91 a	
6	76.95	158.20	337	52	30	181	0.79 b	
7	83.62	171.50	40	31	23	120	0.64 a	
8	86.97	178.18	89	38	27	150	0.87 b	
9	89.82	183.87	106	43	31	180	0.91 c	
10	92.92	190.06	198	55	39	240	1.30 d	
11	128.89	261.84	53	30	22	98	0.82 a	
12	185.83	375.47	213	48	31	155	1.25 a	
13	198.32	400.40	34	33	26	112	1.08 a	
14	209.11	421.93	49	28	20	81	0.76 a	
15	238.48	480.56	249	44	25	105	1.12 a	
16	241.59	486.76	83	35	25	105	1.09 b	
17	269.98	543.41	66	39	30	102	2.16 a	Wide Pk
18	295.21	593.76	191	35	18	60	0.98 a	
19	300.20	603.72	15	18	13	40	0.65 b	
20	327.80	658.80	23	18	13	37	0.58 a	
21	338.33	679.81	114	30	18	57	0.93 a	
22	351.92	706.93	351	41	15	37	1.16 a	
23	409.27	821.39	23	22	17	51	1.31 a	
24	463.07	928.76	43	22	15	40	1.31 a	

040961D07.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	510.86	1024.14	84	33	22	70	2.06 a	Wide Pk
26	583.33	1168.75	69	27	17	52	1.46 a	
27	609.47	1220.93	232	34	13	33	1.24 a	
28	768.17	1537.63	39	18	11	21	1.44 a	
29	795.30	1591.77	20	13	8	17	0.90 a	
30	911.30	1823.27	96	22	8	14	1.29 a	
31	968.93	1938.28	39	18	11	27	1.14 a	
32	1120.54	2240.83	48	18	9	16	1.62 a	
33	1763.77	3524.51	24	12	6	5	2.09 a	

040961D07.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET070618.BKG (0418003-27 Weekly Background)

Bkg.File Detector #: 7

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.27	186	42	26	157	43	29	
2	52.90	38	35	27	34	36	28	
3	63.09	115	51	38	93	52	39	
4	66.20	70	68	54	62	68	55	
5	74.65	188	50	34	182	51	36	
6	76.95	337	52	30	333	52	31	
7	83.62	40	31	23	30	33	26	
8	86.97	89	38	27	85	39	28	
10	92.92	198	55	39	167	56	41	
12	185.83	213	48	31	198	49	33	
13	198.32	34	33	26	26	35	27	NET<CL
15	238.48	249	44	25	233	44	27	
18	295.21	191	35	18	188	36	19	
22	351.92	351	42	15	345	42	16	
25	510.86	84	33	22	16	35	28	NET<CL
26	583.33	69	27	17	64	27	18	
27	609.47	232	34	13	227	35	15	
30	911.30	96	22	8	94	23	10	

040961D07.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-29 GS040611-1 Code: 040961D07A

Sampling Start:	05/06/2004 12:00:00	Counting Start:	06/23/2004 08:42:55
Sampling Stop:	05/06/2004 12:00:00	Decay Time.	1.15e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	3600 Sec
Sample Size	1.36e+000 g	Real Time	3610 Sec
Collection Efficiency	1.0000	Spectrum File	.040961D07.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 7 (Detector 7)

Efficiency File: (D07)(Sh01).EFF (Geo 1 Eff CaL)

Eff.=1/[4.38E-01*En^-1.35E+00 + 1.62E+02*En^9.38E-01] 01/23/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	4.46E+02 +- 1.28E+02	. . . .	. . . .	3.92E+13
	63.29		3.99E+02 +- 2.21E+02	3.49E+02	1.69E+02	3.92E+13
	92.50		4.71E+02 +- 1.58E+02	2.38E+02	1.15E+02	3.92E+13
U-235	143.76	N	5.71E+01 +- 5.57E+01	9.03E+01	4.30E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	Average:	x	1.42E+02 +- 2.67E+01	. . . .	. . . .	1.67E+04
	238.63		1.42E+02 +- 2.70E+01	3.40E+01	1.62E+01	1.67E+04
	300.09		1.51E+02 +- 1.76E+02	2.88E+02	1.31E+02	1.67E+04
Pb-214	Average:	x	3.14E+02 +- 3.22E+01	. . . .	. . . .	1.40E+07
	295.22		2.93E+02 +- 5.57E+01	6.31E+01	2.95E+01	1.40E+07
	351.99		3.24E+02 +- 3.95E+01	3.32E+01	1.53E+01	1.40E+07
Ra-228	Average:	x	2.99E+02 +- 5.03E+01	. . . .	. . . .	5.04E+04
	338.40		3.45E+02 +- 9.13E+01	1.15E+02	5.32E+01	5.04E+04
	911.07		3.07E+02 +- 7.40E+01	7.26E+01	3.19E+01	5.04E+04
	968.90		2.22E+02 +- 1.04E+02	1.42E+02	6.32E+01	5.04E+04
Sb-125	Average:	x	1.16E+01 +- 2.42E+01	. . . .	. . . .	2.43E+04
	463.51		1.89E+02 +- 9.71E+01	1.41E+02	6.44E+01	2.43E+04
	427.95	N	-1.78E-01 +- 2.50E+01	4.50E+01	2.06E+01	2.43E+04
Tl-208	583.14		4.16E+01 +- 1.77E+01	2.54E+01	1.18E+01	1.27E+14
Bi-214	Average:	x	2.85E+02 +- 4.06E+01	. . . .	. . . .	1.40E+07
	609.32		2.81E+02 +- 4.33E+01	3.96E+01	1.82E+01	1.40E+07
	1120.28		3.16E+02 +- 1.18E+02	1.42E+02	6.19E+01	1.40E+07
Cs-134	Average:	x	6.70E+00 +- 7.58E+00	. . . .	. . . .	1.81E+04
	795.76		1.82E+01 +- 1.19E+01	1.70E+01	7.29E+00	1.81E+04
	604.66	N	-1.21E+00 +- 9.85E+00	1.81E+01B	8.22E+00	1.81E+04

040961D07.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54	N	-1.76E-01 +- 1.75E+01	3.01E+01B	1.44E+01	3.80E+06
Eu-155	105.31	N	4.26E+01 +- 2.39E+01	3.67E+01	1.73E+01	4.35E+04
Co-57	122.07	N	-5.98E-01 +- 7.15E+00	1.24E+01	5.91E+00	6.48E+03
Ce-144	133.53	N	-3.15E+01 +- 5.60E+01	1.00E+02	4.76E+01	6.82E+03
Ce-139	165.85	N	-3.07E-01 +- 9.34E+00	1.62E+01	7.70E+00	3.30E+03
Th-227	236.00	N	4.59E+00 +- 1.18E+03	1.95E+03P	9.70E+02	1.90E+05
Cr-51	320.07	N	-2.60E+02 +- 2.60E+02	4.90E+02	2.31E+02	6.65E+02
I-131	364.48	N	1.18E+02 +- 5.17E+02	9.04E+02	4.15E+02	1.93E+02
Be-7	477.56	N	4.84E+01 +- 1.44E+02	2.50E+02	1.14E+02	1.28E+03
Sb-124	602.71	N	3.99E+00 +- 1.62E+01	2.85E+01	1.29E+01	1.44E+03
Ru-106	621.84	N	-5.83E+01 +- 1.03E+02	1.98E+02	9.05E+01	8.84E+03
Ag-110M	657.75	N	-2.42E+00 +- 1.14E+01	2.13E+01	9.64E+00	6.00E+03
Cs-137	661.62	N	-1.81E-01 +- 1.14E+01	2.08E+01	9.40E+00	2.64E+05
Nb-94	702.50	N	-8.30E-01 +- 1.19E+01	2.15E+01	9.85E+00	1.78E+08
Bi-212	727.17	N	1.87E+01 +- 1.95E+02	3.46E+02	1.59E+02	1.67E+04
Nb-95	765.82	N	-1.89E+01 +- 2.40E+01	4.84E+01R	2.26E+01	1.54E+03
Co-58	810.75	N	-1.10E+01 +- 1.48E+01	3.04E+01	1.36E+01	1.70E+03
Mn-54	834.81	N	1.10E+00 +- 1.29E+01	2.33E+01	1.05E+01	7.49E+03
Sc-46	889.26	N	-1.20E+00 +- 1.50E+01	2.83E+01	1.25E+01	2.01E+03
Pa-234m	1001.03	N	2.14E+03 +- 1.56E+03	2.16E+03	8.71E+02	3.92E+13
Eu-154	1004.80	N	-1.02E+01 +- 5.57E+01	1.08E+02	4.73E+01	7.45E+04
Fe-59	1099.22	N	-1.49E+01 +- 4.85E+01	9.33E+01	4.17E+01	1.08E+03
Zn-65	1115.52	N	1.40E+01 +- 2.25E+01	3.81E+01B	1.60E+01	5.85E+03
Co-56	1238.28	N	4.51E+01 +- 3.09E+01	4.36E+01	1.84E+01	1.86E+03
Na-22	1274.54	N	-1.41E+01 +- 1.33E+01	2.88E+01	1.28E+01	2.28E+04
Co-60	1332.51	N	6.00E+00 +- 1.10E+01	1.90E+01	7.90E+00	4.62E+04
Eu-152	1408.08	N	2.98E+01 +- 6.41E+01	1.12E+02	4.80E+01	1.17E+05
K-40	1460.75	N	7.29E+01 +- 1.69E+02	2.93E+02	1.31E+02	1.12E+13
Al-26	1808.65	N	2.10E+00 +- 1.07E+01	2.07E+01	8.24E+00	6.31E+09

MEASURED TOTAL: 4.15E+03 +- 4.34E+03 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.27	96.97	157	43	29	138	0.78	Unknown
2	52.90	110.19	34	36	28	151	0.90	Unknown
4	66.20	136.74	62	68	55	380	1.84	Unknown
5	74.65	153.61	182	51	36	217	0.91	Unknown
6	76.95	158.20	333	52	31	181	0.79	Unknown
7	83.62	171.50	30	33	26	120	0.64	Unknown
8	86.97	178.18	85	39	28	150	0.87	Unknown
9	89.82	183.87	106	43	31	180	0.91	Unknown
11	128.89	261.84	53	30	22	98	0.82	Unknown
13	198.32	400.40	26	35	27	112	1.08	Deleted
14	209.11	421.93	49	28	20	81	0.76	Unknown

040961D07.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
16	241.59	486.76	83	35	25	105	1.09	Unknown
17	269.98	543.41	66	39	30	102	2.16	Unknown
20	327.80	658.80	23	18	13	37	0.58	Unknown
23	409.27	821.39	23	22	17	51	1.31	Unknown
25	510.86	1024.14	16	35	28	70	2.06	Deleted
28	768.17	1537.63	39	18	11	21	1.44	Unknown
33	1763.77	3524.51	24	12	6	5	2.09	Unknown

041032D08.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-30 GS040611-1 Code: 041032D08A

Sampling Start:	05/06/2004 12:00:00	Counting Start:	06/23/2004 08:43:04
Sampling Stop:	05/06/2004 12:00:00	Decay Time.	1.15E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.19E+000 g	Real Time	3610 Sec
Collection Efficiency	1.0000	Spc. File	.041032D08.SPC

Detector #: 8 (Detector 8)

Energy(keV)= -0.36 + 0.500*Ch +-5.25E-07*Ch^2 + 1.84E-10*Ch^3 06/23/2004
FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG	
1	46.41	93.47	178	39	23	106	0.90	a	
2	53.21	107.04	40	39	31	172	1.02	a	
3	63.50	127.62	106	74	58	420	1.97	a	Wide Pk
4	66.53	133.67	40	23	16	70	0.38	b	
5	74.81	150.22	188	45	29	170	0.83	a	
6	77.13	154.86	278	45	25	136	0.73	b	
7	83.87	168.33	39	33	25	126	0.75	a	
8	87.23	175.04	123	45	32	176	1.21	b	
9	89.84	180.27	86	36	25	126	0.86	c	
10	93.04	186.66	187	51	36	201	1.38	d	
11	99.11	198.79	31	38	30	149	1.10	a	
12	105.63	211.81	25	26	20	87	0.58	a	
13	129.17	258.87	57	28	20	87	0.70	a	
14	139.93	280.39	28	24	17	75	0.52	a	
15	186.01	372.50	226	43	25	114	0.97	a	
16	209.36	419.19	37	24	17	63	0.65	a	
17	238.70	477.84	242	41	22	86	1.00	a	
18	241.90	484.25	94	35	24	100	1.15	b	
19	270.23	540.89	33	29	22	84	1.07	a	
20	295.31	591.05	218	36	17	54	0.99	a	
21	328.03	656.47	28	21	15	46	0.89	a	
22	338.35	677.12	95	26	14	38	0.86	a	
23	352.03	704.48	336	41	15	42	1.22	a	
24	463.09	926.59	26	23	17	48	1.42	a	

041032D08.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	510.86	1022.14	106	39	27	85	2.75 a	Wide Pk
26	558.63	1117.66	21	20	15	39	1.55 a	
27	583.23	1166.86	65	27	17	53	1.48 a	
28	609.42	1219.24	257	35	12	25	1.33 a	
29	727.51	1455.38	28	20	14	34	1.80 a	
30	911.15	1822.47	109	23	8	14	1.19 a	
31	968.72	1937.50	47	21	13	34	1.27 a	
32	1120.28	2240.19	43	17	9	16	1.65 a	
33	1238.41	2475.93	9	13	10	17	2.12 a	NET< CL
34	1766.05	3526.22	37	14	5	6	1.70 a	

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041032D08.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET080618.BKG (0418003-28 Weekly Background)

Bkg.File Detector #: 8

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.41	178	39	23	144	40	26	
3	63.50	106	74	58	73	75	60	
4	66.53	40	23	16	25	26	20	
5	74.81	188	45	29	178	45	30	
6	77.13	278	45	25	269	46	26	
7	83.87	39	33	25	32	34	26	
10	93.04	187	51	36	137	53	39	
14	139.93	28	24	17	20	26	20	
15	186.01	226	43	25	204	43	27	
17	238.70	242	41	22	227	41	23	
20	295.31	218	36	17	212	37	19	
22	338.35	95	26	14	91	27	15	
23	352.03	336	41	15	330	42	17	
25	510.86	106	39	27	12	41	33	NET<CL
26	558.63	21	20	15	12	21	17	NET<CL
27	583.23	65	27	17	57	28	19	
28	609.42	257	35	12	252	36	14	
30	911.15	109	23	8	104	23	10	
34	1766.05	37	14	5	36	14	6	

041032D08.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0405097-30 GS040611-1 Code: 041032D08A

Sampling Start:	05/06/2004 12:00:00	Counting Start:	06/23/2004 08:43:04
Sampling Stop:	05/06/2004 12:00:00	Decay Time.	1.15e+003 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	3600 Sec
Sample Size	1.19e+000 g	Real Time	3610 Sec
Collection Efficiency	1.0000	Spectrum File	.041032D08.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 8 (Detector 8)

Efficiency File: (D08)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[5.00E-01*En^-1.24E+00 + 1.20E+02*En^8.79E-01] 10/29/2003

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Th-234	Average:	x	3.69E+02 +- 1.33E+02	. . . .	. . . .	3.92E+13
	63.29		3.06E+02 +- 3.14E+02	5.14E+02	2.51E+02	3.92E+13
	92.50		3.83E+02 +- 1.46E+02	2.23E+02	1.08E+02	3.92E+13
Eu-155	105.31		1.91E+01 +- 1.96E+01	3.19E+01	1.49E+01	4.35E+04
U-235	143.76	N	1.32E+01 +- 5.04E+01	8.58E+01	4.08E+01	6.17E+12
	185.72		I.D.	. . . .	. . . .	6.17E+12
Pb-212	238.63		1.29E+02 +- 2.34E+01	2.80E+01	1.32E+01	1.67E+04
Pb-214	Average:	x	2.87E+02 +- 2.94E+01	. . . .	. . . .	1.40E+07
	295.22		3.03E+02 +- 5.34E+01	5.90E+01	2.76E+01	1.40E+07
	351.99		2.80E+02 +- 3.53E+01	3.05E+01	1.41E+01	1.40E+07
Ra-228	Average:	x	2.62E+02 +- 4.36E+01	. . . .	. . . .	5.04E+04
	338.40		2.51E+02 +- 7.34E+01	9.18E+01	4.22E+01	5.04E+04
	911.07		2.87E+02 +- 6.48E+01	6.07E+01	2.66E+01	5.04E+04
	968.90		2.23E+02 +- 9.93E+01	1.36E+02	6.17E+01	5.04E+04
Sb-125	Average:	x	2.55E+00 +- 2.37E+01	. . . .	. . . .	2.43E+04
	463.51		1.00E+02 +- 8.80E+01	1.40E+02	6.48E+01	2.43E+04
	427.95	N	-5.08E+00 +- 2.46E+01	4.48E+01	2.07E+01	2.43E+04
Tl-208	583.14		3.23E+01 +- 1.56E+01	2.30E+01	1.08E+01	1.27E+14
Bi-214	Average:	x	2.67E+02 +- 3.59E+01	. . . .	. . . .	1.40E+07
	609.32		2.71E+02 +- 3.88E+01	3.33E+01	1.52E+01	1.40E+07
	1120.28		2.40E+02 +- 9.41E+01	1.14E+02	4.94E+01	1.40E+07
Bi-212	727.17		2.57E+02 +- 1.84E+02	2.82E+02	1.28E+02	1.67E+04
Am-241	59.54	N	1.05E+01 +- 1.60E+01	2.66E+01B	1.26E+01	3.80E+06
Co-57	122.07	N	1.50E+00 +- 5.63E+00	9.65E+00	4.53E+00	6.48E+03
Ce-144	133.53	N	1.87E+01 +- 4.63E+01	7.84E+01	3.69E+01	6.82E+03

041032D08.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Ce-139	165.85	N	-5.00E+00 +- 8.83E+00	1.59E+01	7.53E+00	3.30E+03
Th-227	236.00	N	2.65E+01 +- 4.55E+01	7.63E+01B	3.56E+01	1.90E+05
Cr-51	320.07	N	-5.32E+01 +- 2.15E+02	3.87E+02	1.81E+02	6.65E+02
I-131	364.48	N	1.96E+02 +- 4.91E+02	8.41E+02	3.87E+02	1.93E+02
Be-7	477.56	N	-5.00E+01 +- 1.33E+02	2.47E+02	1.14E+02	1.28E+03
Sb-124	602.71	N	7.39E+00 +- 1.51E+01	2.58E+01	1.17E+01	1.44E+03
Cs-134	604.66	N	-2.25E+00 +- 9.28E+00	1.71E+01B	7.84E+00	1.81E+04
Ru-106	621.84	N	-1.28E+02 +- 1.04E+02	2.08E+02	9.62E+01	8.84E+03
Ag-110M	657.75	N	-2.90E+00 +- 1.10E+01	2.03E+01	9.30E+00	6.00E+03
Cs-137	661.62	N	-8.17E-01 +- 1.12E+01	2.02E+01	9.26E+00	2.64E+05
Nb-94	702.50	N	-3.65E-01 +- 1.01E+01	1.83E+01	8.37E+00	1.78E+08
Nb-95	765.82	N	-5.08E+00 +- 1.69E+01	3.15E+01	1.44E+01	1.54E+03
Co-58	810.75	N	-5.10E+00 +- 1.37E+01	2.65E+01	1.19E+01	1.70E+03
Mn-54	834.81	N	5.80E+00 +- 9.62E+00	1.63E+01	7.15E+00	7.49E+03
Sc-46	889.26	N	4.70E+00 +- 1.58E+01	2.78E+01	1.25E+01	2.01E+03
Pa-234m	1001.03	N	-5.32E+02 +- 1.77E+03	3.39E+03	1.52E+03	3.92E+13
Eu-154	1004.80	N	2.15E+01 +- 5.90E+01	1.03E+02	4.59E+01	7.45E+04
Fe-59	1099.22	N	-3.06E+00 +- 3.72E+01	7.03E+01	3.10E+01	1.08E+03
Zn-65	1115.52	N	1.39E+01 +- 4.97E+01	8.51E+01P	4.00E+01	5.85E+03
Co-56	1238.28	N	5.83E+01 +- 3.16E+01	4.28E+01	1.86E+01	1.86E+03
Na-22	1274.54	N	4.64E+00 +- 1.21E+01	2.13E+01	9.34E+00	2.28E+04
Co-60	1332.51	N	1.99E+00 +- 1.07E+01	1.98E+01	8.53E+00	4.62E+04
Eu-152	1408.08	N	-4.93E+00 +- 6.57E+01	1.23E+02	5.47E+01	1.17E+05
K-40	1460.75	N	5.09E+00 +- 1.40E+02	2.55E+02	1.15E+02	1.12E+13
Al-26	1808.65	N	4.28E-01 +- 1.02E+01	2.01E+01	8.32E+00	6.31E+09

MEASURED TOTAL: 2.02E+03 +- 1.52E+03 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.41	93.47	144	40	26	106	0.90	Unknown
2	53.21	107.04	40	39	31	172	1.02	Unknown
4	66.53	133.67	25	26	20	70	0.38	Unknown
5	74.81	150.22	178	45	30	170	0.83	Unknown
6	77.13	154.86	269	46	26	136	0.73	Unknown
7	83.87	168.33	32	34	26	126	0.75	Unknown
8	87.23	175.04	123	45	32	176	1.21	Unknown
9	89.84	180.27	86	36	25	126	0.86	Unknown
11	99.11	198.79	31	38	30	149	1.10	Unknown
13	129.17	258.87	57	28	20	87	0.70	Unknown
14	139.93	280.39	20	26	20	75	0.52	Unknown
16	209.36	419.19	37	24	17	63	0.65	Unknown
18	241.90	484.24	94	35	24	100	1.15	Unknown
19	270.23	540.89	33	29	22	84	1.07	Unknown
21	328.03	656.47	28	21	15	46	0.89	Unknown

041032D08.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	510.86	1022.14	12	41	33	85	2.75	Deleted
26	558.63	1117.66	12	21	17	39	1.55	Deleted
33	1238.41	2475.93	9	13	10	17	2.12	Deleted
34	1766.05	3526.22	36	14	6	6	1.70	Unknown

041033D08.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: GS040611-1MB GS040611-1 Code: 041033D08A

Sampling Start:	06/23/2004 09:00:00	Counting Start:	06/23/2004 09:50:30
Sampling Stop:	06/23/2004 09:00:00	Decay Time.	8.42E-001 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	5400 Sec
Sample Size	1.00E+000 g	Real Time	5527 Sec
Collection Efficiency	1.0000	Spc. File	.041033D08.SPC

Detector #: 8 (Detector 8)

Energy(keV)= -0.36 + 0.500*Ch +-5.25E-07*Ch^2 + 1.84E-10*Ch^3 06/23/2004
FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.68	94.01	23	21	16	56	0.65 a	
2	53.40	107.43	16	20	15	55	0.41 a	
3	63.34	127.29	66	36	27	123	1.17 a	
4	66.21	133.03	32	34	27	123	1.08 b	
5	77.20	155.00	8	16	12	41	0.39 a	NET< CL
6	92.77	186.11	60	29	21	85	0.75 a	
7	139.79	280.09	32	29	22	88	0.98 a	
8	166.00	332.50	15	17	12	37	0.47 a	
9	185.89	372.27	24	17	11	31	0.48 a	
10	198.60	397.66	48	33	24	89	1.54 a	
11	205.62	411.72	21	23	17	59	0.80 a	
12	238.74	477.93	24	22	16	54	0.75 a	
13	511.34	1023.08	163	38	23	68	2.38 a	Wide Pk
14	596.65	1193.71	18	18	13	36	1.07 a	
15	1461.72	2921.04	15	10	6	8	1.15 a	

041033D08.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET080618.BKG (0418003-28 Weekly Background)

Bkg.File Detector #: 8

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.68	23	21	16	-29	26	23	NET<CL
3	63.34	66	36	27	15	40	32	NET<CL
4	66.21	32	34	27	10	39	31	NET<CL
5	77.20	8	16	12	-4	21	17	NET<CL
6	92.77	60	29	21	-14	34	29	NET<CL
7	139.79	32	29	22	21	32	26	NET<CL
9	185.89	24	17	11	-9	21	18	NET<CL
10	198.60	48	33	24	34	34	27	
12	238.74	24	22	16	1	25	20	NET<CL
13	511.34	163	38	23	21	44	35	NET<CL
14	596.65	18	18	13	15	21	16	NET<CL
15	1461.72	15	10	6	-5	13	11	NET<CL

041033D08.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: GS040611-1MB GS040611-1 Code: 041033D08A

Sampling Start:	06/23/2004 09:00:00	Counting Start:	06/23/2004 09:50:30
Sampling Stop:	06/23/2004 09:00:00	Decay Time.	8.42e-001 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	5400 Sec
Sample Size	1.00e+000 g	Real Time	5527 Sec
Collection Efficiency	1.0000	Spectrum File	.041033D08.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 8 (Detector 8)

Efficiency File: (D08)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[5.00E-01*En^-1.24E+00 + 1.20E+02*En^8.79E-01] 10/29/2003

Library File: KENT&SULLIVAN_FANP+PA (FANP (Fiss. Act. and Nat. Prod)+Pa-231)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Th-234	92.50	N	-3.17E+01	+- 7.50E+01	1.32E+02	6.32E+01	3.92E+13
Ce-139	165.85		2.73E+00	+- 3.05E+00	4.98E+00	2.24E+00	3.30E+03
U-235	Average:	x	2.81E-01	+- 3.21E+01	. . . .	. . . .	6.17E+12
	205.31		6.85E+01	+- 7.55E+01	1.23E+02	5.71E+01	6.17E+12
	143.76	N	-1.48E+01	+- 3.55E+01	6.35E+01	3.01E+01	6.17E+12
Pb-212	238.63	N	4.64E-01	+- 1.06E+01	1.86E+01	8.70E+00	1.67E+04
K-40	1460.75	N	-4.04E+01	+- 9.71E+01	1.92E+02	8.57E+01	1.12E+13
Am-241	59.54	N	-6.86E+00	+- 9.11E+00	1.69E+01B	7.94E+00	3.80E+06
Eu-155	105.31	N	4.77E+00	+- 1.33E+01	2.27E+01	1.06E+01	4.35E+04
Co-57	122.07	N	-1.50E+00	+- 3.14E+00	5.80E+00	2.70E+00	6.48E+03
Ce-144	133.53	N	-5.78E+00	+- 2.67E+01	4.81E+01	2.24E+01	6.82E+03
Th-227	236.00	N	1.49E+01	+- 3.07E+01	5.22E+01B	2.41E+01	1.90E+05
Pa-231	302.67	N	-7.68E+01	+- 2.04E+02	3.74E+02	1.74E+02	7.87E+05
Cr-51	320.07	N	-2.73E+01	+- 4.78E+01	8.91E+01	4.14E+01	6.65E+02
Pb-214	351.99	N	8.10E+00	+- 1.61E+01	2.71E+01	1.26E+01	1.40E+07
I-131	364.48	N	-1.81E+00	+- 5.96E+00	1.10E+01	5.05E+00	1.93E+02
Sb-125	427.95	N	-6.81E+00	+- 1.81E+01	3.37E+01	1.55E+01	2.43E+04
Be-7	477.56	N	-1.22E+01	+- 5.30E+01	9.77E+01	4.47E+01	1.28E+03
Tl-208	583.14	N	-4.04E+00	+- 9.62E+00	1.76E+01	8.22E+00	1.27E+14
Sb-124	602.71	N	7.33E+00	+- 8.11E+00	1.32E+01	6.05E+00	1.44E+03
Cs-134	604.66	N	-3.00E+00	+- 8.64E+00	1.57E+01	7.33E+00	1.81E+04
Bi-214	609.32	N	1.58E+01	+- 2.04E+01	3.37E+01	1.57E+01	1.40E+07
Ru-106	621.84	N	-5.04E+01	+- 6.88E+01	1.34E+02	6.13E+01	8.84E+03
Ag-110M	657.75	N	9.82E-01	+- 6.73E+00	1.21E+01	5.43E+00	6.00E+03
Cs-137	661.62	N	2.23E+00	+- 6.81E+00	1.20E+01	5.33E+00	2.64E+05

041033D08.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)		MDA	Critical Level	Halflife (hrs)
Nb-94	702.50	N	-5.42E+00	+- 9.71E+00	1.80E+01	8.39E+00	1.78E+08
Bi-212	727.17	N	9.73E+01	+- 1.04E+02	1.67E+02	7.41E+01	1.67E+04
Nb-95	765.82	N	-6.70E+00	+- 7.54E+00	1.50E+01	6.86E+00	1.54E+03
Co-58	810.75	N	-2.53E+00	+- 6.63E+00	1.29E+01	5.76E+00	1.70E+03
Mn-54	834.81	N	0.00E+00	+- 8.37E+00	1.52E+01	6.89E+00	7.49E+03
Sc-46	889.26	N	-7.62E-01	+- 8.01E+00	1.48E+01	6.67E+00	2.01E+03
Ra-228	911.07	N	7.64E+00	+- 3.46E+01	6.11E+01	2.77E+01	5.04E+04
Pa-234m	1001.03	N	-2.90E+02	+- 1.48E+03	2.77E+03	1.25E+03	3.92E+13
Eu-154	1004.80	N	1.65E+01	+- 4.52E+01	7.94E+01	3.51E+01	7.45E+04
Fe-59	1099.22	N	1.28E+01	+- 1.41E+01	2.26E+01	9.72E+00	1.08E+03
Zn-65	1115.52	N	1.70E+01	+- 1.76E+01	2.79E+01	1.22E+01	5.85E+03
Co-56	1238.28	N	1.36E+01	+- 1.50E+01	2.42E+01	1.06E+01	1.86E+03
Na-22	1274.54	N	1.24E+00	+- 9.16E+00	1.67E+01	7.37E+00	2.28E+04
Co-60	1332.51	N	-3.23E-01	+- 9.54E+00	1.79E+01	7.89E+00	4.62E+04
Eu-152	1408.08	N	-3.93E+01	+- 4.76E+01	9.87E+01	4.41E+01	1.17E+05
Al-26	1808.65	N	-1.15E+01	+- 1.26E+01	2.63E+01	1.18E+01	6.31E+09

MEASURED TOTAL: 2.24E+02 +- 3.88E+02 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.68	94.01	-29	26	23	56	0.65	Deleted
2	53.40	107.43	16	20	15	55	0.41	Unknown
3	63.34	127.29	15	40	32	123	1.17	Deleted
4	66.21	133.03	10	39	31	123	1.08	Deleted
5	77.20	155.00	-4	21	17	41	0.39	Deleted
7	139.79	280.09	21	32	26	88	0.98	Deleted
9	185.89	372.27	-9	21	18	31	0.48	Deleted
10	198.60	397.66	34	34	27	89	1.54	Unknown
13	511.34	1023.08	21	44	35	68	2.38	Deleted
14	596.65	1193.71	15	21	16	36	1.07	Deleted

041177D02.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: GS040614-2MB GS040614-2 Code: 041177D02A

Sampling Start: 07/07/2004 12:00:00 | Counting Start: 07/07/2004 17:01:41
Sampling Stop: 07/07/2004 12:00:00 | Decay Time. . . . . 5.03E+000 Hrs
Buildup Time. . . . . 0.00E+000 Hrs | Live Time . . . . . 60000 Sec
Sample Size . . . . . 1.00E+002 g | Real Time . . . . . 60125 Sec
Collection Efficiency . . . . 1.0000 | Spc. File 041177D02.SPC

Detector #: 2 (Detector 2)
Energy(keV)= -0.72 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/07/2004
FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.56	94.50	105	44	32	281	0.39 a	
2	63.19	127.72	117	73	57	657	0.76 a	
3	66.35	134.03	181	74	57	657	0.84 b	
4	74.95	151.23	73	42	32	281	0.37 a	
5	77.05	155.42	81	53	41	422	0.56 b	
6	84.75	170.80	75	76	61	679	0.91 a	
7	87.18	175.67	44	56	45	453	0.64 b	NET< CL
8	92.60	186.50	464	84	59	652	0.97 a	
9	104.77	210.81	47	53	42	395	0.70 a	
10	109.93	221.13	21	35	28	211	0.40 a	NET< CL
11	112.89	227.04	43	64	51	528	0.88 b	NET< CL
12	126.42	254.08	28	71	58	613	0.96 a	NET< CL
13	139.81	280.85	172	74	57	598	0.91 a	Wide Pk
14	143.40	288.01	109	97	78	897	1.52 b	
15	167.03	335.24	28	52	41	381	0.62 a	NET< CL
16	170.66	342.49	42	43	34	286	0.44 b	
17	185.68	372.52	287	69	50	502	0.90 a	
18	198.31	397.74	216	72	54	541	1.03 a	
19	212.57	426.26	42	53	42	398	0.59 a	
20	238.52	478.11	289	67	48	458	0.76 a	
21	295.02	591.03	77	61	48	433	0.93 a	
22	338.33	677.58	61	65	52	455	1.13 a	
23	351.69	704.27	154	63	48	389	1.22 a	
24	492.66	986.00	5	30	25	151	0.60 a	NET< CL

000313

041177D02.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	510.81	1022.27	1513	120	75	692	2.63 a	Wide Pk
26	558.30	1117.17	215	52	35	243	1.08 a	
27	569.36	1139.27	89	63	49	401	1.66 a	
28	582.87	1166.28	159	62	47	340	1.87 a	
29	609.09	1218.67	174	55	40	312	1.12 a	
30	651.10	1302.62	47	44	34	219	1.31 a	
31	692.85	1386.06	131	69	53	423	2.02 a	
32	695.60	1391.54	87	63	50	388	1.80 b	
33	802.68	1605.55	135	46	32	194	1.32 a	
34	910.97	1821.95	70	37	27	151	1.31 a	
35	968.91	1937.73	35	38	30	163	1.57 a	
36	1120.16	2240.00	22	24	18	81	0.89 a	
37	1460.29	2919.74	206	40	23	105	1.73 a	
38	1763.96	3526.61	38	22	15	49	1.37 a	

041177D02.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET020702.BKG (0419002-2 Weekly Bkg.)

Bkg.File Detector #: 2

BACKGROUND SUBTRACT RESULTS

PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	46.56	105	44	32	-20	97	80	NET<CL
2	63.19	117	73	57	-85	276	228	NET<CL
3	66.35	181	74	57	-42	194	160	NET<CL
4	74.95	73	42	32	-60	135	112	NET<CL
5	77.05	81	53	41	-60	157	130	NET<CL
6	84.75	75	76	61	25	138	113	NET<CL
8	92.60	464	84	59	87	204	167	NET<CL
9	104.77	47	53	42	21	102	83	NET<CL
13	139.81	172	74	57	75	133	109	NET<CL
17	185.68	287	69	50	-15	170	140	NET<CL
18	198.31	216	72	54	63	146	119	NET<CL
20	238.52	289	67	48	-16	159	131	NET<CL
21	295.02	77	61	48	-15	137	113	NET<CL
22	338.33	61	65	52	-5	143	118	NET<CL
23	351.69	154	63	48	-60	144	119	NET<CL
25	510.81	1513	120	75	91	265	217	NET<CL
26	558.30	215	52	35	114	103	83	
27	569.36	89	63	49	27	115	95	NET<CL
28	582.87	159	62	47	29	112	92	NET<CL
29	609.09	174	55	40	44	122	100	NET<CL
33	802.68	135	46	32	-28	115	95	NET<CL
34	910.97	70	37	27	-12	83	69	NET<CL
35	968.91	35	38	30	-20	75	62	NET<CL
36	1120.16	22	24	18	-28	78	64	NET<CL
37	1460.29	206	40	23	48	88	72	NET<CL
38	1763.96	38	22	15	-3	59	49	NET<CL

041177D02.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: GS040614-2MB GS040614-2 Code: 041177D02A

Sampling Start:	07/07/2004 12:00:00	Counting Start:	07/07/2004 17:01:41
Sampling Stop:	07/07/2004 12:00:00	Decay Time.	5.03e+000 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	60000 Sec
Sample Size	1.00e+002 g	Real Time	60125 Sec
Collection Efficiency	1.0000	Spectrum File	.041177D02.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 2 (Detector 2)

Efficiency File: (D02)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[8.73E-04*En^-4.04E+00 + 6.76E+01*En^8.33E-01] 06/01/2004

Library File: KENT&SULLIVAN_FANP.LI (FANP (Fiss. Act. and Nat. Products))

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MEASURED or MDA CONCENTRATIONS

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Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)			MDA	Critical Level	Halflife (hrs)
Th-234	92.50	N	1.61E-01	+-	3.75E-01	6.19E-01	3.07E-01	3.92E+13
U-235	143.76		7.00E-02	+-	6.24E-02	1.02E-01	5.02E-02	6.17E+12
Pb-212	238.63	N	-3.50E-03	+-	3.44E-02	5.73E-02	2.84E-02	1.67E+04
Pb-214	351.99	N	-2.08E-02	+-	4.97E-02	8.32E-02	4.11E-02	1.40E+07
Tl-208	583.14	N	6.69E-03	+-	2.58E-02	4.29E-02	2.11E-02	1.27E+14
Bi-214	609.32	N	1.93E-02	+-	5.34E-02	8.85E-02	4.36E-02	1.40E+07
Ce-144	Average:	x	-1.29E-02	+-	3.84E-02	. . . .	. . . .	6.82E+03
	696.49		1.50E+00	+-	1.10E+00	1.78E+00	8.66E-01	6.82E+03
	133.53	N	-1.47E-02	+-	3.84E-02	6.57E-02	3.20E-02	6.82E+03
Ra-228	911.07	N	-1.26E-02	+-	9.09E-02	1.53E-01	7.50E-02	5.04E+04
K-40	1460.75	N	1.82E-01	+-	3.35E-01	5.55E-01	2.72E-01	1.12E+13
Am-241	59.54	N	1.61E-02	+-	6.06E-02	1.02E-01	4.94E-02	3.80E+06
Eu-155	105.31	N	2.72E-02	+-	2.39E-02	3.89E-02	1.89E-02	4.35E+04
Co-57	122.07	N	4.31E-03	+-	5.13E-03	8.44E-03	4.10E-03	6.48E+03
Ce-139	165.85	N	-1.42E-02	+-	1.24E-02	2.09E-02	1.03E-02	3.30E+03
Th-227	236.00	N	9.05E-03	+-	4.74E-02	7.95E-02B	3.87E-02	1.90E+05
Cr-51	320.07	N	3.24E-02	+-	6.85E-02	1.14E-01	5.54E-02	6.65E+02
I-131	364.48	N	5.18E-03	+-	9.96E-03	1.66E-02	8.05E-03	1.93E+02
Sb-125	427.95	N	9.10E-03	+-	2.62E-02	4.39E-02	2.12E-02	2.43E+04
Be-7	477.56	N	-6.44E-02	+-	7.40E-02	1.30E-01	6.31E-02	1.28E+03
Sb-124	602.71	N	1.29E-02	+-	1.23E-02	2.01E-02	9.79E-03	1.44E+03
Cs-134	604.66	N	-2.20E-02	+-	1.24E-02	2.21E-02B	1.08E-02	1.81E+04
Ru-106	621.84	N	-2.51E-02	+-	1.03E-01	1.77E-01	8.55E-02	8.84E+03
Ag-110M	657.75	N	8.01E-03	+-	9.97E-03	1.64E-02	7.89E-03	6.00E+03
Cs-137	661.62	N	-2.79E-03	+-	1.09E-02	1.88E-02	9.04E-03	2.64E+05

000322

041177D02.SPC Analyzed by

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Nb-94	702.50	N	6.83E-03 +- 1.31E-02	2.18E-02	1.06E-02	1.78E+08
Bi-212	727.17	N	-7.16E-02 +- 3.75E-01	6.28E-01	3.09E-01	1.67E+04
Nb-95	765.82	N	-5.89E-03 +- 1.09E-02	1.90E-02	9.17E-03	1.54E+03
Co-58	810.75	N	1.91E-03 +- 1.04E-02	1.76E-02	8.44E-03	1.70E+03
Mn-54	834.81	N	7.21E-03 +- 1.11E-02	1.84E-02	8.83E-03	7.49E+03
Sc-46	889.26	N	-4.16E-03 +- 1.06E-02	1.86E-02	8.92E-03	2.01E+03
Pa-234m	1001.03	N	1.19E+00 +- 1.83E+00	3.04E+00	1.45E+00	3.92E+13
Eu-154	1004.80	N	-8.31E-02 +- 5.97E-02	1.10E-01	5.28E-02	7.45E+04
Fe-59	1099.22	N	1.23E-03 +- 2.11E-02	3.62E-02	1.73E-02	1.08E+03
Zn-65	1115.52	N	-8.51E-03 +- 2.56E-02	4.47E-02	2.14E-02	5.85E+03
Co-56	1238.28	N	1.05E-02 +- 1.74E-02	2.91E-02	1.38E-02	1.86E+03
Na-22	1274.54	N	-1.01E-02 +- 1.20E-02	2.18E-02	1.04E-02	2.28E+04
Co-60	1332.51	N	-8.51E-03 +- 1.28E-02	2.29E-02	1.09E-02	4.62E+04
Eu-152	1408.08	N	7.71E-03 +- 5.74E-02	9.88E-02	4.68E-02	1.17E+05
Al-26	1808.65	N	5.75E-03 +- 1.18E-02	2.00E-02	9.34E-03	6.31E+09

MEASURED TOTAL: 1.79E+00 +- 3.09E+00 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.56	94.50	-20	97	80	281	0.39	Deleted
2	63.19	127.72	-85	276	228	657	0.76	Deleted
3	66.35	134.03	-42	194	160	657	0.84	Deleted
4	74.95	151.23	-60	135	112	281	0.37	Deleted
5	77.05	155.42	-60	157	130	422	0.56	Deleted
6	84.75	170.80	25	138	113	679	0.91	Deleted
7	87.18	175.67	44	56	45	453	0.64	Deleted
9	104.77	210.81	21	102	83	395	0.70	Deleted
10	109.93	221.13	21	35	28	211	0.40	Deleted
11	112.89	227.04	43	64	51	528	0.88	Deleted
12	126.42	254.08	28	71	58	613	0.96	Deleted
13	139.81	280.85	75	133	109	598	0.91	Deleted
15	167.03	335.24	28	52	41	381	0.62	Deleted
16	170.66	342.49	42	43	34	286	0.44	Unknown
17	185.68	372.52	-15	170	140	502	0.90	Deleted
18	198.31	397.74	63	146	119	541	1.03	Deleted
19	212.57	426.26	42	53	42	398	0.59	Unknown
21	295.02	591.03	-15	137	113	433	0.93	Deleted
22	338.33	677.58	-5	143	118	455	1.13	Deleted
24	492.66	986.00	5	30	25	151	0.60	Deleted
25	510.81	1022.27	91	265	217	692	2.63	Deleted
26	558.30	1117.17	114	103	83	243	1.08	Unknown
27	569.36	1139.27	27	115	95	401	1.66	Deleted
30	651.10	1302.62	47	44	34	219	1.31	Unknown
31	692.85	1386.06	131	69	53	423	2.02	Unknown

041177D02.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
33	802.68	1605.55	-28	115	95	194	1.32	Deleted
35	968.91	1937.73	-20	75	62	163	1.57	Deleted
36	1120.16	2240.00	-28	78	64	81	0.89	Deleted
38	1763.96	3526.61	-3	59	49	49	1.37	Deleted

040962D07.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: GS040611-1LCS GS040611-1 Code: 040962D07A

Sampling Start:	06/23/2004 09:00:00	Counting Start:	06/23/2004 09:50:14
Sampling Stop:	06/23/2004 09:00:00	Decay Time.	8.37E-001 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1860 Sec
Sample Size	1.00E+000 L	Real Time	1915 Sec
Collection Efficiency	1.0000	Spc. File	.040962D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.32 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/23/2004
FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	49.09	102.60	4497	416	324	16620	1.31	a Wide Pk
2	50.71	105.83	4385	580	465	26600	1.99	b
3	52.50	109.40	792	341	277	14150	1.03	c
4	59.33	123.03	84388	622	183	6783	0.83	a
5	66.55	137.45	471	301	245	7418	1.97	a Wide Pk
6	87.88	180.00	24549	343	115	2656	0.85	a
7	98.90	202.00	23	74	60	899	0.44	a NET< CL
8	102.88	209.94	146	152	123	2399	1.29	b
9	121.89	247.88	4144	165	85	1449	0.89	a
10	136.39	276.82	486	124	95	1676	0.91	a
11	165.72	335.36	283	88	67	1000	0.71	a
12	310.92	625.12	50	72	58	744	0.66	a NET< CL
13	510.96	1024.34	41	54	43	464	0.64	a NET< CL
14	614.05	1230.06	57	55	44	436	0.86	a
15	618.27	1238.49	45	48	38	349	0.68	b
16	661.80	1325.36	19311	288	61	689	1.38	a
17	738.39	1478.21	41	71	57	608	1.30	a NET< CL
18	799.21	1599.58	21	50	40	400	0.76	a NET< CL
19	1173.19	2345.92	16181	261	50	431	1.80	a
20	1332.28	2663.40	14629	244	25	115	1.91	a

040962D07.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET070618.BKG (0418003-27 Weekly Background)

Bkg.File Detector #: 7

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
3	52.50	792	341	277	789	341	277	
4	59.33	84388	622	183	84387	622	183	
5	66.55	471	301	245	467	302	245	
6	87.88	24549	343	115	24547	343	115	
9	121.89	4144	165	85	4143	165	85	
13	510.96	41	54	43	5	55	45	NET<CL

040962D07.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: GS040611-1LCS GS040611-1 Code: 040962D07A

Sampling Start:	06/23/2004 09:00:00	Counting Start:	06/23/2004 09:50:14
Sampling Stop:	06/23/2004 09:00:00	Decay Time.	8.37e-001 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1860 Sec
Sample Size	1.00e+000 L	Real Time	1915 Sec
Collection Efficiency	1.0000	Spectrum File	.040962D07.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 7 (Detector 7)

Efficiency File: (D07)(Sh01).EFF (Geo 1 Eff CaL)

Eff.=1/[4.38E-01*En^-1.35E+00 + 1.62E+02*En^9.38E-01] 01/23/2004

Library File: . . . .ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/L)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54		1.06E+05 +- 7.82E+02	4.65E+02	2.31E+02	3.79E+06
Cd-109	88.02		2.78E+05 +- 3.89E+03	2.63E+03	1.30E+03	1.11E+04
Co-57	122.07		2.11E+03 +- 8.41E+01	8.79E+01	4.33E+01	6.50E+03
Ce-139	165.85		1.79E+02 +- 5.60E+01	8.68E+01	4.26E+01	3.30E+03
Cs-137	661.62		3.66E+04 +- 5.45E+02	2.36E+02	1.16E+02	2.64E+05
Co-60	Average:x		4.48E+04 +- 5.20E+02	. . . .	. . . .	4.62E+04
	1173.21		4.45E+04 +- 7.18E+02	2.79E+02	1.36E+02	4.62E+04
	1332.48		4.53E+04 +- 7.54E+02	1.63E+02	7.72E+01	4.62E+04
Hg-203	279.18		MDA	1.49E+02	7.34E+01	1.12E+03
Sn-113	391.68		MDA	2.56E+02	1.26E+02	2.76E+03
Y-88	898.02		MDA	3.55E+02	1.75E+02	2.56E+03

MEASURED TOTAL: 4.68E+05 +- 5.88E+03 pCi/L

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	49.09	102.60	4497	416	324	16620	1.31	Unknown
2	50.71	105.83	4385	580	465	26600	1.99	Unknown
3	52.50	109.40	789	341	277	14150	1.03	Unknown
5	66.55	137.45	467	302	245	7418	1.97	Unknown
7	98.90	202.00	23	74	60	900	0.44	Deleted

040962D07.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
8	102.88	209.94	146	152	123	2399	1.29	Unknown
10	136.39	276.82	486	124	95	1676	0.91	Unknown
12	310.92	625.12	50	72	58	744	0.66	Deleted
13	510.96	1024.34	5	55	45	464	0.64	Deleted
14	614.05	1230.06	57	55	44	436	0.86	Unknown
15	618.27	1238.49	45	48	38	349	0.68	Unknown
17	738.39	1478.21	41	71	57	608	1.30	Deleted
18	799.21	1599.58	21	50	40	400	0.76	Deleted

041140D02.SPC Analyzed by

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: GS040614-2LCS GS040614-2 Code: 041140D02A

Sampling Start:	07/02/2004 09:00:00	Counting Start:	07/02/2004 09:06:33
Sampling Stop:	07/02/2004 09:00:00	Decay Time.	1.09E-001 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.00E+002 g	Real Time	1856 Sec
Collection Efficiency	1.0000	Spc. File	.041140D02.SPC

Detector #: 2 (Detector 2)

Energy(keV)= -0.16 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/02/2004
FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	60.09	120.49	27851	378	145	4254	0.77 a	HiResid
2	88.53	177.38	27428	365	125	3157	0.80 a	HiResid
3	122.61	245.55	6735	215	115	2433	0.90 a	
4	137.04	274.39	956	135	99	1960	0.87 a	
5	166.36	333.04	477	127	98	1939	0.74 a	
6	269.35	539.01	64	132	107	2135	1.03 a	NET< CL
7	378.55	757.42	70	75	60	897	0.55 a	
8	392.42	785.15	262	236	192	4093	2.32 a	Wide Pk
9	459.45	919.20	25	90	74	1335	0.59 a	NET< CL
10	662.02	1324.35	44646	437	90	1419	1.43 a	
11	821.76	1643.82	55	117	96	1692	1.61 a	NET< CL
12	898.31	1796.93	152	147	119	2370	1.89 a	
13	1173.40	2347.11	35885	390	76	970	1.91 a	
14	1332.52	2665.34	32789	365	39	272	2.08 a	
15	1836.15	3672.60	51	33	25	94	2.74 a	

041140D02.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET020625.BKG (0418003-32 Weekly Background)

Bkg.File Detector #: 2

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
2	88.53	27428	365	125	27428	365	125	
12	898.31	152	147	119	151	147	119	

041140D02.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: GS040614-2LCS GS040614-2 Code: 041140D02A

Sampling Start:	07/02/2004 09:00:00	Counting Start:	07/02/2004 09:06:33
Sampling Stop:	07/02/2004 09:00:00	Decay Time.	1.09e-001 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.00e+002 g	Real Time	1856 Sec
Collection Efficiency	1.0000	Spectrum File	.041140D02.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 2 (Detector 2)

Efficiency File: (D02)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[8.73E-04*En^-4.04E+00 + 6.76E+01*En^8.33E-01] 06/01/2004

Library File: . . . .ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54		9.94E+02 +- 1.35E+01	1.05E+01	5.18E+00	3.79E+06
Cd-109	88.02		2.87E+03 +- 3.81E+01	2.65E+01	1.31E+01	1.11E+04
Co-57	122.07		1.90E+01 +- 6.06E-01	6.54E-01	3.23E-01	6.50E+03
Ce-139	165.85		1.46E+00 +- 3.89E-01	6.09E-01	3.00E-01	3.30E+03
Sn-113	391.68		1.88E+00 +- 1.69E+00	2.78E+00	1.38E+00	2.76E+03
Cs-137	661.62		3.77E+02 +- 3.69E+00	1.55E+00	7.62E-01	2.64E+05
Y-88	Average:x		9.42E-01 +- 5.25E-01	. . . .	. . . .	2.56E+03
	898.02		1.50E+00 +- 1.46E+00	2.39E+00	1.18E+00	2.56E+03
	1836.01		8.58E-01 +- 5.63E-01	8.83E-01	4.19E-01	2.56E+03
Co-60	Average:x		4.19E+02 +- 3.26E+00	. . . .	. . . .	4.62E+04
	1173.21		4.16E+02 +- 4.52E+00	1.79E+00	8.81E-01	4.62E+04
	1332.48		4.23E+02 +- 4.71E+00	1.04E+00	5.05E-01	4.62E+04
Hg-203	279.18		MDA	9.30E-01	4.59E-01	1.12E+03

MEASURED TOTAL: 4.68E+03 +- 6.18E+01 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
4	137.04	274.39	956	135	99	1960	0.87	Unknown
6	269.35	539.01	64	132	107	2135	1.03	Deleted
7	378.55	757.42	70	75	60	897	0.55	Unknown

041140D02.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
9	459.45	919.20	25	90	74	1335	0.59	Deleted
11	821.76	1643.82	55	117	96	1692	1.61	Deleted

Paragon Analytics

Gamma Spectrometer Run Log

Date: 6/22/04

Reviewed By/Date: JP 6/22/04

Sample ID	Ver[1]	Det. No.	Geo[2]	Count Dur. (min.)[3]	Start Time	Analyst	File ID/Comments	Exported?
0404259-13	JP	2	17/26	45	10:32	JP	041030D02.SPC	JP
0404259-14	↓	1	17/26	30	11:00	JP	041396D01.SPC	JP
GS0406042-4MB JP 6/22/04	JP	3	↓	90	↓	↓	041030D03.SPC	JP
↓ LCS	JP	4	↓	30	↓	↓	041091D04.SPC	JP
↓ ALCS	↓	8	↓	↓	↓	↓	041021D08.SPC	JP
0405202-2	JP	7	13	30	11:05	JP	040950D07.SPC	JP
0405097-2	JP	10	1	60	11:28	JP	041003D10.SPC	JP
0405202-3	JP	1	13	30	11:42	JP	041397D01.SPC	JP
↓ -4	↓	2	↓	↓	↓	↓	041031D02.SPC	JP
↓ -5	↓	4	↓	↓	↓	↓	041092D04.SPC	JP
↓ JP 6/22/04 ~~8~~ 2D	↓	8	↓	↓	↓	↓	041022D08.SPC	JP
↓ -8	↓	7	↓	↓	↓	↓	040951D07.SPC	JP
↓ -9	JP	1	13	30	12:22	JP	041398D01.SPC	JP
GS040603-3 MB	↓	2	↓	↓	↓	↓	041032D02.SPC	JP
↓ LCS	↓	4	↓	↓	↓	↓	041093D04.SPC	JP
0405203-1	JP	7	↓	↓	↓	↓	040952D07.SPC	JP
↓ -2	↓	8	↓	↓	↓	↓	041023D08.SPC	JP
0405097-2D	JP	3	1	90	12:39	JP	041032D03.SPC	JP
↓ 3	JP	10	↓	30	↓	↓	041004D10.SPC	JP
0405203-1D	JP	1	13	30	13:11	JP	041399D01.SPC	JP
↓ -3	↓	2	↓	↓	↓	↓	041033D02.SPC	JP
↓ -4	↓	4	↓	↓	↓	↓	041094D04.SPC	JP
↓ -5	↓	7	↓	↓	↓	↓	040953D07.SPC	JP
0405066-11D JP 6/22/04	↓	8	13	↓	↓	↓	041024D08.SPC	JP

[1] Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

[2] Calibration geometry.

[3] Count Duration.

278917 B

Form 754r9.frm (9/19/2001)

Paragon Analytics

Gamma Spectrometer Run Log

Date: 6/22/04

Reviewed By/Date: JP 6/23/04

Sample ID	Ver[1]	Det. No.	Geo[2]	Count Dur. (min.)[3]	Start Time	Analyst	File ID/Comments	Exported?
0405097-17	JP	10	1	30	13:16	JP	041005D10.SPC	JP
0405203-6	JP	1	13	30	13:53	JP	041400D01.SPC	JP
-8		2					041034D02.SPC	JP
-9		4					041095D04.SPC	JP
-10		7					040954D07.SPC	JP
-12		8					041025D08.SPC	JP
0405097-19	JP	10	1	60	13:58	JP	041007D10.SPC	JP
-21		3		60	14:15	JP	041033D03.SPC	JP
GS040607-1MB	JP	8	13	30	14:33	JP	041026D08.SPC	JP
LCS		4					041096D04.SPC	JP
GS040609-3LCS	JP	2	1	30	14:37	JP	041035D02.SPC	JP
0405097-22	JP	1	1	30	14:40	JP	041401D01.SPC	JP
-23		7					040955D07.SPC	JP
0405118-1	MC	1	1	300	15:31	JP	041402D01.SPC	MC
-2		2					041036D02.SPC	MC
-3	JP	3		~~360~~ 400			041037D03.SPC	MC
-4	MC	4		300			041097D04.SPC	MC
-6	JP	7		400			040957D07.SPC	MC
0405202-6	MC	8		300			041027D08.SPC	MC
-7		10					041008D10.SPC	MC
0405118-4D	JP	1	1	400	21:08	MC	041403D01.SPC	JP
-5		2					041037D02.SPC	JP
0405202-7D		4					041098D04.SPC	JP
GS040609-3MB		8					041028D08.SPC	JP

MC 6/2

[1] Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

[2] Calibration geometry.

[3] Count Duration.

278918 B

Form 754r9.frm (9/19/2001)

Paragon Analytics

Gamma Spectrometer Run Log

Date: 6-23-04

Reviewed By/Date: JP 6/23/04

Sample ID	Ver[1]	Det. No.	Geo[2]	Count Dur. (min.)[3]	Start Time	Analyst	File ID/Comments	Exported?
04 06 005-8	JP	1	NA	5	8:55	JP AAC	041429D01.SPC	NA
-9	JP				9:01	JP	041430D01.SPC	
-10	JP				9:08	JP	041431D01.SPC	
TC0406ZZ-ZMB	JP				9:14	JP	041432D01.SPC	
-ZLCS	JP				9:21	JP	041433D01.SPC	
-ZLCSD	JP				9:29	JP	041434D01.SPC	
0406136-1	JP	2	11	30	6:22	JP	041039D02.SPC	JP
-1D		3					041037D03.SPC	JP
0405097-19D	JP	7	1	60			040959D07.SPC	JP
-24		8					041030D08.SPC	JP
0406136-2	JP	2	11	30	7:05	JP	041040D02.SPC	JP
-3		3					041038D03.SPC	JP
0405097-25	JP	7	1	60	7:34	JP	040960D07.SPC	JP
-28		8					041031D08.SPC	JP
GS040618-1MB	JP	2	11	30	7:42	JP	041041D02.SPC	JP
LCS		3					041039D03.SPC	JP
0404236-1	JP	4	17/26	60	7:59	JP	041102D04.SPC	JP
-2	JP	2			8:17	JP	041042D02.SPC	JP
-2D		3					041040D03.SPC	JP
0405097-29	JP	7	1	60	8:42	JP	040961D07.SPC	JP
-30		8					041032D08.SPC	JP
0404236-3	JP	4	17/26	60	9:04	JP	041103D04.SPC	JP
-4	JP	2		45	9:29	JP	041043D02.SPC	JP
-6		3					041041D03.SPC	JP

[1] Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

[2] Calibration geometry.

[3] Count Duration.

278921 B

Form 754r9.frm (9/19/2001)

Paragon Analytics

Gamma Spectrometer Run Log

Date: 6/23/04

Reviewed By/Date: JP 6/23/04

Sample ID	Ver[1]	Det. No.	Geo[2]	Count Dur. (min.)[3]	Start Time	Analyst	File ID/Comments	Exported?
0404236-5	JP	1	17/26	60	9:35	JP	041435D01.SPC	JP
GS040611-1MB	JP	78	1	90	9:50	JP	041033D08.SPC	JP
↓ LCS	JP	87	↓	30	↓	↓	040962D07.SPC	JP
0404236-7	JP	4	17/26	60	10:09	JP	041104D04.SPC	JP
↓ -8	↓	2	↓	45	10:23	JP	041044D02.SPC	JP
↓ -8D	↓	3	↓	↓	↓	↓	041042D03.SPC	JP
GS040511-3LCS	JP	7	17/26	30	10:26	JP	040963D07.SPC	JP
0404236-9	JP	1	17/26	60	10:38	JP	041436D01.SPC	JP
GS040511-3ALCS	JP	7	26	30	11:01	JP	040964D07.SPC	JP
0404236-10	JP	2	17/26	75	11:14	JP	041047D02.SPC	JP
↓ -11	JP	10	↓	120	11:32	JP	041015D10.SPC	JP
0406138-1	JP	3	11	30	11:37	JP	041043D03.SPC	JP
↓ -1D	↓	4	↓	↓	↓	↓	041105D04.SPC	JP
↓ -3	↓	7	↓	↓	↓	↓	040965D07.SPC	JP
0406189-1	JP	1	9Δ	60	11:48	JP	041437D01.SPC	JP
0406188-1	↓	8	7*	↓	↓	↓	041034D08.SPC	JP
0406189-2	JP	3	9Δ	↓	12:16	JP	041044D03.SPC	JP
0406190-1	↓	7	↓	↓	↓	↓	040966D07.SPC	JP
0406188-2	↓	4	7*	↓	↓	↓	041106D04.SPC	JP
0406190-2	JP	2	9Δ	↓	12:37	JP	041048D02.SPC	JP
0406190-3	JP	1	↓	↓	12:55	JP	041438D01.SPC	JP
GS040623-10MB	↓	8	7*	↓	↓	↓	041035D08.SPC	JP
0406189-2D	JP	7	9∇	↓	13:22	JP	040967D07.SPC	JP
0406190-4	↓	3	9Δ	↓	↓	↓	041045D03.SPC	JP

[1] Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

[2] Calibration geometry.

[3] Count Duration.

Δ Sample counted with air flow arrow up (↑) JP 6/23/04

* Sample counted on a puck JP 6/23/04

∇ Sample counted with air flow arrow down (↓) JP 6/23/04

278922 B

Form 754r9.frm (9/19/2001)

000336

Paragon Analytics

Gamma Spectrometer Run Log

Date: 7/1/04

Reviewed By/Date: JP 7/2/04

Sample ID	Ver[1]	Det. No.	Geo[2]	Count Dur. (min.)[3]	Start Time	Analyst	File ID/Comments	Exported?
0404255-19	JP	8	17/26	45	8:16	JP	041093D08.SPC	JP
0405096-19	JP	2	11	30			041128D02.SPC	JP
-27		3					041122D03.SPC	JP
-28		7					041053D07.SPC	JP
-25		10					041082D10.SPC	JP
0405096-30		4	11		8:25	JP	041214D04.SPC	JP
GS040601-6MB	JP	10.4 JP 7/1/04	11	1000	9:03	JP	041086D10.SPC	JP
LCS	JP	7		30			041054D07.SPC	JP
0405096-26		4 ~~10~~ JP 7/1/04					041215D04.SPC	JP
GS040514-2MB	JP	8	17/26	90	9:08	JP	041094D08.SPC	JP
0405097-1	JP	2	11	30	9:11	JP	041129D02.SPC	JP
-1D		3					041123D03.SPC	JP
-4	JP	4	11	30	9:39	JP	041216D04.SPC	JP
-5		7					041055D07.SPC	JP
-6	JP	2			9:46	JP	041130D02.SPC	JP
-7		3					041124D03.SPC	JP
-8	JP	2			10:24	JP	041131D02.SPC	JP
-9		3					041125D03.SPC	JP
-10		4					041217D04.SPC	JP
-11		7					041056D07.SPC	JP
GS040514-2LCS	JP	8	17	30	10:45	JP	041095D08.SPC	JP
0405097-11D	MC	2	11	30	11:09	JP	041132D02.SPC	MC
-12		3					041126D03.SPC	MC
-13		4					041218D04.SPC	MC

[1] Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

[2] Calibration geometry.

[3] Count Duration.

278946 B

Form 754r9.frm (9/19/2001)

Paragon Analytics

Gamma Spectrometer Run Log

Date: 7/1/04

Reviewed By/Date: JP 7/2/04

Sample ID	Ver[1]	Det. No.	Geo[2]	Count Dur. (min.)[3]	Start Time	Analyst	File ID/Comments	Exported?
0405097-14	MC	7	11	240	11:09	JP	041058D07.SPC	MC
GS040514-2ALCS	MC	8	26	30	11:20	JP	041096D08.SPC	MC
0406026-14	JP	2	13	30	12:09	MC	041133D02.SPC	JP
GS040615-4MB	↓	4	↓	↓	↓	↓	041219D04.SPC	↓
↓ -4LCS	↓	3	↓	↓	↓	↓	041127D03.SPC	JP
0406069-1	↓	8	~~11~~ 13	30	↓	MC	041097D08.SPC	JP
0405097-15	MC	2	11	60	12:56	JP	041135D02.SPC	MC
↓ -16	↓	3	↓	120	↓	↓	041130D03.SPC	MC
↓ -18	JP	4	↓	30	↓	↓	041120D04.SPC MC 7/23/04	JP
0406069-2	↓	8	13	↓	↓	↓	041098D08.SPC	JP
↓ -3	MC	8	↓	30	13:37	JP	041099D08.SPC	MC
0405097-20	MC	4	11	30	↓	↓	041221D04.SPC MC 8/1/04	MC
0405096-1	JP	2	↓	1000	14:56	MC	041137D02.SPC	JP
↓ -3	↓	4	↓	↓	↓	↓	041223D04.SPC	JP
0406250-1	JP	8	7*	1000	14:59	MC	041100D08.SPC	JP
0405096-12	JP	7	11	↓	15:36	↓	041059D07.SPC	JP
↓ -12D	JP	3	↓	1000	16:07	MC	041131D03.SPC	JP

MC 7/1/04

[1] Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

[2] Calibration geometry.

[3] Count Duration.

* COUNTED ON A puck MC 7/1/04

278947 B

Form 754r9.frm (9/19/2001)

000338

Paragon Analytics

Gamma Spectrometer Run Log

Date: 7/2/04

Reviewed By/Date: JP 7/2/04

Sample ID	Ver[1]	Det. No.	Geo[2]	Count Dur. (min.)[3]	Start Time	Analyst	File ID/Comments	Exported?
0406089-4	JP	10	NA	5	9:02	JP	041113D10.SPC	NA
↓ -4D	JP	↓	↓	↓	9:09	JP	041114D10.SPC	↓
0406097-3	JP	↓	↓	↓	9:16	JP	041115D10.SPC	↓
↓ -3D	JP	↓	↓	↓	9:24	JP	041116D10.SPC	↓
TC040701-2MB	JP	↓	↓	↓	9:30	JP	041117D10.SPC	↓
↓ LCS	JP	↓	↓	↓	9:38	JP	041118D10.SPC	↓
0406089-1	JP	↓	↓	↓	9:45	JP	041119D10.SPC	↓
↓ -1D	JP	↓	↓	↓	9:58	JP	041120D10.SPC	↓
TC040701-3MB	JP	↓	↓	↓	10:21	JP	041121D10.SPC	↓
↓ LCS	JP	↓	↓	↓	10:32	JP	041122D10.SPC	↓
~~GS040614-2MB~~	~~JP~~	~~4~~	~~11~~		~~8:14~~	~~JP~~		Δ JP 7/2/
0405097-26	JP	2	↓	30	8:22	JP	041139D02.SPC	JP
0406069-4	↓	8	13	↓	↓	↓	041102D08.SPC	JP
0405097-27	JP	7	11	30	8:56	JP	041061D07.SPC	JP
GS040614-2LCS	JP	2	11	30	9:06	JP	041140D02.SPC	JP
0406069-6	↓	8	13	↓	↓	↓	041103D08.SPC	JP
0406069-2D	JP	2	13	30	9:48	JP	041141D02.SPC	JP
↓ -7	↓	7	↓	↓	↓	↓	041062D07.SPC	JP
-7D	↓	8	↓	↓	↓	↓	041104D08.SPC	JP
-8	JP	2	13	30	10:30	JP	041142D02.SPC	JP
-9	↓	4	↓	↓	↓	↓	041225D04.SPC	JP
~~-10~~		~~7~~					Detector Not Calibrated	for Geo JP 7/2/
↓ -11	JP	8	↓	↓	↓	↓	041105D08.SPC	JP
0406065-3	↓	3	11		10:43	JP	041133D03.SPC	JP

[1] Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

[2] Calibration geometry.

[3] Count Duration.

Δ Count stopped. Sample will be recounted for 1000 min on 7/3/04. JP 7/2/04

278943 B

Form 754r9.frm (9/19/2001)

000333

Paragon Analytics

Gamma Spectrometer Run Log

Date: 7/7/04

Reviewed By/Date: JP 7/8/04

Sample ID	Ver[1]	Det. No.	Geo[2]	Count Dur. (min.)[3]	Start Time	Analyst	File ID/Comments	Exported?
0407052-1D	MC	8	7*	60	14:25	JP	041139D08.SPC	MC
GS040707-11MB	↓	4	↓	↓	↓	↓	041256D04.SPC	MC
0407049-3	MC	2	9△	↓	↓	↓	041175D02.SPC	MC
↓ -4	↓	3	↓	↓	↓	↓	041165D03.SPC	MC
0407051-2	MC	7	↓	↓	↓	↓	041091D07.SPC	MC
GS040617-2LCS	↓	10	1	30	↓	↓	041156D10.SPC	MC
0406198-1	JP	↓	8*	1000	15:03	MC	041157D10.SPC	JP
GS040707-11LCS	MC	4	7*	30	15:46	MC	041257D04.SPC	MC
GS040617-2LCSD	↓	8	1	↓	↓	↓	041140D08.SPC	MC
0407051-1	MC	2	9△	60	↓	MC	041176D02.SPC	MC
GS040707-10MB	↓	3	↓	↓	↓	↓	041166D03.SPC	MC
0407051-2D	MC	7	9▽	60	↓	↓	041092D07.SPC	MC
0415026-1 (741)	MC	1	9△	60	16:01	MC	041585D01.SPC	MC
0406111-21	MC	4	1	300	16:45	MC	041258D04.SPC	MC
0406121-12	MC	8	↓	↓	↓	↓	041141D08.SPC	MC
GS040614-2MB	~~MC~~ 0 7/23/04	2	11	1000	17:01	MC	041177D02.SPC	JP
0406121-13	MC	3	1	300	↓	MC	041167D03.SPC	MC
GS040617-2MB	MC	7	↓	↓	↓	↓	041093D07.SPC	MC
0406089-4		4	1	400	22:48	MC	041259D04.SPC	JP
0406097-3		~~8~~ 7 JP 7/7/04	↓	↓	↓	↓	041094D07.SPC	JP
GS040622-2MB		3	1	↓	22:49	MC	041168D03.SPC	JP
0405244-11	0	~~7~~ 8 JP 7/7/04	↓	↓	↓	↓	041142D08.SPC	JP
							MC 7/7/04	

[1] Analyst will verify the position, detector, and geometry when the sample is removed from the detector.

[2] Calibration geometry.

[3] Count Duration.

△ Sample counted with air flow arrow up (↑)

▽ " down (↓) JP 7/7/04

* Sample counted on a puck. JP 7/7/04

0 COUNTS IN PROGRESS MC 7/23/04

278961B

Form 754r9.frm (9/19/2001)

000347

Library File: Kent&Sullivan_FANP+Pa-231.lib
File I.D.: FANP (Fiss. Act. and Nat. Prod)+Pa-231

Pk. #	Energy (keV)	Isotope Name	2ndary Pk #	Type	Gamma Fraction	Halflife
43	657.75	Ag-110M	45	NET	0.9400	2.4990E+02 dys
45	677.71	Ag-110M	48	QUANT	0.1068	2.4990E+02 dys
48	706.67	Ag-110M	51	QUANT	0.1668	2.4990E+02 dys
51	763.93	Ag-110M	61	QUANT	0.2214	2.4990E+02 dys
61	884.67	Ag-110M	64	QUANT	0.7220	2.4990E+02 dys
64	937.48	Ag-110M	86	QUANT	0.3413	2.4990E+02 dys
86	1384.27	Ag-110M	89	QUANT	0.2412	2.4990E+02 dys
89	1505.00	Ag-110M	43	QUANT	0.1306	2.4990E+02 dys
92	1808.65	Al-26	0	NET	0.9973	7.2000E+05 yrs
1	59.54	Am-241	0	NET	0.3590	4.3310E+02 yrs
31	477.56	Be-7	0	NET	0.1052	5.3440E+01 dys
50	727.17	Bi-212	0	NET	0.0658	1.9100E+00 yrs
40	609.32	Bi-214	75	NET	0.4609	1.6000E+03 yrs
75	1120.28	Bi-214	40	QUANT	0.1510	1.6000E+03 yrs
11	165.85	Ce-139	0	NET	0.8035	1.3766E+02 dys
7	133.53	Ce-144	46	NET	0.1109	2.8414E+02 dys
46	696.49	Ce-144	7	QUANT	0.0130	2.8414E+02 dys
58	846.81	Co-56	69	QUANT	0.9999	7.7300E+01 dys
69	1037.83	Co-56	78	QUANT	0.1400	7.7300E+01 dys
78	1175.13	Co-56	79	QUANT	0.0228	7.7300E+01 dys
79	1238.28	Co-56	83	NET	0.6760	7.7300E+01 dys
83	1360.22	Co-56	91	QUANT	0.0429	7.7300E+01 dys
91	1771.49	Co-56	58	QUANT	0.1570	7.7300E+01 dys
6	122.07	Co-57	8	NET	0.8560	2.7000E+02 dys
8	136.43	Co-57	6	QUANT	0.1068	2.7000E+02 dys
56	810.75	Co-58	0	NET	0.9945	7.0780E+01 dys
77	1173.23	Co-60	82	QUANT	0.9997	5.2721E+00 yrs
82	1332.51	Co-60	77	NET	0.9998	5.2721E+00 yrs
24	320.07	Cr-51	0	NET	0.1000	2.7700E+01 dys
32	563.26	Cs-134	33	QUANT	0.0835	2.0623E+00 yrs
33	569.29	Cs-134	38	QUANT	0.1538	2.0623E+00 yrs
38	604.66	Cs-134	54	NET	0.9762	2.0623E+00 yrs
54	795.76	Cs-134	55	QUANT	0.8553	2.0623E+00 yrs
55	801.84	Cs-134	76	QUANT	0.0869	2.0623E+00 yrs
76	1167.86	Cs-134	84	QUANT	0.0180	2.0623E+00 yrs
84	1365.13	Cs-134	32	QUANT	0.0304	2.0623E+00 yrs
44	661.62	Cs-137	0	NET	0.8512	3.0104E+01 yrs
26	344.30	Eu-152	53	QUANT	0.2650	1.3330E+01 yrs
53	778.90	Eu-152	71	QUANT	0.1294	1.3330E+01 yrs
71	1085.80	Eu-152	73	QUANT	0.1021	1.3330E+01 yrs
73	1112.07	Eu-152	87	QUANT	0.1364	1.3330E+01 yrs
87	1408.08	Eu-152	26	NET	0.2100	1.3330E+01 yrs
18	248.04	Eu-154	35	QUANT	0.0660	8.5019E+00 yrs
35	591.70	Eu-154	60	QUANT	0.0460	8.5019E+00 yrs
60	873.20	Eu-154	66	QUANT	0.1227	8.5019E+00 yrs
66	996.30	Eu-154	68	QUANT	0.1030	8.5019E+00 yrs
68	1004.80	Eu-154	18	NET	0.1801	8.5019E+00 yrs
4	105.31	Eu-155	0	NET	0.2120	4.9600E+00 yrs
14	192.34	Fe-59	72	QUANT	0.0308	4.5100E+01 dys
72	1099.22	Fe-59	81	NET	0.5650	4.5100E+01 dys
81	1291.56	Fe-59	14	QUANT	0.4320	4.5100E+01 dys

Pk. #	Energy (keV)	Isotope Name	2ndary Pk #	Type	Gamma Fraction	Halflife
20	284.29	I-131	28	QUANT	0.0614	8.0405E+00 dys
28	364.48	I-131	20	NET	0.8170	8.0405E+00 dys
88	1460.75	K-40	0	NET	0.1100	1.2800E+09 yrs
57	834.81	Mn-54	0	NET	0.9997	3.1220E+02 dys
80	1274.54	Na-22	0	NET	0.9994	2.6000E+00 yrs
47	702.50	Nb-94	0	NET	0.9790	2.0300E+04 yrs
52	765.82	Nb-95	0	NET	0.9999	6.4020E+01 dys
23	302.67	Pa-231	0	NET	0.0230	3.2800E+04 dys
67	1001.03	Pa-234m	0	NET	0.0059	4.4680E+09 yrs
5	115.18	Pb-212	17	QUANT	0.0059	1.9100E+00 yrs
17	238.63	Pb-212	22	NET	0.4330	1.9100E+00 yrs
22	300.09	Pb-212	5	QUANT	0.0327	1.9100E+00 yrs
21	295.22	Pb-214	27	QUANT	0.1920	1.6000E+03 yrs
27	351.99	Pb-214	21	NET	0.3710	1.6000E+03 yrs
25	338.40	Ra-228	63	QUANT	0.1127	5.7500E+00 yrs
63	911.07	Ra-228	65	NET	0.2580	5.7500E+00 yrs
65	968.90	Ra-228	25	QUANT	0.1580	5.7500E+00 yrs
41	621.84	Ru-106	70	NET	0.0981	3.6820E+02 dys
70	1050.47	Ru-106	41	QUANT	0.0173	3.6820E+02 dys
37	602.71	Sb-124	42	NET	0.9826	6.0200E+01 dys
42	645.84	Sb-124	49	QUANT	0.0745	6.0200E+01 dys
49	713.82	Sb-124	85	QUANT	0.0238	6.0200E+01 dys
85	1368.21	Sb-124	90	QUANT	0.0251	6.0200E+01 dys
90	1691.04	Sb-124	37	QUANT	0.4779	6.0200E+01 dys
12	176.29	Sb-125	29	QUANT	0.0682	2.7702E+00 yrs
29	427.95	Sb-125	30	NET	0.3000	2.7702E+00 yrs
30	463.51	Sb-125	36	QUANT	0.1049	2.7702E+00 yrs
36	600.77	Sb-125	39	QUANT	0.1786	2.7702E+00 yrs
39	606.82	Sb-125	12	QUANT	0.0502	2.7702E+00 yrs
62	889.26	Sc-46	0	NET	0.9998	8.3850E+01 dys
16	236.00	Th-227	0	NET	0.1230	2.1700E+01 yrs
2	63.29	Th-234	3	QUANT	0.0390	4.4680E+09 yrs
3	92.50	Th-234	2	NET	0.0553	4.4680E+09 yrs
19	277.36	Tl-208	34	QUANT	0.0631	1.4500E+10 yrs
34	583.14	Tl-208	59	NET	0.8450	1.4500E+10 yrs
59	860.47	Tl-208	19	QUANT	0.1242	1.4500E+10 yrs
9	143.76	U-235	10	NET	0.1096	7.0379E+08 yrs
10	163.35	U-235	13	QUANT	0.0508	7.0379E+08 yrs
13	185.72	U-235	15	ID	0.5720	7.0379E+08 yrs
15	205.31	U-235	9	QUANT	0.0501	7.0379E+08 yrs
74	1115.52	Zn-65	0	NET	0.5060	2.4380E+02 dys

PARAGON ANALYTICS
Radiochemistry Data Package

Section 5

QUALITY ASSURANCE SUMMARY REPORTS

5

Paragon Analytics

QUALITY ASSURANCE SUMMARY SHEET

PAI W.O. # / BATCH 0405097/GS040611-1
TEST γ
METHOD prep
SOP/REV (PREP) 739 r8
SOP/REV (ANAL)

277615

Briefly document any QA or other problems or deviations associated with the analysis of samples. Problems could result from: log-in, color, odor, dilution, consistency, scheduling, equipment, or instrumentation, or may include documentation of minor deviations necessary due to unique DQO's or sample characteristics.

The samples were digested per SOP 773 r8 without the addition of boric acid in step 8.3.10 to prevent interferences with any other tests (such as Pb-210). The samples were brought to 1L with DI water and packed as a Geo1. After gamma analysis the samples will be used to aliquot for other analyses.

CW 6/16/04

TECHNICIAN/ANALYST [signature] DATE 6/16/04

DEPARTMENT MANAGER [signature] DATE 6/16/04

FORM 302r6.doc (4/22/04)

PARAGON ANALYTICS
Radiochemistry Data Package

Section 6

LABORATORY BENCH SHEETS

6

7/5 C3R

Paragon Analytics

Radiochemistry Instrument Worksheet

Prep Batch: GS040611-1

Prep Procedure: GAMMASCAN

Analytical QASS / NCR? Y / N NA

Prep Num	Lab ID Collection Date	QC Type	Init Alq	Fin Alq	Units Geo.	Cnt 1 File Cnt Dur (min)	Cnt 1 Inst/Det	Cnt 1 Count Date	Cnt 2 File Cnt Dur (min)	Cnt 2 Inst/Det	Cnt 2 Count Date	Cnt 3 File Cnt Dur (min)	Cnt 3 Inst/Det	Cnt 3 Count Date	Notes
1	0405097-2 05/07/04 13:30	SMP	0.881	0.881	g 01	60	10	6/22/04							
1	0405097-2 05/07/04 13:30	DUP	0.881	0.881	g 01	90	3								CT DUP
1	0405097-3 05/07/04 13:20	SMP	0.9452	0.9452	g 01	30	10								
1	0405097-17 05/04/04 09:50	SMP	1.371	1.371	g 01		10								
1	0405097-19 05/07/04 17:00	SMP	1.4461	1.4461	g 01	60	10								*
1	0405097-19 05/07/04 17:00	DUP	1.4461	1.4461	g 01	60	7	6/23/04							CT DUP *
1	0405097-21 05/07/04 17:20	SMP	1.0375	1.0375	g 01	60	3	6/22/04							*
1	0405097-22 05/07/04 18:00	SMP	1.5337	1.5337	g 01	30	1								
1	0405097-23 05/07/04 13:00	SMP	1.1558	1.1558	g 01		7								*
1	0405097-24 05/07/04 12:10	SMP	1.9311	1.9311	g 01	60	8	6/23/04							
1	0405097-25 05/07/04 12:30	SMP	1.4498	1.4498	g 01		7								
1	0405097-28 05/06/04 14:00	SMP	1.5248	1.5248	g 01		8								*
1	0405097-29 05/06/04 19:00	SMP	1.3546	1.3546	g 01		7								
1	0405097-30 05/06/04 17:00	SMP	1.1863	1.1863	g 01		8								
1	GS040611-1 06/11/04 12:54	MB	1	1	g 01	90	78								
1	GS040611-1 06/11/04 12:54	LCS	1	1	g 01	31 ~~30~~	87								

MC 7/23/04

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	AM-241	588	235.978	DPM/ml	06/11/04	1000	ml	
S1	CD-109	588	656.960	DPM/ml	06/11/04	1000	ml	
S1	CO-60	588	101.701	DPM/ml	06/11/04	1000	ml	
S1	CS-137	588	83.595	DPM/ml	06/11/04	1000	ml	

*USE KENT_FANP + Pa-231 LIB. FOR ANALYSIS. MC 6/17/04

Radiochemistry Prep Worksheet

Paragon Analytics

Prep Batch: GS040611-1

Prep Procedure: GAMMASCAN

Reviewed By: CRW **Review Date:** 6/16/04

Non-Routine Pre-Treatment? Y / N **Batch:** _____ **Re-Prep?** Y / N **Batch:** _____ **Prep QASS / NCR?** Y / N _____

Prep SOP: PAI 739 **Rev:** 8
Prep SOP: NONE
Matrix Class: solid

Prep Analyst: Chad Wangeline
Prep Date: 6/11/04
Prep Dept: GM

Balance: 10
Balance:

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq g	Fin Alq g	Prep Basis	Geometry	Standards	Prep Notes
1	1	0405097-2	SMP		0.881	0.881	Dry Weight	01		
2	1	0405097-2	DUP		0.881	0.881	Dry Weight	01		COUNT DUPLICATE
3	1	0405097-3	SMP		0.9452	0.9452	Dry Weight	01		
4	1	0405097-17	SMP		1.371	1.371	Dry Weight	01		
5	1	0405097-19	SMP		1.4461	1.4461	Dry Weight	01		
6	1	0405097-19	DUP		1.4461	1.4461	Dry Weight	01		COUNT DUPLICATE
7	1	0405097-21	SMP		1.0375	1.0375	Dry Weight	01		
8	1	0405097-22	SMP		1.5337	1.5337	Dry Weight	01		
9	1	0405097-23	SMP		1.1558	1.1558	Dry Weight	01		
10	1	0405097-24	SMP		1.9311	1.9311	Dry Weight	01		
11	1	0405097-25	SMP		1.4498	1.4498	Dry Weight	01		
12	1	0405097-28	SMP		1.5248	1.5248	Dry Weight	01		
13	1	0405097-29	SMP		1.3546	1.3546	Dry Weight	01		
14	1	0405097-30	SMP		1.1863	1.1863	Dry Weight	01		
15	1	GS040611-1	MB		1	1	Dry Weight	01		
16	1	GS040611-1	LCS		1	1	Dry Weight	01	S1	

Spiked By: N/A **Date:** N/A
Witnessed By: N/A **Date:** N/A

Relinquished By: SEE
Date: PREVIOUS
Received By: ↓
Date: ↓

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	AM-241	588	235.978	DPM/ml	06/11/04	1000	ml	
S1	CD-109	588	656.960	DPM/ml	06/11/04	1000	ml	
S1	CO-60	588	101.701	DPM/ml	06/11/04	1000	ml	
S1	CS-137	588	83.595	DPM/ml	06/11/04	1000	ml	

000347

Comments

Radiochemistry Prep Worksheet

Paragon Analytics

Prep Batch: GS040611-1

Prep Procedure: GAMMASCAN

Reviewed By: CRW CW **Review Date:** 6/16/04

Non-Routine Pre-Treatment? (Y) / N **Batch:** See QASS **Re-Prep?** Y / (N) **Batch:** N/A **Prep QASS / NCR?** (Y) / N 277614, 277615

Prep SOP: PAI 739 **Rev:** 8
Prep SOP: NONE
Matrix Class: solid

Prep Analyst: Chad Wangeline
Prep Date: 6/11/04
Prep Dept: GM

Balance: 10
Balance:

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq g	Fin Alq g	Prep Basis	Geometry	Prep Notes
1	1	0405097-2	SMP		0.881	0.881	Dry Weight	01	CW 6/16/04
2	1	0405097-2	DUP		0.881	0.881	Dry Weight	01	COUNT DUPLICATE
3	1	0405097-3	SMP		0.9452	0.9452	Dry Weight	01	
4	1	0405097-17	SMP		1.371	1.371	Dry Weight	01	CW 6/16/04
5	1	0405097-19	SMP		1.4461	1.4461	Dry Weight	01	
6	1	0405097-19	DUP		1.4461	1.4461	Dry Weight	01	COUNT DUPLICATE
7	1	0405097-21	SMP		1.0375	1.0375	Dry Weight	01	
8	1	0405097-22	SMP		1.5337	1.5337	Dry Weight	01	
9	1	0405097-23	SMP		1.1558	1.1558	Dry Weight	01	
10	1	0405097-24	SMP		1.9311	1.9311	Dry Weight	01	
11	1	0405097-25	SMP		1.4498	1.4498	Dry Weight	01	
12	1	0405097-28	SMP		1.5248	1.5248	Dry Weight	01	CW 6/16/04
13	1	0405097-29	SMP		1.3546	1.3546	Dry Weight	01	
14	1	0405097-30	SMP		1.1863	1.1863	Dry Weight	01	
15	1	GS040611-1	MB		1	1	Dry Weight	01	
16	1	GS040611-1	LCS		1	1	Dry Weight	01	

Spiked By: N/A **Date:** N/A
Witnessed By: N/A **Date:** N/A

Relinquished By: CW
Date: 6/16/04
Received By: MC
Date: 6/16/04

Comments

SAMPLE CONDITION FORM (SOLIDS)

ANALYST: CW

ANALYSIS DATE: 6/11/04 METHOD: X

WORK ORDER	SAMPLE ID	SAMPLE CONDITION		
		Dry/Wet	TEXTURE	Remarks
0405097	2	Dry	Ground	by outside vendor
	3			
	17			
	19			
	21			
	22			
	23			
	24			
	25			
	28			
	29			
	30			

CW 6/16/04

7/5

Paragon Analytics

Radiochemistry Instrument Worksheet

Prep Batch: GS040614-2

Prep Procedure: GAMMASCAN

Analytical QASS / NCR? Y / N NA

Prep Num	Lab ID Collection Date	QC Type	Init Alq	Fin Alq	Units Geo.	Cnt 1 File Cnt Dur (min)	Cnt 1 Inst/Det	Cnt 1 Count Date	Cnt 2 File Cnt Dur (min)	Cnt 2 Inst/Det	Cnt 2 Count Date	Cnt 3 File Cnt Dur (min)	Cnt 3 Inst/Det	Cnt 3 Count Date	Notes
1	0405097-1 05/06/04 19:00	SMP	94.4	94.4	g 11	30	2	7/1/04							
1	0405097-1 05/06/04 19:00	DUP	96.7	96.7	g 11		3								
1	0405097-4 05/07/04 13:11	SMP	93.9	93.9	g 11		4								
1	0405097-5 05/07/04 13:38	SMP	92.2	92.2	g 11		7								
1	0405097-6 05/07/04 14:00	SMP	96.9	96.9	g 11		2								
1	0405097-7 05/07/04 14:20	SMP	103.1	103.1	g 11		3								
1	0405097-8 05/07/04 14:38	SMP	101.2	101.2	g 11		2								
1	0405097-9 05/07/04 14:58	SMP	89.5	89.5	g 11		3								
1	0405097-10 05/07/04 15:10	SMP	92	92	g 11		4								
1	0405097-11 05/07/04 15:10	SMP	104.1	104.1	g 11		7								
1	0405097-11 05/07/04 15:10	DUP	106.6	106.6	g 11		2								
1	0405097-12 05/07/04 15:20	SMP	108	108	g 11		3								
1	0405097-13 05/07/04 15:35	SMP	99.8	99.8	g 11		4								
1	0405097-14 05/03/04 13:40	SMP	91.3	91.3	g 11	240	7								
1	0405097-15 05/03/04 14:00	SMP	81.8	81.8	g 11	60	82								MC 7/1/04
1	0405097-16 05/03/04 14:20	SMP	94.6	94.6	g 11	120	3								
1	0405097-18 05/07/04 16:30	SMP	97.1	97.1	g 11	30	4								
1	0405097-20 05/07/04 17:30	SMP	118.7	118.7	g 11		4								
1	0405097-26 05/07/04 19:00	SMP	99.3	99.3	g 11	30	2	7/2/04							
1	0405097-27 05/07/04 18:40	SMP	95	95	g 11	30	7								
1	GS040614-2 06/14/04 15:48	MB	100	100	g 11	240	4		*1000 Z 7.7.04						*RECOUNT
1	GS040614-2 06/14/04 15:48	LCS	100	100	g 11	30	2								

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	AM-241	589	2,237.340	DPM/g	06/14/04	100	g	
S1	CD-109	589	6,200.994	DPM/g	06/14/04	100	g	
S1	CO-60	589	964.170	DPM/g	06/14/04	100	g	
S1	CS-137	589	793.478	DPM/g	06/14/04	100	g	

*COUNT STOPPED; RECOUNT. MC 7/2/04

000057

Radiochemistry Prep Worksheet

Paragon Analytics

Prep Batch: GS040614-2

Prep Procedure: GAMMASCAN

Reviewed By: CXO C.O. -6/14/04 **Review Date:** 6/14/04

Non-Routine Pre-Treatment? Y (N) **Batch:** NA **Re-Prep?** Y (N) **Batch:** NA **Prep QASS / NCR?** Y (N) NA

Prep SOP: PAI 739 **Rev:** 8
Prep SOP: NONE
Matrix Class: solid

Prep Analyst: Carson Odell C.O.-6/14/04
Prep Date: 6/14/04
Prep Dept: GM

Balance: 15
Balance:

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq g	Fin Alq g	Prep Basis	Geometry	Standards	Prep Notes
1	1	0405097-1	SMP		94.4	94.4	Dry Weight	11		
2	1	0405097-1	DUP		96.7	96.7	Dry Weight	11		
3	1	0405097-4	SMP		93.9	93.9	Dry Weight	11		
4	1	0405097-5	SMP		92.2	92.2	Dry Weight	11		
5	1	0405097-6	SMP		96.9	96.9	Dry Weight	11		
6	1	0405097-7	SMP		103.1	103.1	Dry Weight	11		
7	1	0405097-8	SMP		101.2	101.2	Dry Weight	11		
8	1	0405097-9	SMP		89.5	89.5	Dry Weight	11		
9	1	0405097-10	SMP		92	92	Dry Weight	11		
10	1	0405097-11	SMP		104.1	104.1	Dry Weight	11		
11	1	0405097-11	DUP		106.6	106.6	Dry Weight	11		
12	1	0405097-12	SMP		108	108	Dry Weight	11		
13	1	0405097-13	SMP		99.8	99.8	Dry Weight	11		
14	1	0405097-14	SMP		91.3	91.3	Dry Weight	11		
15	1	0405097-15	SMP		81.8	81.8	Dry Weight	11		
16	1	0405097-16	SMP		94.6	94.6	Dry Weight	11		
17	1	0405097-18	SMP		97.1	97.1	Dry Weight	11		
18	1	0405097-20	SMP		118.7	118.7	Dry Weight	11		
19	1	0405097-26	SMP		99.3	99.3	Dry Weight	11		
20	1	0405097-27	SMP		95	95	Dry Weight	11		
21	1	GS040614-2	MB		100	100	Dry Weight	11		
22	1	GS040614-2	LCS		100	100	Dry Weight	11	S1	

C.O.-6/14/04

C.O.-6/14/04

Spiked By: N/A **Date:** N/A
Witnessed By: N/A **Date:** N/A

Relinquished By: C.O.
Date: 6/14/04
Received By: MC
Date: 6/17/04

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	AM-241	589	2,237.340	DPM/g	06/14/04	100	g	
S1	CD-109	589	6,200.994	DPM/g	06/14/04	100	g	
S1	CO-60	589	964.170	DPM/g	06/14/04	100	g	
S1	CS-137	589	793.478	DPM/g	06/14/04	100	g	

Comments

Paragon Analytics

Radiochemistry Prep Worksheet

Prep Batch: GS040614-2

Prep Procedure: GAMMASCAN

Prep Batch Not Validated!!!

Reviewed By: **Review Date:**

Non-Routine Pre-Treatment? Y / N **Batch:** _____ **Re-Prep? Y / N** **Batch:** _____ **Prep QASS / NCR? Y / N** _____

Prep SOP: PAI 739 **Rev:** 8
Prep SOP: NONE
Matrix Class: solid

Prep Analyst: Carson Odell
Prep Date: 6/14/04
Prep Dept: GM

Balance: 15
Balance:

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq g	Fin Alq g	Prep Basis	Geometry	Standards	Prep Notes
1	1	0405097-1	SMP		94.4	94.4	Dry Weight	11		
2	1	0405097-1	DUP		96.7	96.7	Dry Weight	11		
3	1	0405097-4	SMP		93.9	93.9	Dry Weight	11		
4	1	0405097-5	SMP		92.2	92.2	Dry Weight	11		
5	1	0405097-6	SMP		96.9	96.9	Dry Weight	11		
6	1	0405097-7	SMP		103.1	103.1	Dry Weight	11		
7	1	0405097-8	SMP		101.2	101.2	Dry Weight	11		
8	1	0405097-9	SMP		89.5	89.5	Dry Weight	11		
9	1	0405097-10	SMP		92	92	Dry Weight	11		
10	1	0405097-11	SMP		104.1	104.1	Dry Weight	11		
11	1	0405097-11	DUP		106.6	106.6	Dry Weight	11		
12	1	0405097-12	SMP		108	108	Dry Weight	11		
13	1	0405097-13	SMP		99.8	99.8	Dry Weight	11		
14	1	0405097-14	SMP		91.3	91.3	Dry Weight	11		
15	1	0405097-15	SMP		81.8	81.8	Dry Weight	11		
16	1	0405097-16	SMP		94.6	94.6	Dry Weight	11		
17	1	0405097-18	SMP		97.1	97.1	Dry Weight	11		
18	1	0405097-20	SMP		118.7	118.7	Dry Weight	11		
19	1	0405097-26	SMP		99.3	99.3	Dry Weight	11		
20	1	0405097-27	SMP		95	95	Dry Weight	11		
21	1	GS040614-2	MB		100	100	Dry Weight	11		
22	1	GS040614-2	LCS		100	100	Dry Weight	11	S1	

DRAFT

Spiked By: N/A **Date:** N/A
Witnessed By: N/A **Date:** N/A

Relinquished By: _____
Date: _____
Received By: _____
Date: _____

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	AM-241	589	2,237.340	DPM/g	06/14/04	100	g	
S1	CD-109	589	6,200.994	DPM/g	06/14/04	100	g	
S1	CO-60	589	964.170	DPM/g	06/14/04	100	g	
S1	CS-137	589	793.478	DPM/g	06/14/04	100	g	

Comments

Supersedes: NA

Gamma Spectroscopy Prep Worksheet

Batch ID: 04-05-097
Analyst: C.O.
Prep. Date: 6/14/04
SOP: 739 R~~6~~B

Top Load Balance No: 15
Oven No: NA
Date/Time In Oven: NA
Date/Time Out Oven: —

Math Checked: C.O.

	Work Order Number	Sample Number	Client Sample ID	Collection Date	Sample + Jar (G)	Jar (G)	Sample Aliquot (G)	Geometry	Remarks
		B1	Blank		N/A	N/A	See Average		dry WT.—rec'd dried & ground
1	04-05-097	1	See Work Order	See Work Order	143.5	49.1	94.4	11	none
2	dup	1			145.5	48.8	96.7		
3		4			143.1	49.2	93.9		
4		5			141.5	49.3	92.2		
5		6			146.5	49.6	96.9		
6		7			152.6	49.5	103.1		
7		8			150.0	48.8	101.2		
8		9			138.3	48.8	89.5		
9		10			140.8	48.8	92.0		
10		11			153.2	49.1	104.1		
11	dup	11			156.1	49.5	106.6		
12		12			156.9	48.9	108.0		
13		13			149.2	49.4	99.8		
14		14			140.5	49.2	91.3		
15		15			130.4	48.6	81.8		
16		16			143.9	49.3	94.6		
17		18			146.7	49.6	97.1		
18		20			168.2	49.5	118.7		
19		26			148.4	49.1	99.3		
20		27			144.1	49.1	95.0		
21			C.O. 6/14/04						
22									

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PARAGON ANALYTICS
Radiochemistry Data Package

Section 7

STANDARDS TRACEABILITY DOCUMENTS

7

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

PAIQ 0588
recd 9-25-01

62271A-307

1.0 Liter Solid in 138G GA-MA Beaker

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration date: July 1, 2001 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	1418	5.0
Cd-109	88	462.6	d	1983	4.6
Co-57	122	271.79	d	1086	4.1
Ce-139	166	137.6	d	1478	4.4
Hg-203	279	46.61	d	3141	4.1
Sn-113	392	115.1	d	1960	4.2
Cs-137	662	30.07	y	1270	4.8
Y-88	898	106.6	d	5199	4.1
Co-60	1173	5.271	y	2487	5.0
Co-60	1332	5.271	y	2510	4.2
Y-88	1836	106.6	d	5440	4.6

P O NUMBER 0001675, Item 1

SOURCE PREPARED BY: M Taskaeva
M. Taskaeva Radiochemist

Q A APPROVED: M. Mty 9-19-01

This standard will expire one year after the calibration date.

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 - U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY

BATCH 105 MIXED GAMMA STANDARDS WITH Am-241
CALIBRATION DATE: July 1, 2001 12:00 EST

GAMMA RAY ENERGY (keV)	RANDOM ERROR % (99 % CL)	SYSTEMATIC ERROR %	TOTAL %
59.5	2.0	3.0	5.0
88	1.4	3.2	4.6
122	1.4	2.7	4.1
166	1.6	2.8	4.4
279	1.1	3.0	4.1
392	1.4	2.8	4.2
662	2.0	2.8	4.8
898	1.1	3.0	4.1
1173	2.2	2.8	5.0
1332	1.4	2.8	4.2
1836	1.6	3.0	4.6

The systematic error includes the error in calibration standards, weighing error, and estimated counting corrections. All uncertainties are stated at the 99% confidence level.

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (kev/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

Analytics, Incorporated
Atlanta, Georgia

is a participant for the period January 1, 2001, through December 31, 2001, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed below.*

For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory

*As guidance for the proper use of Reports of Traceability, it should be emphasized that the National Institute of Standards and Technology is concerned only with fostering good measurements capability and consistency with the national measurements system. The assurance of the proper application of that capability to the ultimate consumer products is the responsibility of each manufacturer of these products and of the Federal regulatory agencies.

A continuing traceability program in radioactivity demonstrates, to the degree established by the periodic assays of calibrated radioactivity samples, a continuing competence to maintain the methods and standards necessary for accurate measurement. Such a program cannot, however, endorse each and every measurement nor the final product, any more than a spot check can vouch for every unchecked item. Care should be taken, therefore, not to imply such endorsement. The proper use of this Report is governed by section 200.114 of Title 15 of the Code of

000357

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

62272-307

PA ID 0589
recd 9-25-01

100 Grams of Sand in 16 Ounce PP Jar

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: July 1, 2001 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	1345	5.0
Cd-109	88	462.6	d	1881	4.6
Co-57	122	271.79	d	1030	4.1
Ce-139	166	137.6	d	1402	4.4
Hg-203	279	46.61	d	2980	4.1
Sn-113	392	115.1	d	1860	4.2
Cs-137	662	30.07	y	1205	4.8
Y-88	898	106.6	d	4932	4.1
Co-60	1173	5.271	y	2360	5.0
Co-60	1332	5.271	y	2381	4.2
Y-88	1836	106.6	d	5162	4.6

Approximately 62.5 mL of customer supplied sand.
P O NUMBER 0001675, Item 2

SOURCE PREPARED BY: M Taskaeva
M. Taskaeva Radiochemist

Q A APPROVED: D.M. [illegible] 9-19-01

This standard will expire one year after the calibration date.

000353

ANALYTICS

1380 Seaboard Industrial Blvd.
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email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY

BATCH 105 MIXED GAMMA STANDARDS WITH Am-241
CALIBRATION DATE: July 1, 2001 12:00 EST

GAMMA RAY ENERGY (keV)	RANDOM ERROR % (99 % CL)	SYSTEMATIC ERROR %	TOTAL %
59.5	2.0	3.0	5.0
88	1.4	3.2	4.6
122	1.4	2.7	4.1
166	1.6	2.8	4.4
279	1.1	3.0	4.1
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898	1.1	3.0	4.1
1173	2.2	2.8	5.0
1332	1.4	2.8	4.2
1836	1.6	3.0	4.6

The systematic error includes the error in calibration standards, weighing error, and estimated counting corrections. All uncertainties are stated at the 99% confidence level.

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (kev/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

Analytics, Incorporated
Atlanta, Georgia

is a participant for the period January 1, 2001, through December 31, 2001, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed below.*

For the Director,

Lisa Karam

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory

*As guidance for the proper use of Reports of Traceability, it should be emphasized that the National Institute of Standards and Technology is concerned only with fostering good measurements capability and consistency with the national measurements system. The assurance of the proper application of that capability to the ultimate consumer products is the responsibility of each manufacturer of these products and of the Federal regulatory agencies.

A continuing traceability program in radioactivity demonstrates, to the degree established by the periodic assays of calibrated radioactivity samples, a continuing competence to maintain the methods and standards necessary for accurate measurement. Such a program cannot, however, endorse each and every measurement nor the final product, any more than a spot check can vouch for every unchecked item. Care should be taken, therefore, not to imply such endorsement. The proper use of this Report is governed by section 200.114 of Title 15 of the Code of Federal Regulations. These regulations may be met if Reports are quoted only in their entirety. Excerpts out of

PARAGON ANALYTICS
Radiochemistry Data Package

Section 8

CHAIN OF CUSTODY

8

Paragon Analytics

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0405097
Client Name: Kent & Sullivan Inc.
Client Project Name: Ross Adams
Client Project Number:
Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
HR-01	0405097-1		SOLID	06-May-04	19:00
MR-01	0405097-2		SOLID	07-May-04	13:30
MR-02	0405097-3		SOLID	07-May-04	13:20
GR-01	0405097-4		SOLID	07-May-04	13:11
GR-02	0405097-5		SOLID	07-May-04	13:38
GR-03	0405097-6		SOLID	07-May-04	14:00
GR-04	0405097-7		SOLID	07-May-04	14:20
GR-05	0405097-8		SOLID	07-May-04	14:38
GR-06	0405097-9		SOLID	07-May-04	14:58
GR-07	0405097-10		SOLID	07-May-04	15:10
GR-08	0405097-11		SOLID	07-May-04	15:10
GR-09	0405097-12		SOLID	07-May-04	15:20
GR-10	0405097-13		SOLID	07-May-04	15:35
QM-01	0405097-14		SOLID	03-May-04	13:40
QM-02	0405097-15		SOLID	03-May-04	14:00
QM-03	0405097-16		SOLID	03-May-04	14:20
300-01	0405097-17		SOLID	04-May-04	9:50
300-02	0405097-18		SOLID	07-May-04	16:30
700-01	0405097-19		SOLID	07-May-04	17:00
700-02	0405097-20		SOLID	07-May-04	17:30
700-03	0405097-21		SOLID	07-May-04	17:20
700-04	0405097-22		SOLID	07-May-04	18:00
900-01	0405097-23		SOLID	07-May-04	13:00
900-02	0405097-24		SOLID	07-May-04	12:10
900-03	0405097-25		SOLID	07-May-04	12:30
900-04	0405097-26		SOLID	07-May-04	19:00
900-05	0405097-27		SOLID	07-May-04	18:40
OSA-01	0405097-28		SOLID	06-May-04	14:00
OSA-02	0405097-29		SOLID	06-May-04	19:00
OSA-03	0405097-30		SOLID	06-May-04	17:00

Paragon Analytics, Inc.

225 Commerce Drive Fort Collins, CO 80524
800-443-1511 or (970) 490-1511 (970) 490-1522 Fax

Chain-of-Custody

Accession Number (LAB ID) 0405097

Date _____ Page 5 of 9

Project Name / No.: _____ Sampler(s): _____ (circle one) Turnaround: Standard or Rush (Due _____) Dispose or Return to Client

Report To:
Phone:
Fax:
Company:
Address:
See pg 1

circle method or specify under comments

Sample ID	Date 2004	Time *	Lab ID	Matrix	No. of Containers	VOCs SW8260B E624 E524.2 OLMO___	BTEX (only) SW8021B	SVOCs SW8270C E625 E525 OLMO___	OC Pesticides SW8081A E608 E508 OLMO___	PCBs SW8082 E608 E508 OLMO___	OP Pesticides SW8141A E614	Herbicides SW8151A E615	TCLP Organics SW1311 8260B 8270C 8081A 8151A	TCLP Metals SW 1311 6010B 7471	Total Metals SW6010B 7470 7471 E200 ILMO___	Dissolved Metals SW6010B 7470 E200 ILMO___	Reactive CN / S SW846 Chapter 7	Hexavalent Chromium SW7196A Alkaline Digest? Y / N	Inorganic Anions ** SW9056 E300.0	pH SW9040B 9045C	Oil & Grease SW9071A E413.2	TPH GRO DRO SW8015B (both)	TOX SW9020B	Gross Alpha / Beta SW9310 E900.0	Actinides by PAI SOP (circle): Pu / U / Am / Th / Cm	Uranium by KPA D5174-91 Isotopic	Tritium E906.0	Total Alpha-Emitting Radium SW9315 E903.0	Radium 226 SW9315 E903.0 Radium 228 SW9320 E904.0	Strontium 89 D5811-95 Strontium 90 D5811-95	Gamma Isotopes ** E901.1	Th - isotopic	
SOIL-01 (*)	5-6	1600		SOIL	3										C											X			X			X	
SOIL-02	5-6	1540		SOIL	3										C											X			X			X	
SOIL-04	5-6	1504		SOIL	3										C											X			X			X	
SOIL-05	5-6	1510		SOIL	3										C											X			X			X	
SOIL-07	5-7	1350		SOIL	3										C											X			X			X	
SOIL-08	5-7	1615		SOIL	3										C											X			X			X	
SOIL-09	5-7	1410		SOIL	3										C											X			X			X	
SOIL-10	5-7	1640		SOIL	3										C											X			X			X	
HR-01	5-6	1900	1	RK	1										C											X			X			X	

Comments:
(*) on WO # 0405096
Aw 5/12/04

Form 202r4.xls (1/3/01)

Relinquished By: (1)	Relinquished By: (2)
Signature Gerald Warrick	Signature
Printed Name Gerald Warrick	Printed Name
Date 5-10-04 Time 10:00	Date Time
Company Kent & Sullivan	Company

Received By: (1)	Received By: (2)
Signature Amy Wolf	Signature
Printed Name Amy Wolf	Printed Name
Date 5/11/04 Time 1615	Date Time
Company Paragon Analytics	Company

* Time Zone (circle one): EST CST MST PST

** Indicate specific analytes under comments.

Distribution: white / yellow (Paragon); pink retained by originator.

000363

Paragon Analytics, Inc.

225 Commerce Drive Fort Collins, CO 80524
800-443-1511 or (970) 490-1511 (970) 490-1522 Fax

Chain-of-Custody

Accession Number (LAB ID) 0405097

Date _____ Page 6 of 9

Project Name / No.: _____ Sampler(s): _____ (circle one) Turnaround: Standard or Rush (Due _____) Dispose or Return to Client

Report To:
Phone:
Fax:
Company:
Address:
See pg 1

circle method or specify under comments

Sample ID	Date 2004	Time *	Lab ID	Matrix	No. of Containers	VOCs SW8260B E624 E524.2 OLMO__	BTEX (only) SW8021B	SVOCs SW8270C E625 E525 OLMO__	OC Pesticides SW8081A E608 E508 OLMO__	PCBs SW8082 E608 E508 OLMO__	OP Pesticides SW8141A E614	Herbicides SW8151A E615	TCLP Organics SW1311 8260B 8270C 8081A 8151A	TCLP Metals SW 1311 6010B 7471	Total Metals SW6010B 7470 7471 E200 ILMO__	Dissolved Metals SW6010B 7470 E200 ILMO__	Reactive CN / S SW846 Chapter 7	Hexavalent Chromium SW7196A Alkaline Digest? Y / N	Inorganic Anions ** SW9056 E300.0	pH SW9040B 9045C	Oil & Grease SW9071A E413.2	TPH GRO DRO SW8015B (both)	TOX SW9020B	Gross Alpha / Beta SW9310 E900.0	Actinides by PAI SOP (circle): Pu / U / Am / Th / Cm	Uranium by KPA D5174-91 Isotopic	Tritium E906.0	Total Alpha-Emitting Radium SW9315 E903.0	Radium 226 SW9315 E903.0 Radium 228 SW9320 E904.0	Strontium 89 D5811-95 Strontium 90 D5811-95	Gamma Isotopes ** E901.1	Th- isotopic
MR-01	5-7	1330	2	RK	3										C											X			X			X
MR-02	5-7	1320	3	RK	3										C											X			X			X
GR-01	5-7	1311	4	RK	1										C											X			X			X
GR-02		1338	5		1										C																	
GR-03		1400	6		1										C																	
GR-04		1420	7		1										C																	
GR-05		1438	8		1										C																	
GR-06		1458	9		1										C																	
GR-07		1510	10		1										C																	

Comments:

Relinquished By: (1)
Signature Gerald Warrick
Printed Name Gerald Warrick
Date 5-10-04 Time 10:00
Company Kent & Sullivan

Relinquished By: (2)
Signature _____
Printed Name _____
Date _____ Time _____
Company _____

Received By: (1)
Signature _____
Printed Name Amy Wolf
Date 5/11/04 Time 1015
Company Paragon Analytics

Received By: (2)
Signature _____
Printed Name _____
Date _____ Time _____
Company _____

Form 202r4.xls (1/3/01)

* Time Zone (circle one): EST CST MST PST ** Indicate specific analytes under comments. Distribution: white / yellow (Paragon); pink retained by originator.

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Paragon Analytics, Inc.
225 Commerce Drive Fort Collins, CO 80524
800-443-1511 or (970) 490-1511 (970) 490-1522 Fax

Chain-of-Custody

Accession Number (LAB ID) 0405097

Date _____ Page 7 of 9

Project Name / No.: _____ Sampler(s): _____ (circle one) Turnaround: Standard or Rush (Due _____) Dispose or Return to Client

Report To:
Phone:
Fax:
Company:
Address: see pg 1

circle method or specify under comments

Sample ID	Date 2004	Time *	Lab ID	Matrix	No. of Containers	VOCs SW8260B E624 E524.2 OLMO__	BTEX (only) SW8021B	SVOCs SW8270C E625 E525 OLMO__	OC Pesticides SW8081A E608 E508 OLMO__	PCBs SW8082 E608 E508 OLMO__	OP Pesticides SW8141A E614	Herbicides SW8151A E615	TCLP Organics SW1311 8260B 8270C 8081A 8151A	TCLP Metals SW 1311 6010B 7471	Total Metals SW6010B 7470 7471 E200 ILMO__	Dissolved Metals SW6010B 7470 E200 ILMO__	Reactive CN / S SW846 Chapter 7	Hexavalent Chromium SW7196A Alkaline Digest? Y / N	Inorganic Anions ** SW9056 E300.0	pH SW9040B 9045C	Oil & Grease SW9071A E413.2	TPH GRO DRO SW8015B (both)	TOX SW9020B	Gross Alpha / Beta SW9310 E900.0	Actinides by PAI SOP (circle): Pu / U / Am / Th / Cm	~~Total~~ Uranium ~~by KPA D6474.01~~ Isotopic	Tritium E906.0	Total Alpha-Emitting Radium SW9315 E903.0	Radium 226 SW9315 E903.0 Radium 228 SW9320 E904.0	Strontium 89 D5811-95 Strontium 90 D5811-95	Gamma Isotopes ** E901.1	Th- isotopic
GR-08	5-7	1510	11	RK	1										C											X			X			X
GR-09	↓	1520	12	↓	1										C											X			X			X
GR-10	↓	1535	13	↓	1										C											X			X			X
QM-01	5-3	1340	14	RK	1										C											X			X			X
QM-02	↓	1400	15	↓	1										C											X			X			X
QM-03	↓	1420	16	↓	1										C											X			X			X
300-01	5-4	0950	17	RK	1										C											X			X			X
300-02	5-7	1630	18	RK	1										C											X			X			X

Comments:

Relinquished By: (1)
Signature Gerald Warrick
Printed Name Gerald Warrick
Date 5-10-04 Time 10:00
Company Kent & Sullivan

Relinquished By: (2)
Signature _____
Printed Name _____
Date _____ Time _____
Company _____

Received By: (1)
Signature A Wolf
Printed Name Amy Wolf
Date 5/11/04 Time 1645
Company Paragon Analytics

Received By: (2)
Signature _____
Printed Name _____
Date _____ Time _____
Company _____

Form 202r4.xls (1/3/01)

* Time Zone (circle one): EST CST MST PST ** Indicate specific analytes under comments. Distribution: white / yellow (Paragon); pink retained by originator.

000365

Paragon Analytics, Inc.

225 Commerce Drive Fort Collins, CO 80524
800-443-1511 or (970) 490-1511 (970) 490-1522 Fax

Chain-of-Custody

Accession Number (LAB ID) 0405097

Date _____ Page 8 of 9

Project Name / No.: _____ Sampler(s): _____ (circle one) Turnaround: Standard or Rush (Due _____) Dispose or Return to Client

Report To:
Phone:
Fax:
Company:
Address:

See pg 1

circle method or specify under comments

Sample ID	Date 2004	Time *	Lab ID	Matrix	No. of Containers	VOCs SW8260B E624 E524.2 OLMO__	BTEX (only) SW8021B	SVOCs SW8270C E625 E525 OLMO__	OC Pesticides SW8081A E608 E508 OLMO__	PCBs SW8082 E608 E508 OLMO__	OP Pesticides SW8141A E614	Herbicides SW8151A E615	TCLP Organics SW1311 8260B 8270C 8081A 8151A	TCLP Metals SW 1311 6010B 7471	Total Metals SW6010B 7470 7471 E200 ILMO__	Dissolved Metals SW6010B 7470 E200 ILMO__	Reactive CN / S SW846 Chapter 7	Hexavalent Chromium SW7196A Alkaline Digest? Y / N	Inorganic Anions ** SW9056 E300.0	pH SW9040B 9045C	Oil & Grease SW9071A E413.2	TPH GRO DRO SW8015B (both)	TOX SW9020B	Gross Alpha / Beta SW9310 E900.0	Actinides by PAI SOP (circle): Pu / U / Am / Th / Cm	Total Uranium by KPA D5174-91 Isotopic	Tritium E906.0	Total Alpha-Emitting Radium SW9315 E903.0	Radium 226 SW9315 E903.0 Radium 228 SW9320 E904.0	Strontium 89 D5811-95 Strontium 90 D5811-95	Gamma Isotopes ** E901.1	Th - isotopic	Ac 227 / Pa 231 / Pb 210
700-01	5-7	1700	19	RK	3										X											X			X			X	X
700-02	5-7	1730	20	RK	1										(c)											X			X			X	
700-03	5-7	1720	21	RK	3										X											X			X			X	X
700-04	5-7	18:00	22	RK	1										(c)											X			X			X	
900-01	5-7	1300	23	RK	3										X											X			X			X	X
900-02		1210	24		1										(c)																		
900-03		1230	25		1										(c)																		
900-04		1900	26		1										(c)																		
900-05		1840	27		1										(c)																		

Comments:
(c) Hold analysis pending metal results from samples 700-01, 700-02, 900-01, OSA-01

Form 202r4.xls (1/3/01)

Relinquished By: (1)	Relinquished By: (2)
Signature Gerald Warrick	Signature
Printed Name Gerald Warrick	Printed Name
Date 5-10-04 Time 10:00	Date Time
Company Kent & Sullivan	Company

Received By: (1)	Received By: (2)
Signature Amy Wolf	Signature
Printed Name Amy Wolf	Printed Name
Date 5/11/04 Time 1645	Date Time
Company Paragon Analytics	Company

* Time Zone (circle one): EST CST MST PST ** Indicate specific analytes under comments. Distribution: white / yellow (Paragon); pink retained by originator.

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Paragon Analytics, Inc.
225 Commerce Drive Fort Collins, CO 80524
800-443-1511 or (970) 490-1511 (970) 490-1522 Fax

Chain-of-Custody

Accession Number (LAB ID) 0405097

Date _____ Page 9 of ____

Project Name / No.: _____ Sampler(s): _____ (circle one) Turnaround: Standard or Rush (Due _____) Dispose or Return to Client

Report To:
Phone:
Fax:
Company:
Address:

per pgt

circle method or specify under comments

Sample ID	Date 2004	Time *	Lab ID	Matrix	No. of Containers	VOCs SW8260B E624 E524.2 OLMO__	BTEX (only) SW8021B	SVOCs SW8270C E625 E525 OLMO__	OC Pesticides SW8081A E608 E508 OLMO__	PCBs SW8082 E608 E508 OLMO__	OP Pesticides SW8141A E614	Herbicides SW8151A E615	TCLP Organics SW1311 8260B 8270C 8081A 8151A	TCLP Metals SW 1311 6010B 7471	Total Metals SW6010B 7470 7471 E200 ILMO__	Dissolved Metals SW6010B 7470 E200 ILMO__	Reactive CN / S SW846 Chapter 7	Hexavalent Chromium SW7196A Alkaline Digest? Y / N	Inorganic Anions ** SW9056 E300.0	pH SW9040B 9045C	Oil & Grease SW9071A E413.2	TPH GRO DRO SW8015B (both)	TOX SW9020B	Gross Alpha / Beta SW9310 E900.0	Actinides by PAI SOP (circle): Pu / U / Am / Th / Cm	~~Total~~ Uranium ~~by KPA D5174-91~~ Isotopic	Tritium E906.0	Total Alpha-Emitting Radium SW9315 E903.0	Radium 226 SW9315 E903.0 Radium 228 SW9320 E904.0	Strontium 89 D5811-95 Strontium 90 D5811-95	Gamma Isotopes ** E901.1	Th. isotopic	Ac-227 / Pa 231 / Pb 210
OSA-01	5-6	1400	28	RK	3										X											X			X			X	X
OSA-02	5-6	1900	29	↓	3										(c)											X			X			X	
OSA-03	5-6	1700	30	↓	3										(c)											X			X			X	

Comments:
(c) Hold analysis pending metal results from samples OSA-01, 700-01, 700-03, and 900-01.

Relinquished By: (1)
Signature Gerald Warrick
Printed Name Gerald Warrick
Date 5-10-04 Time 10:00
Company Kent & Sullivan

Relinquished By: (2)
Signature _____
Printed Name _____
Date _____ Time _____
Company _____

Received By: (1)
Signature [signature]
Printed Name Amy Wolf
Date 5/11/04 Time 1645
Company Paragon Analytics

Received By: (2)
Signature _____
Printed Name _____
Date _____ Time _____
Company _____

Form 202r4.xls (1/3/01)

* Time Zone (circle one): EST CST MST PST ** Indicate specific analytes under comments. Distribution: white / yellow (Paragon); pink retained by originator.

000367

Paragon Analytics, Inc. -- Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: Kent + Sullivan WORKORDER NO: 0405097

PROJECT MANAGER: Debbie Fazio INITIALS: DW DATE: 5/12/04

1. Does this project require any special handling in addition to standard Paragon procedures?		Yes	No
IS PRE-SCREENING REQUIRED? (radiochemistry, DOE, etc.)		Yes	No
2. Are custody seals on shipping containers intact? How many custody seals are provided? 2 each	N/A	Yes	No
3. Are the custody seals on sample containers intact?	N/A	Yes	No
4. Is there a Chain-of-Custody (COC) or other representative documents, letters, or shipping memos?		Yes	No
5. Is the COC complete? Relinquished: Yes ✓ No___ Analyses Requested: Yes ✓ No___	N/A	Yes	No
6. Is the COC in agreement with the samples received? No. of Samples: Yes ✓ No___ Sample ID's: Yes ✓ No___ Matrix: Yes ✓ No___ No. of Containers: Yes ✓ No___	N/A	Yes	No
7. Were COC (if applicable) and sample labels legible?		Yes	No
8. Were airbills present and/or removable?	N/A	Yes	No
9. Are all aqueous samples requiring chemical preservation preserved correctly (excluding volatile organics)?	N/A	Yes	No
Are all aqueous **non-preserved** samples at the correct pH?		Yes	No
10. Is there enough sample for requested analyses? If so, were samples placed in the proper containers?		Yes	No
11. Are all samples within holding times for the requested analyses?		Yes	No
12. Were all sample containers received intact? (not broken or leaking, etc.)		Yes	No
13. Are samples requiring no headspace (volatiles, reactive cyanide/sulfide, radon), headspace free? **Size of bubble: ___ < green pea; ___ > green pea** (List sample IDs and affected containers on Page 2)	N/A	Yes	No
14. Were samples checked for and free from the presence of residual chlorine?	N/A	Yes	No
15. Were the sample(s) shipped on ice?	N/A	Yes	No
16. Were cooler temperatures measured at 0.1 - 6 °C ? **IR Gun Used*: 1 2**	N/A	Yes	No
17. Were all samples cooled that should have been cooled?	N/A	Yes	No

Cooler #'s	924	898	897	749	868	22	
Temperature	10°	10°	9°	15°	12°	14°	°C

Project Manager Signature / Date: Debbie Fazio 5/12/04

A NO RESPONSE TO ANY QUESTION EXCEPT # 1 REQUIRES THE COMPLETION OF PAGE 2 OF THIS FORM

* IR Gun #1 (original): Raytek, SN SC-PM3/T29403
IR Gun #2 (newer): Oakton, SN 2SCIR1201

Paragon Analytics, Inc. -- Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: Kent & Sullivan WORKORDER NO: 0405097

PROJECT MANAGER: Debbie Fazzo INITIALS: DW DATE: 5/12/04

- [ ] **Custody seals** broken (on outside of shipping container or on sample containers).
- [ ] No Chain-of-Custody (**COC**) present.
- [ ] **Number of samples** on the COC do not match the number of samples received.
- [ ] Aqueous samples **not preserved correctly** (see pH discussion below).
- [ ] SVOC samples contained **residual chlorine** (list sample IDs and affected containers below).
- [x] Samples received at **inappropriate temperature**.
- [ ] **Insufficient sample** to perform requested analyses.
- [ ] Extraction or analytical **holding times** expired in transit.
- [ ] **Broken/leaking bottles** and intact bottles received in same cooler (list affected sample IDs below).
- [ ] **No analyses requested.**
- [ ] **Incorrect sample type** received.
- [ ] VOAs, reactive CN/S, radon not **headspace** free (list sample IDs and affected vials below).
- [ ] **Airbills** not present and/or removable (record applicable shipper's tracking number below).
- [ ] Other (describe below).

Describe discrepancy:

All samples received between 9° - 15° C. Refer to page 1 for cooler temperatures and refer to DOT Survey pages for cooler contents. Insufficient ice packed with samples.

Was the client contacted? ___ No; ✓ Yes: Name Sue Kent Date/Time 5/12/04

Was the pH of any sample adjusted by the laboratory? ___ No; ___ Yes (see Table below):

NOTE: No pH adjustments shall be made without prior consent of Project Manager. After pH adjustment, hold metals and radchem samples ≥ 16 hr before analysis.

Sample ID	*Initial pH*	*Final pH (wait 30 min)*	*Type of Reagent Used*	*Lot No. of Reagent Used*	*Initials / Date / Time*

Was the laboratory directed to proceed with the analysis of any samples yielding the presence of residual chlorine? ___ No; ___ Yes (see notes above).

Project Manager Signature / Date: DF 5/12/04

000363

0405096
0405097

1-800-2ALASKA

Airbill Number: 027 KTN 5436-6152 Box No. 0001

Destination: DEN

Pieces	Total Weight	Date
17	865	10-MAY-04

14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS

190

#924

2 seals

10°C

ARTIC 0-0410-3-1635

1-800-2ALASKA

Airbill Number: 027 KTN 5436-6152 Box No. 0015

Destination: DEN

Pieces	Total Weight	Date
17	865	10-MAY-04

14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS

140

#898

2 seals

ARTIC 0-0410-3-1635

1-800-2ALASKA

Airbill Number: 027 KTN 5436-6152 Box No. 0011

Destination: DEN

Pieces	Total Weight	Date
17	865	10-MAY-04

14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS

320

9°C

#89

2 seals

ARTIC 0-0410-3-1635

1-800-2ALASKA

Airbill Number: 027 KTN 5436-6152 Box No. 0002

Destination: DEN

Pieces	Total Weight	Date
17	865	10-MAY-04

14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS

300

15°C

2 seals

ARTIC 0-0410-3-1635

000373

0405096
0405097

1-800-2ALASKA

027 KTN 5436-6152 Box No. 0006

Pieces 17 | Total Weight 865 | Date 10-MAY-04

Destination DEN

14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS

320 12°C

868 2 seals

ARTIC 0-0410-3-1635

1-800-2ALASKA

027 KTN 5436-6152 Box No. 0010

Pieces 17 | Total Weight 865 | Date 10-MAY-04

Destination DEN

14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS

260 14°C

22 2 seals

ARTIC 0-0410-3-1635

SAMPLE LOGIN / DOT SURVEY

Client: Kent & Sullivan Workorder No: 0405096 & 0405097

Project Manager: Debbie Fazio Initials: AW Date: 05/12/04

COOLER #: 924 External Micro R Meter Reading (μ R/hr): 190

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405096-1-1	MSED-01	< background
0405096-1-2	MSED-01	< background
0405096-2-1	MSED-02	< background
0405096-2-2	MSED-02	< background
0405096-2-3	MSED-02	< background
0405096-3-1	MSED-03	< background
0405096-3-2	MSED-03	< background
0405096-3-3	MSED-03	< background
0405096-7-1	MSED-07	< background
0405096-7-2	MSED-07	< background
0405096-7-3	MSED-07	35
0405096-8-1	MSED-08	75
0405096-8-2	MSED-08	< background
0405096-8-3	MSED-08	30
0405096-9-1	MSED-09	< background
0405096-9-2	MSED-09	< background
0405096-9-3	MSED-09	150
0405096-10-1	MSED-10	> background
0405096-10-2	MSED-10	30
0405096-10-3	MSED-10	40
0405096-16-1	SSED-06	< background
0405096-16-2	SSED-06	< background
0405096-16-3	SSED-06	< background
0405097-2-1	MR-01	70
0405097-2-2	MR-01	60
0405097-2-3	MR-01	80
0405097-3-1	MR-02	85
0405097-3-2	MR-02	85
0405097-3-3	MR-02	85
0405097-17-1	300-01	800

If applicable, was the client contacted? **YES / NO / NA** Client Rep. Name:_____ Date/Time:_____

Project Manager Signature/ Date: _____

SAMPLE LOGIN / DOT SURVEY

Client: Kent & Sullivan Workorder No: 0405096 & 0405097

Project Manager: Debbie Fazio Initials: AW Date: 05/12/04

COOLER #: 898 External Micro R Meter Reading (μ R/hr): 140

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405096-4-1	MSED-04	< background
0405096-4-2	MSED-04	< background
0405096-4-3	MSED-04	< background
0405096-11-1	SSED-01	< background
0405096-11-2	SSED-01	< background
0405096-11-3	SSED-01	< background
0405096-26-1	SOIL-02	< background
0405096-26-2	SOIL-02	< background
0405096-26-3	SOIL-02	< background
0405096-27-1	SOIL-04	< background
0405096-27-2	SOIL-04	40
0405096-27-3	SOIL-04	< background
0405096-28-1	SOIL-05	30
0405096-28-2	SOIL-05	< background
0405096-28-3	SOIL-05	< background
0405097-4-1	GR-01	< background
0405097-6-1	GR-03	< background
0405097-13-1	GR-10	< background
0405097-14-1	QM-01	< background
0405097-16-1	QM-03	< background
0405097-18-1	300-02	45
0405097-19-1	700-01	1000
0405097-19-2	700-01	950
0405097-19-3	700-01	1100

If applicable, was the client contacted? **YES / NO / NA** Client Rep. Name:_____ Date/Time:_____

Project Manager Signature/ Date: _____

SAMPLE LOGIN / DOT SURVEY

Client: Kent & Sullivan Workorder No: 0405096 & 0405097

Project Manager: Debbie Fazio Initials: AW Date: 05/12/04

COOLER #: 897 External Micro R Meter Reading (μ R/hr): 320

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405096-5-1	MSED-05	< background
0405096-5-2	MSED-05	< background
0405096-5-3	MSED-05	< background
0405096-21-1	GEN-01	28
0405096-21-2	GEN-01	28
0405096-22-1	GEN-02	30
0405096-22-2	GEN-02	29
0405096-22-3	GEN-02	< background
0405096-22-4	GEN-02	< background
0405096-22-5	GEN-02	< background
0405096-23-1	GEN-03	< background
0405096-23-2	GEN-03	< background
0405096-24-1	GEN-04	< background
0405096-24-2	GEN-04	< background
0405097-9-1	GR-06	30
0405097-11-1	GR-08	< background
0405097-15-1	QM-02	< background
0405097-20-1	700-02	250
0405097-24-1	900-02	1500
0405097-25-1	900-03	300
0405097-27-1	900-05	100

If applicable, was the client contacted? **YES / NO / NA** Client Rep. Name:_____ Date/Time:_____

Project Manager Signature/ Date: _____

SAMPLE LOGIN / DOT SURVEY

Client: Kent & Sullivan Workorder No: 0405096 & 0405097

Project Manager: Debbie Fazio Initials: AW Date: 05/12/04

COOLER #: 749 External Micro R Meter Reading (μ R/hr): 300

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405096-6-1	MSED-06	40
0405096-12-1	SSED-02	40
0405096-12-2	SSED-02	< background
0405096-12-3	SSED-02	< background
0405096-18-1	SSED-08	< background
0405096-18-2	SSED-08	< background
0405096-18-3	SSED-08	30
0405096-19-1	SSED-09	< background
0405096-19-2	SSED-09	< background
0405096-19-3	SSED-09	< background
0405096-25-1	SOIL-01	< background
0405096-25-2	SOIL-01	< background
0405096-25-3	SOIL-01	< background
0405097-1-1	HR-01	140
0405097-5-1	GR-02	< background
0405097-7-1	GR-04	90
0405097-28-1	OSA-01	1200
0405097-28-2	OSA-01	1100
0405097-28-3	OSA-01	1200

If applicable, was the client contacted? **YES / NO / NA** Client Rep. Name:_____ Date/Time:_____

Project Manager Signature/ Date: _____

SAMPLE LOGIN / DOT SURVEY

Client: Kent & Sullivan Workorder No: 0405096 & 0405097

Project Manager: Debbie Fazio Initials: AW Date: 05/12/04

COOLER #: 868 External Micro R Meter Reading (μ R/hr): 320

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405096-13-1	SSED-03	< background
0405096-13-2	SSED-03	< background
0405096-13-3	SSED-03	< background
0405096-14-1	SSED-04	< background
0405096-14-2	SSED-04	< background
0405096-14-3	SSED-04	< background
0405096-15-1	SSED-05	< background
0405096-15-2	SSED-05	< background
0405096-15-3	SSED-05	< background
0405096-17-1	SSED-07	< background
0405096-17-2	SSED-07	< background
0405096-17-3	SSED-07	< background
0405096-20-1	SSED-10	< background
0405096-20-2	SSED-10	< background
0405096-20-3	SSED-10	< background
0405097-8-1	GR-05	< background
0405097-10-1	GR-07	< background
0405097-12-1	GR-09	< background
0405097-21-1	700-03	800
0405097-21-2	700-03	950
0405097-21-3	700-03	850
0405097-26-1	900-04	95
0405097-29-1	OSA-02	180
0405097-29-2	OSA-02	150
0405097-29-3	OSA-02	160
0405097-30-1	OSA-03	200
0405097-30-2	OSA-03	250
0405097-30-3	OSA-03	150

If applicable, was the client contacted? **YES / NO / NA** Client Rep. Name:_____ Date/Time:_____

Project Manager Signature/ Date: _____

SAMPLE LOGIN / DOT SURVEY

Client: Kent & Sullivan Workorder No: 0405096 & 0405097

Project Manager: Debbie Fazio Initials: AW Date: 05/12/04

COOLER #: 22 External Micro R Meter Reading (μ R/hr): 260

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405096-29-1	SOIL-07	< background
0405096-29-2	SOIL-07	< background
0405096-29-3	SOIL-07	< background
0405096-30-1	SOIL-08	45
0405096-30-2	SOIL-08	40
0405096-30-3	SOIL-08	40
0405096-31-1	SOIL-09	< background
0405096-31-2	SOIL-09	< background
0405096-31-3	SOIL-09	< background
0405096-32-1	SOIL-10	55
0405096-32-2	SOIL-10	50
0405096-32-3	SOIL-10	65
0405097-22-1	700-04	450
0405097-23-1	900-01	110
0405097-23-2	900-01	110
0405097-23-3	900-01	140

If applicable, was the client contacted? **YES / NO / NA** Client Rep. Name:_____ Date/Time:_____

Project Manager Signature/ Date: _____

PARAGON ANALYTICS
Radiochemistry Data Package

Section 9

ADDITIONAL SUPPORTING DOCUMENTATION

9

Gamma Spectroscopy

Initial Calibration Standards Traceability

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

PAI ID 0718
recd 8-205-03

66352-307

1.0 Liter Solid in 138G GA-MA Beaker

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration date: July 1, 2003 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	1304	3.0
Cd-109	88	462.6	d	1862	3.3
Co-57	122	271.79	d	1032	2.8
Ce-139	166	137.6	d	1419	2.8
Hg-203	279	46.61	d	3194	2.7
Sn-113	392	115.1	d	1960	2.6
Cs-137	662	30.07	y	1260	3.0
Y-88	898	106.6	d	5060	2.6
Co-60	1173	5.2714	y	2402	2.7
Co-60	1332	5.2714	y	2427	2.6
Y-88	1836	106.6	d	5287	2.6

P O NUMBER EW060303, Item 2

SOURCE PREPARED BY: M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED: [signature] 8-1-03

This standard will expire one year after the calibration date.

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318-U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS
BATCH 113

CALIBRATION DATE: JULY 1, 2003 12:00 EST

ISOTOPE	ENERGY (keV)	CALIBRATION METHOD[1]	STATISTICS[2]	CALIBRATION[2]	PEAK FITTING[2]	GEOMETRY[2]	IMPURITIES[2]	WEIGHING[2]	COMBINED STANDARD UNCERTAINTY[2]	RELATIVE EXPANDED UNCERTAINTY[2] (K=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	0.93	0.71	0.7	0	0.2	1.40	2.8
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	0.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	0.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

OPTIONAL ADDITIONAL ISOTOPES

Pb-210	46.5	4ΠLS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4ΠLS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

[1]Calibration Methods:
- 4ΠLS (4 pi Liquid Scintillation Counting)
- HPGe (High Purity Germanium Gamma Ray Spectrometer)
- IC (Gamma Ray Ionization Chamber)

[2]As Percent (%)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

Analytics, Incorporated
Atlanta, Georgia

is a participant for the period January 1, 2003, through December 31, 2003, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory

(over)

000332

041339D01.SPC Analyzed by MC

****

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

****

Geo 1 / Water

MC 6/17/04

Sample ID: 041300~~2~~3-1 Geo 1 Eff Cal (718)

Sampling Start:	07/01/2003 12:00:00	Counting Start:	06/17/2004 12:49:51
Sampling Stop:	07/01/2003 12:00:00	Decay Time.	8.45E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.00E+000 L	Real Time	3898 Sec
Collection Efficiency	1.0000	Spc. File	.041339D01.SPC

Detector #: 1 (Detector 1)

Energy(keV)= -1.13 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/17/2004
FWHM(keV) = 0.88 + 0.103*En +-3.12E-03*En^2 + 4.90E-05*En^3 06/16/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

==========

PEAK SEARCH RESULTS

==========

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	57.14	116.42	8405	966	780	69161	3.01 a	HiResid Wide Pk
2	59.48	121.07	92907	847	484	38423	1.57 b	HiResid
3	67.29	136.69	3090	895	730	70409	2.93 a	Wide Pk
4	85.00	172.05	8755	956	771	78389	3.03 a	Wide Pk
5	87.97	178.00	212975	1096	487	41685	1.74 b	
6	122.06	246.10	107738	820	404	28687	1.76 a	
7	136.47	274.88	13973	500	362	23096	1.74 a	
8	165.83	333.53	63896	660	349	21415	1.74 a	
9	254.96	511.59	1493	312	249	13718	1.36 a	
10	279.24	560.08	4007	425	333	19724	2.05 a	
11	391.75	784.83	46256	545	276	14062	2.01 a	
12	511.46	1023.97	1152	369	298	14097	2.66 a	
13	661.75	1324.19	182679	907	250	10655	2.27 a	HiResid
14	821.32	1642.97	280	251	205	7761	2.04 a	
15	821.99	1644.30	276	267	218	8408	2.16 b	
16	898.14	1796.42	55713	572	266	11651	2.44 a	HiResid
17	1173.35	2346.20	200143	933	217	7185	2.79 a	HiResid
18	1330.21	2659.55	7909	394	290	7439	6.29 a	DELETED HiResid Wide Pk
19	1332.58	2664.28	180534	869	148	3328	2.86 b	HiResid
20	1836.02	3669.98	38408	411	102	1402	3.46 a	HiResid

041339D01.SPC Analyzed by

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SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

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Sample ID: 0413002-1 Geo 1 Eff Cal (718)
Stds. Match Tolerance: 2.00 keV

Detector Number: 01 Calibration Date. . . 06/17/2004 12:49:51
Geometry File (D01)(Sh01).EFF ID. Geo 1 Eff Cal
Amount of Std. in Calib. Source: 1.000000 gm

Eff = 1 / [7.08e-03*En^-3.08e+00 + 3.40e+01*En^ 6.39e-01]
(Where En = Energy in MeV)) (Exponential)

Pk. #	Energy (kev)	Measured Efficiency	% Difference	Calculated Efficiency	% Difference	Prev.Calc. Efficiency
1	59.50	1.98e-02	5.00	2.09e-02	-10.62	1.89e-02
2	88.04	5.38e-02	-6.93	5.04e-02	3.21	5.20e-02
3	122.06	7.12e-02	3.88	7.40e-02	2.61	7.60e-02
4	165.85	*7.86e-02	0.90	7.94e-02	-7.54	7.38e-02
5	391.68	5.46e-02	-2.88	5.31e-02	4.82	5.58e-02
6	661.64	4.12e-02	-7.75	3.82e-02	3.28	3.95e-02
7	898.02	3.02e-02	4.15	3.15e-02	-0.11	3.14e-02
8	1173.21	2.63e-02	0.97	2.65e-02	-2.54	2.59e-02
9	1332.48	2.35e-02	4.11	2.45e-02	-3.04	2.37e-02
10	1836.01	1.99e-02	0.12	1.99e-02	-0.96	1.97e-02

Calibration Results Saved.

*MANUALLY ADJUSTED EFFICIENCY FROM ORIGINAL VALUE OF 7.26×10^{-2}, % DIFF. FROM CALCULATED VALUE ⇒ 8.6%.

^ 279 keV PHOTO-PEAK DELETED DUE TO MORE THAN 5 HALF-LIVES EXPIRED.

CHANGES O.K. PER P.A. SOP 713.

MC 6/17/04

Calibration Verification: Geometry 1

Std. # 588
Det. #: 1

FROM CALIBRATION CERTIFICATE				FROM ANALYTICS.LIB		EXPECTED ACTIVITY			MEASURED ACTIVITY		
Isotope	KeV	Half Life(y)	Gammas/Sec.	Gamma Fraction:	Mass of Standard		DPS	pCi/L	pCi/L	% Recovery	OK ?
Am-241	59.9	432.0000	1309	0.3590	1 L	Am-241	3646.2	98547.0	105000	106.5%	Pass
Cd-109	88	1.2666	1894	0.0361		Cd-109	52465.4	1417983.1	1580000	111.4%	Pass
Co-57	122	0.7441	1000	0.8551		Co-57	1169.5	31606.9	32700	103.5%	Pass
Ce-139	166	0.3768	1429	0.8035		Ce-139	1778.5	48066.7	49000	>5 Halflives	>5 Halflives
Hg-203	279	0.1276	3104	0.7730		Hg-203	4015.5	108527.7	>5 Halflives	>5 Halflives	>5 Halflives
Sn-113	392	0.3151	2107	0.6490		Sn-113	3246.5	87744.1	>5 Halflives	>5 Halflives	>5 Halflives
Cs-137	662	30.0000	1328	0.8512		Cs-137	1560.2	42166.2	43900	104.1%	Pass
Y-88	898	0.2919	4876	0.9340		Y-88	5220.6	141096.1	>5 Halflives	>5 Halflives	>5 Halflives
Co-60	1173	5.2714	2369	1.0000		Co-60	2369.0	64027.0	66000	103.1%	Pass
Co-60	1332	5.2714	2397	1.0000		Co-60	2397.0	64783.8	65500	101.1%	Pass
Y-88	1836	0.2919	5099	0.9938		Y-88	5130.8	138670.6	>5 Halflives	>5 Halflives	>5 Halflives

041340D01.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0413003-1A Geo 1 Eff Cal (588)
VERIF.

Sampling Start:	07/01/2001 12:00:00	Counting Start:	06/17/2004 14:39:33
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.60E+004 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.00E+000 L	Real Time	1878 Sec
Collection Efficiency	1.0000	Spc. File	.041340D01.SPC

Detector #: 1 (Detector 1)

Energy(keV)= -1.13 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/17/2004
FWHM(keV) = 0.88 + 0.103*En +-3.12E-03*En^2 + 4.90E-05*En^3 06/16/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	51.47	105.08	6907	670	534	24050	4.39 a	HiResid Wide Pk
2	56.39	114.91	9223	575	446	19597	3.67 b	HiResid
3	59.47	121.06	52390	538	233	8908	1.61 c	HiResid
4	84.86	171.78	572	287	233	9990	1.64 a	
5	87.96	177.98	37918	476	225	8914	1.78 b	
6	122.07	246.12	8664	304	198	6909	1.73 a	
7	136.36	274.65	1111	260	206	7158	2.01 a	
8	165.93	333.72	897	234	186	6102	1.77 a	
9	510.01	1021.07	127	155	126	3218	1.56 a	
10	661.73	1324.17	89030	620	139	3287	2.26 a	HiResid
11	897.93	1796.01	249	164	132	3225	1.93 a	
12	1173.33	2346.15	79013	582	125	2393	2.73 a	HiResid
13	1332.53	2664.19	72238	552	103	1618	2.86 a	HiResid
14	1460.20	2919.22	64	73	59	475	3.29 a	
15	1836.49	3670.92	115	50	37	236	2.28 a	

041340D01.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET010616.BKG (0418003-11 Weekly Bkg)

Bkg.File Detector #: 1

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
9	510.01	128	155	126	0	156	128	NET<CL
11	897.93	249	164	132	245	164	132	
14	1460.20	64	73	59	13	73	60	NET<CL

041340D01.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0413003-1A Geo 1 Eff Cal (588)
VERIF.

Sampling Start:	07/01/2001 12:00:00	Counting Start:	06/17/2004 14:39:33
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.60e+004 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.00e+000 L	Real Time	1878 Sec
Collection Efficiency	1.0000	Spectrum File	.041340D01.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 1 (Detector 1)

Efficiency File: (D01)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[7.08E-03*En^-3.08E+00 + 3.40E+01*En^6.39E-01] 06/17/2004

Library File: . . . .ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/L)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54		1.05E+05 +- 1.08E+03	9.42E+02	4.68E+02	3.79E+06
Cd-109	88.02		1.58E+06 +- 1.98E+04	1.88E+04	9.36E+03	1.11E+04
Co-57	122.07		3.27E+04 +- 1.15E+03	1.51E+03	7.48E+02	6.50E+03
Ce-139	165.85		4.90E+04 +- 1.28E+04	2.05E+04	1.02E+04	3.30E+03
Cs-137	661.62		4.39E+04 +- 3.06E+02	1.38E+02	6.85E+01	2.64E+05
Co-60	Average:x		6.58E+04 +- 3.49E+02	. . . .	. . . .	4.62E+04
	1173.21		6.60E+04 +- 4.87E+02	2.11E+02	1.05E+02	4.62E+04
	1332.48		6.55E+04 +- 5.00E+02	1.89E+02	9.32E+01	4.62E+04
Hg-203	279.18		MDA	1.02E+09	5.06E+08	1.12E+03
Sn-113	391.68		MDA	1.05E+05	5.20E+04	2.76E+03
Y-88	898.02		MDA	1.18E+05r	5.82E+04	2.56E+03

MEASURED TOTAL: 1.87E+06 +- 3.55E+04 pCi/L

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	51.47	105.08	6907	670	534	24050	4.39	Unknown
2	56.39	114.91	9223	575	446	19597	3.67	Unknown
4	84.86	171.78	572	287	233	9990	1.64	Unknown
7	136.36	274.65	1111	260	206	7158	2.01	Unknown
9	510.01	1021.07	0	156	128	3218	1.56	Deleted

041340D01.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
11	897.93	1796.01	245	164	132	3225	1.93	Unknown
14	1460.20	2919.22	13	73	60	475	3.29	Deleted
15	1836.49	3670.92	115	50	37	236	2.28	Unknown

040572D03.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0413003-3 GEO 1 EFF CAL (718)

Sampling Start:	07/01/2003 12:00:00	Counting Start:	04/17/2004 14:11:12
Sampling Stop:	07/01/2003 12:00:00	Decay Time.	6.99E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	5400 Sec
Sample Size	1.00E+000 L	Real Time	5741 Sec
Collection Efficiency	1.0000	Spc. File	.040572D03.SPC

Detector #: 3 (Detector 3)

Energy(keV)= -0.84 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 04/17/2004
FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	49.70	100.97	709	481	393	26362	1.11	a
2	51.21	103.98	783	481	393	26362	1.18	b
3	59.54	120.62	59742	617	310	19399	0.88	a
4	66.16	133.84	994	566	463	31650	1.51	a Wide Pk
5	67.83	137.19	3009	818	666	49233	2.27	b
6	70.02	141.56	1367	617	504	35167	1.58	c
7	88.03	177.54	155423	892	343	21760	0.91	a
8	122.14	245.68	83815	670	277	14193	0.94	a HiResid
9	136.58	274.53	10835	366	248	11325	0.95	a
10	165.97	333.24	56426	554	234	10157	1.03	a
11	255.33	511.77	1370	245	192	7787	1.04	a
12	279.35	559.76	4984	280	199	7813	1.08	a
13	310.00	620.99	-66	294	242	9655	1.56	a NET< CL
14	310.03	621.05	198	227	185	6759	1.11	b
15	391.87	784.56	32352	424	184	6246	1.28	a HiResid
16	510.97	1022.48	1054	342	276	9380	2.60	a Wide Pk
17	661.81	1323.85	75400	582	159	4903	1.55	a HiResid
18	751.28	1502.58	136	172	140	3833	1.45	a NET< CL
19	813.92	1627.73	476	183	146	4313	1.68	a
20	898.19	1796.09	34393	425	170	5580	1.83	a HiResid
21	1047.83	2095.04	105	159	129	3538	1.43	a NET< CL
22	1173.35	2345.80	79525	586	129	2971	2.11	a HiResid
23	1332.53	2663.82	71573	550	105	1878	2.26	a HiResid
24	1835.90	3669.46	20021	289	50	380	2.78	a HiResid

000390

040572D03.SPC Analyzed by

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SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

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Sample ID: 0413003-3 GEO 1 EFF CAL (718)
Stds. Match Tolerance: 2.00 keV

Detector Number: 03 Calibration Date. . . 04/17/2004 14:11:12
Geometry File (D03)(Sh01).EFF ID. Geo 1 Eff Cal
Amount of Std. in Calib. Source: 1.000000 gm

Eff = 1 / [5.26e-03*En^-3.50e+00 + 1.28e+02*En^ 8.28e-01]
(Where En = Energy in MeV)) (Exponential)

Pk. #	Energy (kev)	Measured Efficiency	% Difference	Calculated Efficiency	% Difference	Prev.Calc. Efficiency
1	59.50	8.50e-03	2.28	8.69e-03	-10.73	7.85e-03
2	88.04	2.39e-02	-3.13	2.32e-02	-7.83	2.15e-02
3	122.06	3.16e-02	3.01	3.26e-02	-7.66	3.03e-02
4	165.85	3.19e-02	-1.14	3.15e-02	-8.04	2.92e-02
5	279.00	2.20e-02	1.51	2.23e-02	-7.76	2.07e-02
6	391.68	1.76e-02	-4.05	1.70e-02	-7.23	1.58e-02
7	661.64	1.13e-02	-2.50	1.10e-02	-6.30	1.04e-02
8	898.02	8.35e-03	2.33	8.55e-03	-5.75	8.09e-03
9	1173.21	6.81e-03	0.66	6.85e-03	-5.26	6.51e-03
10	1332.48	6.06e-03	1.67	6.17e-03	-5.03	5.87e-03
11	1836.01	4.66e-03	1.57	4.73e-03	-4.46	4.53e-03

Calibration Results Saved.

Calibration Verification: Geometry 1

Std. # 588
Det. #: 3

FROM CALIBRATION CERTIFICATE				FROM ANALYTICS.LIB		EXPECTED ACTIVITY			MEASURED ACTIVITY		
Isotope	KeV	Half Life(y)	Gammas/Sec.	Gamma Fraction:	Mass of Standard		DPS	pCi/L	pCi/L	% Recovery	OK ?
Am-241	59.9	432.0000	1309	0.3590	1 L	Am-241	3646.2	98547.0	104000	105.5%	Pass
Cd-109	88	1.2666	1894	0.0361		Cd-109	52465.4	1417983.1	1510000	106.5%	Pass
Co-57	122	0.7441	1000	0.8551		Co-57	1169.5	31606.9	32200	101.9%	Pass
Ce-139	166	0.3768	1429	0.8035		Ce-139	1778.5	48066.7	44100	>5 Halflives	>5 Halflives
Hg-203	279	0.1276	3104	0.7730		Hg-203	4015.5	108527.7	>5 Halflives	>5 Halflives	>5 Halflives
Sn-113	392	0.3151	2107	0.6490		Sn-113	3246.5	87744.1	>5 Halflives	>5 Halflives	>5 Halflives
Cs-137	662	30.0000	1328	0.8512		Cs-137	1560.2	42166.2	41400	98.2%	Pass
Y-88	898	0.2919	4876	0.9340		Y-88	5220.6	141096.1	>5 Halflives	>5 Halflives	>5 Halflives
Co-60	1173	5.2714	2369	1.0000		Co-60	2369.0	64027.0	65400	102.1%	Pass
Co-60	1332	5.2714	2397	1.0000		Co-60	2397.0	64783.8	65900	101.7%	Pass
Y-88	1836	0.2919	5099	0.9938		Y-88	5130.8	138670.6	>5 Halflives	>5 Halflives	>5 Halflives

040576D03.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0413003-3A GEO 1 CAL VER (588)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	04/18/2004 23:35:34
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.45E+004 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.00E+000 L	Real Time	1830 Sec
Collection Efficiency	1.0000	Spc. File	.040576D03.SPC

Detector #: 3 (Detector 3)

Energy(keV)= -0.83 + 0.500*Ch + 1.32E-07*Ch^2 +-1.34E-11*Ch^3 04/18/2004
FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	59.57	120.72	21595	340	140	3963	0.86 a	HiResid
2	74.20	149.98	105	140	114	2613	0.90 a	NET< CL
3	88.05	177.65	18281	300	108	2333	0.90 a	
4	122.15	245.82	4379	183	103	1976	0.94 a	
5	136.58	274.65	540	131	101	1871	0.92 a	
6	165.98	333.41	432	124	96	1692	1.02 a	
7	310.69	622.63	84	105	85	1435	1.07 a	NET< CL
8	661.80	1324.19	24285	323	68	908	1.54 a	HiResid
9	1173.49	2346.35	20660	299	68	818	2.10 a	HiResid
10	1332.70	2664.36	18718	277	33	183	2.22 a	HiResid
11	1836.13	3669.85	60	22	12	28	2.00 a	

040576D03.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET030416.BKG (0416001-23 Weekly Bkg)

Bkg.File Detector #: 3

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
2	74.20	105	140	114	103	140	114	NET<CL

040576D03.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0413003-3A GEO 1 CAL VER (588)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	04/18/2004 23:35:34
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.45e+004 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.00e+000 L	Real Time	1830 Sec
Collection Efficiency	1.0000	Spectrum File	.040576D03.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 3 (Detector 3)

Efficiency File: (D03)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[5.26E-03*En^-3.50E+00 + 1.28E+02*En^8.28E-01] 04/17/2004

Library File: . . . .ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/L)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54		1.04E+05 +- 1.64E+03	1.37E+03	6.76E+02	3.79E+06
Cd-109	88.02		1.51E+06 +- 2.48E+04	1.80E+04	8.89E+03	1.11E+04
Co-57	122.07		3.22E+04 +- 1.34E+03	1.54E+03	7.61E+02	6.50E+03
Ce-139	165.85		4.41E+04 +- 1.26E+04	1.98E+04	9.75E+03	3.30E+03
Cs-137	661.62		4.14E+04 +- 5.50E+02	2.38E+02	1.17E+02	2.64E+05
Co-60	Average:x		6.56E+04 +- 6.79E+02	. . . .	. . . .	4.62E+04
	1173.21		6.54E+04 +- 9.47E+02	4.39E+02	2.15E+02	4.62E+04
	1332.48		6.59E+04 +- 9.73E+02	2.40E+02	1.15E+02	4.62E+04
Hg-203	279.18		MDA	6.16E+08	3.04E+08	1.12E+03
Sn-113	391.68		MDA	1.14E+05	5.62E+04	2.76E+03
Y-88	898.02		MDA	2.58E+05	1.27E+05	2.56E+03

MEASURED TOTAL: 1.80E+06 +- 4.16E+04 pCi/L

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
2	74.20	149.98	103	140	114	2613	0.90	Deleted
5	136.58	274.65	540	131	101	1871	0.92	Unknown
7	310.69	622.63	84	105	85	1435	1.07	Deleted
11	1836.13	3669.85	60	22	12	28	2.00	Unknown

040130D07.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Inc.
GammaScan

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Geo 1 / Water

Sample ID: 0413003-7 GEO 1 EFF CAL (718)

Sampling Start:	07/01/2003 12:00:00	Counting Start:	01/23/2004 18:32:25
Sampling Stop:	07/01/2003 12:00:00	Decay Time.	4.95E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.00E+000 L	Real Time	3829 Sec
Collection Efficiency	1.0000	Spc. File	.040130D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.14 + 0.501*Ch + 1.00E-07*Ch^2 + 2.80E-11*Ch^3 01/23/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 95/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	59.39	122.86	151997	898	367	27089	0.85	a
2	65.09	134.26	1689	480	389	25782	1.19	a HiResid Wide Pk
3	67.14	138.35	8650	948	765	58931	2.55	b HiResid
4	70.44	144.93	7896	848	682	51564	2.36	c HiResid
5	72.61	149.27	3969	489	389	25782	1.16	d HiResid
6	73.84	151.72	1668	733	599	44198	1.89	e HiResid
7	87.91	179.82	170858	906	306	18832	0.88	a
8	121.89	247.66	75178	623	242	10858	0.92	a HiResid
9	136.28	276.39	8807	300	193	7499	0.87	a
10	165.69	335.12	51327	503	179	6442	0.89	a HiResid
11	198.91	401.47	622	241	194	6941	0.98	a
12	254.96	513.37	1393	218	168	5240	0.99	a
13	278.99	561.35	10310	279	157	4545	1.04	a
14	391.50	785.94	29624	389	148	3752	1.17	a
15	408.20	819.28	114	147	120	3041	1.03	a NET< CL
16	511.43	1025.32	616	297	241	6883	2.77	a Wide Pk
17	661.51	1324.82	40019	436	142	3490	1.41	a
18	813.84	1628.74	600	138	107	2330	1.33	a
19	897.82	1796.24	31096	389	135	3384	1.59	a
20	1173.06	2345.05	42917	431	97	1656	1.80	a HiResid
21	1325.11	2648.06	692	126	95	1323	2.88	a HiResid
22	1332.33	2662.46	39185	405	69	882	1.94	b HiResid
23	1836.15	3665.62	17711	270	35	214	2.31	a HiResid

000396

040130D07.SPC Analyzed by

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SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

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Sample ID: 0413003-7 GEO 1 EFF CAL (718)
Stds. Match Tolerance: 2.00 keV

Detector Number: 07 Calibration Date. . . 01/23/2004 18:32:25
Geometry File (D07)(Sh01).EFF ID. Geo 1 Eff CaL
Amount of Std. in Calib. Source: 1.000000 gm

Eff = 1 / [4.38e-01*En^-1.35e+00 + 1.62e+02*En^ 9.38e-01]
(Where En = Energy in MeV)) (Exponential)

Pk. #	Energy (kev)	Measured Efficiency	% Difference	Calculated Efficiency	% Difference	Prev.Calc. Efficiency
1	59.50	3.24e-02	-0.66	3.22e-02	-13.38	2.84e-02
2	88.04	3.47e-02	2.22	3.55e-02	-5.00	3.38e-02
3	122.06	3.42e-02	-2.80	3.33e-02	-1.89	3.27e-02
4	165.85	2.84e-02	0.52	2.85e-02	-0.95	2.83e-02
5	279.00	1.93e-02	0.66	1.94e-02	-0.73	1.93e-02
6	391.68	1.45e-02	-0.32	1.45e-02	-0.61	1.44e-02
7	661.64	8.94e-03	0.77	9.01e-03	-0.13	9.00e-03
8	898.02	6.53e-03	3.83	6.79e-03	0.27	6.81e-03
9	1173.21	5.35e-03	-1.06	5.29e-03	0.66	5.32e-03
10	1332.48	4.83e-03	-2.85	4.70e-03	0.85	4.74e-03
11	1836.01	3.56e-03	-2.29	3.48e-03	1.35	3.53e-03

Calibration Results Saved.

Calibration Verification: Geometry 1

Std. # 588
Det. #: 7

FROM CALIBRATION CERTIFICATE				FROM ANALYTICS.LIB			EXPECTED ACTIVITY			MEASURED ACTIVITY		
Isotope	KeV	Half Life(y)	Gammas/Sec.	Gamma Fraction:	Mass of Standard			DPS	pCi/L	pCi/L	% Recovery	OK ?
Am-241	59.9	432.0000	1309	0.3590	1	L	Am-241	3646.2	98547.0	105000	106.5%	Pass
Cd-109	88	1.2666	1894	0.0361			Cd-109	52465.4	1417983.1	1400000	98.7%	Pass
Co-57	122	0.7441	1000	0.8551			Co-57	1169.5	31606.9	33700	106.6%	Pass
Ce-139	166	0.3768	1429	0.8035			Ce-139	1778.5	48066.7	44800	93.2%	Pass
Hg-203	279	0.1276	3104	0.7730			Hg-203	4015.5	108527.7	>5 Halflives	>5 Halflives	>5 Halflives
Sn-113	392	0.3151	2107	0.6490			Sn-113	3246.5	87744.1	>5 Halflives	>5 Halflives	>5 Halflives
Cs-137	662	30.0000	1328	0.8512			Cs-137	1560.2	42166.2	39300	93.2%	Pass
Y-88	898	0.2919	4876	0.9340			Y-88	5220.6	141096.1	>5 Halflives	>5 Halflives	>5 Halflives
Co-60	1173	5.2714	2369	1.0000			Co-60	2369.0	64027.0	65400	102.1%	Pass
Co-60	1332	5.2714	2397	1.0000			Co-60	2397.0	64783.8	66100	102.0%	Pass
Y-88	1836	0.2919	5099	0.9938			Y-88	5130.8	138670.6	>5 Halflives	>5 Halflives	>5 Halflives

040179D07.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Inc.
GammaScan

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Geo 1 / Water

Sample ID: 0413003-S7 GEO 1 CAL VER. (588)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	01/31/2004 13:21:07
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.27E+004 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.00E+000 L	Real Time	1855 Sec
Collection Efficiency	1.0000	Spc. File	.040179D07.SPC

Detector #: 7 (Detector 7)

Energy(keV) = -2.19 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 01/31/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 95/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	59.42	122.90	80758	622	208	8721	0.85	a	
2	66.30	136.62	375	231	187	5561	1.34	a	
3	87.97	179.83	29170	371	119	2868	0.87	a	
4	121.98	247.68	5727	193	98	1784	0.94	a	
5	136.45	276.55	655	126	94	1650	0.93	a	
6	151.52	306.60	55	70	57	788	0.47	a	NET< CL
7	165.81	335.11	591	120	91	1518	0.90	a	
8	283.11	569.08	44	98	80	1180	0.99	a	NET< CL
9	302.01	606.78	47	105	86	1253	1.15	a	NET< CL
10	337.40	677.37	35	57	46	522	0.56	a	NET< CL
11	391.70	785.70	132	92	73	989	1.04	a	
12	511.03	1023.72	64	79	64	802	1.13	a	
13	615.91	1232.93	40	63	51	550	1.03	a	NET< CL
14	661.91	1324.69	18947	285	60	663	1.37	a	
15	697.30	1395.29	43	51	41	378	0.90	a	
16	898.34	1796.29	76	75	60	778	1.10	a	
17	962.13	1923.55	21	58	47	550	0.83	a	NET< CL
18	1173.35	2344.87	16404	263	49	430	1.79	a	
19	1332.44	2662.21	14719	245	26	127	1.90	a	
20	1835.33	3665.33	66	20	10	17	1.99	a	

000333

040179D07.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Inc.
GammaScan

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Background File:. . . . . DET070130.BKG (0413012-47 Weekly Bkg.)

Bkg.File Detector #: 7

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	59.42	80758	622	208	80757	622	208	
2	66.30	375	231	187	372	231	187	
3	87.97	29170	371	119	29169	371	119	
12	511.03	64	79	64	26	79	65	NET<CL
17	962.13	21	58	47	20	58	47	NET<CL

040179D07.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Inc.
GammaScan

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Geo 1 / Water

Sample ID: 0413003-S7 GEO 1 CAL VER. (588)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	01/31/2004 13:21:07
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.27e+004 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.00e+000 L	Real Time	1855 Sec
Collection Efficiency	1.0000	Spectrum File	.040179D07.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 7 (Detector 7)

Efficiency File: (D07)(Sh01).EFF (Geo 1 Eff CaL)
Eff.=1/[4.38E-01*En^-1.35E+00 + 1.62E+02*En^9.38E-01] 01/23/2004

Library File: . . . .ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/L)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54		1.05E+05 +- 8.11E+02	5.46E+02	2.71E+02	3.79E+06
Cd-109	88.02		1.40E+06 +- 1.78E+04	1.16E+04	5.72E+03	1.11E+04
Co-57	122.07		3.37E+04 +- 1.14E+03	1.17E+03	5.79E+02	6.50E+03
Ce-139	165.85		4.48E+04 +- 9.14E+03	1.40E+04	6.88E+03	3.30E+03
Cs-137	661.62		3.93E+04 +- 5.91E+02	2.54E+02	1.24E+02	2.64E+05
Co-60	Average:x		6.58E+04 +- 7.59E+02	. . . .	. . . .	4.62E+04
	1173.21		6.54E+04 +- 1.05E+03	4.05E+02	1.97E+02	4.62E+04
	1332.48		6.61E+04 +- 1.10E+03	2.48E+02	1.18E+02	4.62E+04
Hg-203	279.18		MDA	1.91E+08	9.39E+07	1.12E+03
Sn-113	391.68		MDA	5.23E+04r	2.55E+04	2.76E+03
Y-88	898.02		MDA	1.08E+05r	5.24E+04	2.56E+03

MEASURED TOTAL: 1.69E+06 +- 3.02E+04 pCi/L

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
2	66.30	136.62	372	231	187	5561	1.34	Unknown
5	136.45	276.55	655	126	95	1650	0.93	Unknown
6	151.52	306.60	55	70	57	788	0.47	Deleted
8	283.11	569.08	44	98	80	1180	0.99	Deleted
9	302.01	606.78	47	105	86	1253	1.15	Deleted

040179D07.SPC Analyzed by

UNKNOWN, SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
10	337.40	677.37	35	57	46	522	0.56	Deleted
11	391.70	785.70	132	92	73	989	1.04	Unknown
12	511.03	1023.72	26	79	65	802	1.13	Deleted
13	615.91	1232.93	40	63	51	550	1.03	Deleted
15	697.30	1395.29	43	51	41	378	0.90	Unknown
16	898.34	1796.29	76	75	60	778	1.10	Unknown
17	962.13	1923.55	20	58	47	550	0.83	Deleted
20	1835.33	3665.33	66	20	10	17	1.99	Unknown

031485D08.SPC Analyzed by 77

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Inc.
GammaScan

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Geo 1 / Water

Sample ID: 0313020-8 Geo 1 Eff Cal (718)

Sampling Start:	07/01/2003 12:00:00	Counting Start:	10/29/2003 12:52:14
Sampling Stop:	07/01/2003 12:00:00	Decay Time.	2.88E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	5400 Sec
Sample Size	1.00E+000 L	Real Time	5898 Sec
Collection Efficiency	1.0000	Spc. File	.031485D08.SPC

Detector #: 8 (Detector 8)

Energy(keV) = -0.21 + 0.500*Ch + 1.17E-07*Ch^2 + 1.84E-11*Ch^3 10/29/2003

FWHM(keV) = 0.72 + 0.014*En + 5.05E-04*En^2 + 0.00E+00*En^3 01/02/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 95/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	57.28	115.00	13675	1528	1242	155395	2.56 a	HiResid Wide Pk
2	59.47	119.38	263269	1163	449	40723	0.88 b	HiResid
3	67.00	134.44	21803	1216	970	94803	2.54 a	HiResid Wide Pk
4	70.68	141.79	25747	978	760	71102	1.91 b	HiResid
5	72.84	146.12	21185	726	547	47401	1.37 c	HiResid
6	74.91	150.26	12349	1012	812	77027	2.10 d	HiResid
7	77.92	156.27	15381	1205	970	94803	2.65 e	HiResid
8	82.33	165.10	18853	1025	812	77027	2.17 f	HiResid
9	84.99	170.42	24544	1159	917	88878	2.48 g	HiResid
10	88.01	176.46	351535	1300	439	35551	1.05 h	HiResid
11	121.99	244.42	156527	883	322	20889	0.78 a	HiResid
12	136.41	273.26	19698	459	299	18025	0.87 a	
13	165.81	332.06	142427	824	272	14901	0.88 a	HiResid
14	199.06	398.55	2198	321	252	12831	0.89 a	
15	203.45	407.33	592	311	252	12831	0.89 b	
16	255.06	510.54	4150	298	221	9883	0.86 a	
17	279.16	558.73	70864	602	231	9826	1.04 a	
18	301.16	602.71	308	324	265	11087	1.34 a	
19	310.50	621.40	162	159	129	4082	0.56 a	
20	391.67	783.69	95488	663	197	7662	1.12 a	HiResid
21	427.61	855.55	289	279	227	8994	1.39 a	
22	510.91	1022.07	2213	371	295	11730	2.36 a	Wide Pk

031485D08.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
23	661.71	1323.50	79718	613	196	7098	1.35 a	HiResid
24	692.95	1385.92	160	239	196	7078	1.35 a	NET< CL
25	814.06	1627.93	1938	211	158	4854	1.41 a	
26	898.06	1795.76	109638	695	175	5934	1.54 a	HiResid
27	1138.82	2276.66	106	164	134	3326	1.66 a	NET< CL
28	1173.34	2345.58	89992	624	140	3451	1.75 a	HiResid
29	1325.13	2648.63	2706	230	168	3700	3.59 a	HiResid Wide Pk
30	1332.55	2663.46	82633	587	98	1850	1.86 b	HiResid
31	1417.48	2832.98	66	79	64	1001	0.98 a	
32	1836.35	3668.54	64701	513	54	509	2.20 a	HiResid
33	1850.93	3697.61	234	76	57	439	3.51 a	Wide Pk
34	1856.79	3709.29	207	90	70	565	4.37 b	

031485D08.SPC Analyzed by

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SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

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Sample ID: 0313020-8 Geo 1 Eff Cal (718)
Stds. Match Tolerance: 2.00 keV

Detector Number: 08 Calibration Date. . . 10/29/2003 12:52:14
Geometry File (D08)(Sh01).EFF ID. Geo 1 Eff Cal
Amount of Std. in Calib. Source: 1.000000 gm

Eff = 1 / [5.00e-01*En^-1.24e+00 + 1.20e+02*En^ 8.79e-01]
(Where En = Energy in MeV)) (Exponential)

Pk. #	Energy (kev)	Measured Efficiency	% Difference	Calculated Efficiency	% Difference	Prev.Calc. Efficiency
1	59.50	3.74e-02	0.51	3.76e-02	-7.13	3.51e-02
2	88.04	4.19e-02	-1.90	4.11e-02	-4.52	3.93e-02
3	122.06	3.82e-02	2.08	3.90e-02	-2.48	3.80e-02
4	165.85	3.40e-02	0.11	3.41e-02	-1.10	3.37e-02
5	279.00	2.45e-02	-1.67	2.41e-02	-0.03	2.41e-02
6	391.68	1.86e-02	-0.78	1.85e-02	0.09	1.85e-02
7	661.64	1.18e-02	0.57	1.19e-02	-0.18	1.19e-02
8	898.02	8.76e-03	3.95	9.12e-03	-0.45	9.08e-03
9	1173.21	7.24e-03	-0.26	7.23e-03	-0.73	7.17e-03
10	1332.48	6.58e-03	-1.83	6.47e-03	-0.87	6.41e-03
11	1836.01	4.95e-03	-1.33	4.88e-03	-1.23	4.82e-03

Calibration Results Saved.

Calibration Verification: Geometry 1

Std. # 588
Det. #: 8

FROM CALIBRATION CERTIFICATE				FROM ANALYTICS.LIB			EXPECTED ACTIVITY			MEASURED ACTIVITY		
Isotope	KeV	Half Life(y)	Gammas/Sec.	Gamma Fraction:	Mass of Standard			DPS	pCi/L	pCi/L	% Recovery	OK ?
Am-241	59.9	432.0000	1309	0.3590	1	L	Am-241	3646.2	98547.0	96400.0	97.8%	Pass
Cd-109	88	1.2666	1894	0.0361			Cd-109	52465.4	1417983.1	1400000.0	98.7%	Pass
Co-57	122	0.7441	1000	0.8551			Co-57	1169.5	31606.9	34900.0	110.4%	Pass
Ce-139	166	0.3768	1429	0.8035			Ce-139	1778.5	48066.7	47300.0	98.4%	Pass
Hg-203	279	0.1276	3104	0.7730			Hg-203	4015.5	108527.7	>5 Halflives	>5 Halflives	na
Sn-113	392	0.3151	2107	0.6490			Sn-113	3246.5	87744.1	>5 Halflives	>5 Halflives	na
Cs-137	662	30.0000	1328	0.8512			Cs-137	1560.2	42166.2	39700.0	94.2%	Pass
Y-88	898	0.2919	4876	0.9340			Y-88	5220.6	141096.1	134000.0	95.0%	Pass
Co-60	1173	5.2714	2369	1.0000			Co-60	2369.0	64027.0	64900.0	101.4%	Pass
Co-60	1332	5.2714	2397	1.0000			Co-60	2397.0	64783.8	65800.0	101.6%	Pass
Y-88	1836	0.2919	5099	0.9938			Y-88	5130.8	138670.6	149000.0	107.4%	Pass

031486D08.SPC Analyzed by 77

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Inc.
GammaScan

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Geo 1 / Water

Sample ID: 0313020-S8, Geo 1 Cal Ver (588)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	10/29/2003 15:17:48
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.04E+004 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.00E+000 L	Real Time	1928 Sec
Collection Efficiency	1.0000	Spc. File	.031486D08.SPC

Detector #: 8 (Detector 8)

Energy(keV)= -0.21 + 0.500*Ch + 1.17E-07*Ch^2 + 1.84E-11*Ch^3 10/29/2003
FWHM(keV) = 0.72 + 0.014*En + 5.05E-04*En^2 + 0.00E+00*En^3 01/02/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 95/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	59.37	119.17	86365	645	219	9665	0.86	a	HiResid Wide Pk
2	66.82	134.08	-1	227	187	6443	0.93	b	NET< CL HiResid
3	67.47	135.38	0	1430	1176	58978	7.50	c	NET< CL HiResid
4	67.89	136.21	45	195	160	5168	0.77	d	NET< CL HiResid
5	87.98	176.41	38973	423	125	3140	0.80	a	HiResid
6	121.98	244.39	8803	218	91	1660	0.85	a	
7	136.41	273.26	980	125	89	1603	0.80	a	
8	165.83	332.09	1194	134	95	1660	0.97	a	
9	253.64	507.69	48	71	58	820	0.54	a	NET< CL
10	273.52	547.46	63	67	54	713	0.55	a	
11	306.81	614.00	10	63	51	653	0.56	a	NET< CL
12	391.74	783.82	304	94	72	1085	0.93	a	
13	661.67	1323.40	25332	328	65	782	1.37	a	
14	897.95	1795.55	302	91	70	993	1.33	a	
15	1173.26	2345.43	22996	310	54	521	1.73	a	HiResid
16	1332.48	2663.32	20856	290	25	124	1.84	a	HiResid
17	1836.18	3668.20	192	31	12	26	2.09	a	

031486D08.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Inc.
GammaScan

****

Background File:. . . . . DET081027.BKG (0322008-38 Weekly Bkg)

Bkg.File Detector #: 8

BACKGROUND SUBTRACT RESULTS

PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
2	66.82	-1	227	187	-5	227	187	NET<CL
5	87.98	38973	423	125	38969	423	125	

031486D08.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Inc.
GammaScan

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Geo 1 / Water

Sample ID: 0313020-S8 Geo 1 Cal Ver (588)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	10/29/2003 15:17:48
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.04e+004 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.00e+000 L	Real Time	1928 Sec
Collection Efficiency	1.0000	Spectrum File	.031486D08.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 8 (Detector 8)

Efficiency File: (D08)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[5.00E-01*En^-1.24E+00 + 1.20E+02*En^8.79E-01] 10/29/2003

Library File: . . . .ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	N E T	Concentration (pCi/L)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54		9.64E+04 +- 7.20E+02	4.92E+02	2.44E+02	3.79E+06
Cd-109	88.02		1.40E+06 +- 1.52E+04	9.10E+03	4.50E+03	1.11E+04
Co-57	122.07		3.49E+04 +- 8.62E+02	7.30E+02	3.60E+02	6.50E+03
Ce-139	165.85		4.73E+04 +- 5.32E+03	7.62E+03	3.75E+03	3.30E+03
Sn-113	391.68		6.37E+04 +- 1.97E+04	3.06E+04	1.50E+04	2.76E+03
Cs-137	661.62		3.97E+04 +- 5.14E+02	2.08E+02	1.02E+02	2.64E+05
Y-88	Average:	x	1.45E+05 +- 2.09E+04	. . . .	. . . .	2.56E+03
	898.02		1.34E+05 +- 4.05E+04	6.28E+04	3.08E+04	2.56E+03
	1836.01		1.49E+05 +- 2.44E+04	2.09E+04	9.42E+03	2.56E+03
Co-60	Average:	x	6.53E+04 +- 6.33E+02	. . . .	. . . .	4.62E+04
	1173.21		6.49E+04 +- 8.76E+02	3.15E+02	1.54E+02	4.62E+04
	1332.48		6.58E+04 +- 9.16E+02	1.68E+02	7.99E+01	4.62E+04
Hg-203	279.18		MDA	4.92E+07	2.43E+07	1.12E+03

MEASURED TOTAL: 1.90E+06 +- 6.38E+04 pCi/L

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
2	66.82	134.08	-5	227	187	6443	0.93	Deleted
3	67.47	135.38	0	1430	1176	58978	7.50	Deleted
4	67.89	136.21	45	195	160	5168	0.77	Deleted

031486D08.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
7	136.41	273.26	980	125	89	1603	0.80	Unknown
9	253.64	507.69	48	72	58	820	0.54	Deleted
10	273.52	547.46	63	67	54	713	0.55	Unknown
11	306.81	614.00	10	63	51	653	0.56	Deleted

040757D10.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0413003-10 GEO 1 EFF CAL (718)

Sampling Start:	07/01/2003 12:00:00	Counting Start:	05/24/2004 12:35:35
Sampling Stop:	07/01/2003 12:00:00	Decay Time.	7.87E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.00E+000 L	Real Time	3849 Sec
Collection Efficiency	1.0000	Spc. File	.040757D10.SPC

Detector #: 10 (Detector 10)

Energy(keV)= -1.25 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 05/24/2004

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.41	95.16	1407	814	666	59672	2.37 a	Wide Pk
2	49.56	101.46	14379	1118	899	85245	3.26 b	
3	53.10	108.51	22805	1269	1014	98032	3.80 c	
4	56.92	116.15	27605	1142	899	85245	3.26 d	
5	59.34	120.97	161301	958	430	34098	1.28 e	
6	66.86	135.98	6936	1022	829	81305	2.73 a	Wide Pk
7	69.96	142.17	5645	1069	870	86087	2.96 b	
8	85.69	173.58	2274	632	514	48853	1.30 a	
9	87.87	177.94	257429	1151	447	36920	1.30 b	
10	121.87	245.82	125279	820	340	21358	1.35 a	HiResid
11	136.27	274.58	16002	446	302	16898	1.34 a	
12	165.75	333.42	75490	672	319	17655	1.46 a	
13	255.14	511.90	2120	347	275	14758	1.48 a	
14	279.23	560.01	5367	349	260	13160	1.55 a	
15	391.78	784.73	54474	578	280	13201	1.90 a	HiResid
16	511.34	1023.43	1367	344	277	12565	2.47 a	
17	661.96	1324.17	182934	911	257	10879	2.46 a	HiResid
18	822.30	1644.31	242	311	254	10237	2.55 a	NET< CL
19	898.32	1796.08	64817	627	301	13392	2.99 a	HiResid
20	1173.48	2345.46	197640	941	253	8316	3.53 a	HiResid
21	1329.52	2657.02	18329	387	227	5096	5.44 a	HiResid
22	1332.81	2663.58	173038	855	161	3397	3.63 b	HiResid
23	1835.62	3667.50	43354	446	130	1752	5.09 a	HiResid

040757D10.SPC Analyzed by

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SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

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Sample ID: 0413003-10 GEO 1 EFF CAL (718)
Stds. Match Tolerance: 2.00 keV

Detector Number: 10 Calibration Date. . . 05/24/2004 12:35:35
Geometry File (D10)(Sh01).EFF ID. Geo 1 Eff Cal
Amount of Std. in Calib. Source: 1.000000 gm

Eff = 1 / [4.18e-02*En^-2.24e+00 + 3.41e+01*En^ 6.74e-01]
(Where En = Energy in MeV)) (Exponential)

Pk. #	Energy (kev)	Measured Efficiency	% Difference	Calculated Efficiency	% Difference	Prev.Calc. Efficiency
1	59.50	3.44e-02	2.03	3.51e-02	11.56	3.97e-02
2	88.04	6.28e-02	-2.61	6.12e-02	4.00	6.37e-02
3	122.06	7.78e-02	-0.68	7.73e-02	1.34	7.84e-02
4	165.85	7.71e-02	3.55	7.99e-02	1.26	8.10e-02
5	391.68	5.57e-02	-2.83	5.41e-02	1.24	5.48e-02
6	661.64	4.12e-02	-6.68	3.86e-02	-0.54	3.84e-02
7	898.02	3.00e-02	4.69	3.15e-02	-1.87	3.09e-02
8	1173.21	2.57e-02	2.30	2.63e-02	-3.14	2.55e-02
9	1332.48**	2.43e-02	-0.48	2.42e-02	-3.76	2.33e-02
10	1836.01	1.92e-02	1.32	1.95e-02	-5.36	1.85e-02

Calibration Results Saved.

* MANUALLY ADJUSTED EFFICIENCY FROM ORIGINAL VALUE OF 2.23 x10^-2. % DIFF. FROM CALCULATED VALUE => 7.8%

** 279 keV PHOTOPEAK MANUALLY DELETED DUE TO MORE THAN 5 HALF-LIVES EXPIRED.

CHANGES O.K. PER R.A. SOP 713.
MC 5/24/04

Calibration Verification: Geometry 1

Std. # 588
Det. #: 10

FROM CALIBRATION CERTIFICATE				FROM ANALYTICS.LIB			EXPECTED ACTIVITY			MEASURED ACTIVITY		
Isotope	KeV	Half Life(y)	Gammas/Sec.	Gamma Fraction:	Mass of Standard			DPS	pCi/L	pCi/L	% Recovery	OK ?
Am-241	59.9	432.0000	1309	0.3590	1	L	Am-241	3646.2	98547.0	100000	101.5%	Pass
Cd-109	88	1.2666	1894	0.0361			Cd-109	52465.4	1417983.1	1510000	106.5%	Pass
Co-57	122	0.7441	1000	0.8551			Co-57	1169.5	31606.9	33100	104.7%	Pass
Ce-139	166	0.3768	1429	0.8035			Ce-139	1778.5	48066.7	43900	>5 Halflives	>5 Halflives
Hg-203	279	0.1276	3104	0.7730			Hg-203	4015.5	108527.7	>5 Halflives	>5 Halflives	>5 Halflives
Sn-113	392	0.3151	2107	0.6490			Sn-113	3246.5	87744.1	>5 Halflives	>5 Halflives	>5 Halflives
Cs-137	662	30.0000	1328	0.8512			Cs-137	1560.2	42166.2	43700	103.6%	Pass
Y-88	898	0.2919	4876	0.9340			Y-88	5220.6	141096.1	>5 Halflives	>5 Halflives	>5 Halflives
Co-60	1173	5.2714	2369	1.0000			Co-60	2369.0	64027.0	65000	101.5%	Pass
Co-60	1332	5.2714	2397	1.0000			Co-60	2397.0	64783.8	66200	102.2%	Pass
Y-88	1836	0.2919	5099	0.9938			Y-88	5130.8	138670.6	>5 Halflives	>5 Halflives	>5 Halflives

040763D10.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0413003-10A GEO 1 CAL VER (588)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	05/25/2004 14:21:45
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.54E+004 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.00E+000 L	Real Time	1903 Sec
Collection Efficiency	1.0000	Spc. File	.040763D10.SPC

Detector #: 10 (Detector 10)

Energy(keV)= -1.12 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 05/25/2004

FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	50.09	102.26	2052	603	490	32320	2.26	a	Wide Pk
2	56.82	115.69	2473	628	510	35009	2.28	a	HiResid Wide Pk
3	59.46	120.96	83827	665	269	14240	1.15	b	HiResid
4	66.79	135.60	-0	378	311	14252	1.95	c	NET< CL HiResid
5	69.21	140.44	1	633	520	25828	3.69	d	NET< CL HiResid
6	88.02	178.00	45643	491	199	7301	1.26	a	
7	122.00	245.84	9726	276	159	4692	1.25	a	
8	136.47	274.74	1264	215	167	4840	1.49	a	
9	165.77	333.26	908	175	135	3594	1.09	a	HiResid
10	391.92	784.83	287	155	125	3186	1.27	a	
11	511.81	1024.22	310	263	214	6181	3.46	a	Wide Pk
12	662.06	1324.23	89496	621	137	3088	2.39	a	HiResid
13	959.93	1919.02	278	239	195	5436	3.11	a	
14	1173.55	2345.57	77779	593	166	3700	3.45	a	HiResid
15	1332.67	2663.30	72762	557	114	1599	3.92	a	HiResid
16	1836.32	3668.98	203	81	62	387	5.18	a	

000414

040763D10.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET100521.BKG (0417010-30 Weekly Bkg)

Bkg.File Detector #: 10

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
4	66.79	-0	378	311	-22	378	311	NET<CL
6	88.02	45643	491	199	45632	491	199	
11	511.81	310	263	214	157	263	216	NET<CL

040763D10.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo 1 / Water

Sample ID: 0413003-10A GEO 1 CAL VER (588)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	05/25/2004 14:21:45
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.54e+004 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.00e+000 L	Real Time	1903 Sec
Collection Efficiency	1.0000	Spectrum File	.040763D10.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 10 (Detector 10)

Efficiency File: (D10)(Sh01).EFF (Geo 1 Eff Cal)

Eff.=1/[4.18E-02*En^-2.24E+00 + 3.41E+01*En^6.74E-01] 05/24/2004

Library File: . . . .ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/L)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54		1.00E+05 +- 7.95E+02	6.46E+02	3.21E+02	3.79E+06
Cd-109	88.02		1.51E+06 +- 1.62E+04	1.32E+04	6.58E+03	1.11E+04
Co-57	122.07		3.31E+04 +- 9.42E+02	1.10E+03	5.43E+02	6.50E+03
Ce-139	165.85		4.39E+04 +- 8.45E+03	1.32E+04	6.53E+03	3.30E+03
Cs-137	661.62		4.37E+04 +- 3.03E+02	1.35E+02	6.69E+01	2.64E+05
Co-60	Average:x		6.56E+04 +- 3.54E+02	. . . .	. . . .	4.62E+04
	1173.21		6.50E+04 +- 4.95E+02	2.79E+02	1.39E+02	4.62E+04
	1332.48		6.62E+04 +- 5.07E+02	2.10E+02	1.04E+02	4.62E+04
Hg-203	279.18		MDA	6.39E+08	3.17E+08	1.12E+03
Sn-113	391.68		MDA	5.20E+04r	2.57E+04	2.76E+03
Y-88	898.02		MDA	1.85E+05	9.20E+04	2.56E+03

MEASURED TOTAL: 1.80E+06 +- 2.71E+04 pCi/L

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	50.09	102.26	2052	603	490	32320	2.26	Unknown
2	56.82	115.69	2473	628	510	35009	2.28	Unknown
4	66.79	135.60	-22	378	311	14252	1.95	Deleted
5	69.21	140.44	1	633	520	25828	3.69	Deleted
8	136.47	274.74	1264	215	167	4840	1.49	Unknown

040763D10.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
10	391.92	784.83	287	155	125	3186	1.27	Unknown
11	511.81	1024.22	157	263	216	6181	3.46	Deleted
13	959.93	1919.02	278	239	195	5436	3.11	Unknown
16	1836.32	3668.98	203	81	62	387	5.18	Unknown

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

PAI 079
rec'd 8-05-03

66353-307

100 Grams of Sand in 16 Ounce PP Jar

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: July 1, 2003 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	1313	3.0
Cd-109	88	462.6	d	1874	3.3
Co-57	122	271.79	d	1039	2.8
Ce-139	166	137.6	d	1428	2.8
Hg-203	279	46.61	d	3214	2.7
Sn-113	392	115.1	d	1973	2.6
Cs-137	662	30.07	y	1269	3.0
Y-88	898	106.6	d	5093	2.6
Co-60	1173	5.2714	y	2417	2.7
Co-60	1332	5.2714	y	2442	2.6
Y-88	1836	106.6	d	5321	2.6

Approximately 55 mL of customer supplied sand.
P O NUMBER EW060303, Item 3

SOURCE PREPARED BY: M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED: W. M. Mty 8-1-03

This standard will expire one year after the calibration date.

000418

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318-U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS
BATCH 113

CALIBRATION DATE: JULY 1, 2003 12:00 EST

ISOTOPE	ENERGY (keV)	CALIBRATION METHOD[1]	STATISTICS[2]	CALIBRATION[2]	PEAK FITTING[2]	GEOMETRY[2]	IMPURITIES[2]	WEIGHING[2]	COMBINED STANDARD UNCERTAINTY[2]	RELATIVE EXPANDED UNCERTAINTY[2] (K=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	0.93	0.71	0.7	0	0.2	1.40	2.8
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	0.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	0.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

OPTIONAL ADDITIONAL ISOTOPES

Pb-210	46.5	4ΠLS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4ΠLS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

[1]Calibration Methods:

- 4ΠLS (4 pi Liquid Scintillation Counting)
- HPGe (High Purity Germanium Gamma Ray Spectrometer)
- IC (Gamma Ray Ionization Chamber)

[2]As Percent (%)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

Analytics, Incorporated
Atlanta, Georgia

is a participant for the period January 1, 2003, through December 31, 2003, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory
(over)

000433

040845D02.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

****

Geo.11 / Solid

Sample ID: 0413010-2 GEO 11 EFF CAL (719)

Sampling Start:	07/01/2003 12:00:00	Counting Start:	06/01/2004 15:24:03
Sampling Stop:	07/01/2003 12:00:00	Decay Time.	8.07E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.00E+002 g	Real Time	3846 Sec
Collection Efficiency	1.0000	Spc. File	.040845D02.SPC

Detector #: 2 (Detector 2)

Energy(keV)= -0.69 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/01/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	59.57	120.48	53705	562	262	13800	0.75 a	HiResid
2	88.02	177.35	166240	883	279	15657	0.77 a	HiResid
3	122.10	245.49	90941	659	219	9706	0.76 a	HiResid
4	136.53	274.34	12088	324	196	7731	0.85 a	
5	165.88	333.02	57208	529	186	7003	0.89 a	
6	255.25	511.69	1382	252	198	7230	1.02 a	
7	279.26	559.69	3540	256	186	6402	1.04 a	
8	310.47	622.10	257	271	221	7732	1.25 a	
9	391.74	784.57	31691	422	186	5909	1.15 a	
10	509.60	1020.20	280	207	168	5222	1.26 a	
11	511.48	1023.96	486	246	199	6528	1.67 b	
12	661.71	1324.31	96984	651	157	4527	1.38 a	
13	813.90	1628.57	569	203	162	4557	1.46 a	
14	820.83	1642.42	319	249	203	6077	1.98 b	
15	898.10	1796.92	32355	419	177	5788	1.64 a	
16	1173.27	2347.04	97986	644	125	2740	1.86 a	
17	1325.29	2650.96	760	161	125	2033	3.64 a	HiResid Wide Pk
18	1332.44	2665.27	88225	601	77	1109	2.01 b	HiResid
19	1835.85	3671.70	18978	282	48	379	2.46 a	

040845D02.SPC Analyzed by

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SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

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Sample ID: 0413010-2 GEO 11 EFF CAL (719)
Stds. Match Tolerance: 2.00 keV

Detector Number: 02 Calibration Date. . . 06/01/2004 15:24:03
Geometry File (D02)(Sh11).EFF ID. Geo 11 Eff Cal
Amount of Std. in Calib. Source: 100.000000 gm

Eff = 1 / [8.73e-04*En^-4.04e+00 + 6.76e+01*En^ 8.33e-01]
(Where En = Energy in MeV)) (Exponential)

Pk. #	Energy (kev)	Measured Efficiency	% Difference	Calculated Efficiency	% Difference	Prev.Calc. Efficiency
1	59.50	1.14e-02	2.71	1.17e-02	4.39	1.22e-02
2	88.04	4.08e-02	-2.49	3.98e-02	-5.11	3.78e-02
3	122.06	*6.13e-02	1.66	6.23e-02	-3.70	6.01e-02
4	165.85	6.05e-02	0.95	6.10e-02	0.18	6.11e-02
5	391.68	3.38e-02	-4.66	3.23e-02	1.93	3.29e-02
6	661.64	2.17e-02	-3.87	2.09e-02	1.18	2.11e-02
7	898.02	1.57e-02	3.12	1.62e-02	0.68	1.63e-02
8	1173.21	1.27e-02	1.91	1.30e-02	0.24	1.30e-02
9	1332.48	1.13e-02	2.81	1.17e-02	0.03	1.17e-02
10	1836.01	8.81e-03	1.27	8.92e-03	-0.50	8.88e-03

Calibration Results Saved.

*MANUALLY ADJUSTED EFFICIENCY FROM ORIGINAL VALUE OF 5.73×10^{-2}, % DIFF. FROM CALCULATED VALUE => 8.03%.

- 279 keV PHOTOPEAK DELETED DUE TO MORE THAN 5 HALF-LIVES EXPIRED.

CHANGES O.K. PER P.A. S.O.P 713.
MC 6/1/04

Efficiency Calibration Verification

Geo. 11 Std # 589
Det. # 2

FROM CALIBRATION CERTIFICATE				FROM ANALYTICS.LIB		EXPECTED ACTIVITY			MEASURED ACTIVITY		
Isotope	KeV	Half Life(y)	Gammas/Sec.	Gamma Fraction:	Mass of Standard		DPS	pCi/g	pCi/g	% Recovery	Pass ?
Am-241	59.9	432.0000	1345	0.3590	100 g	Am-241	3746.5	1012.6	1000	98.8%	Pass
Cd-109	88	1.2666	1881	0.0361		Cd-109	52105.3	14082.5	14900	105.8%	Pass
Co-57	122	0.7441	1030	0.8551		Co-57	1204.5	325.6	294	90.3%	Pass
Ce-139	166	0.3768	1402	0.8035		Ce-139	1744.9	471.6	>5 Halflives	>5 Halflives	>5 Halflives
Hg-203	279	0.1276	2980	0.7730		Hg-203	3855.1	1041.9	> 5 Halflives	> 5 Halflives	> 5 Halflives
Sn-113	392	0.3151	1860	0.6490		Sn-113	2865.9	774.6	> 5 Halflives	> 5 Halflives	> 5 Halflives
Cs-137	662	30.0000	1205	0.8512		Cs-137	1415.6	382.6	396	103.5%	Pass
Y-88	898	0.2919	4932	0.9340		Y-88	5280.5	1427.2	> 5 Halflives	> 5 Halflives	> 5 Halflives
Co-60	1173	5.2714	2360	1.0000		Co-60	2360.0	637.8	612	95.9%	Pass
Co-60	1332	5.2714	2381	1.0000		Co-60	2381.0	643.5	613	95.3%	Pass
Y-88	1836	0.2919	5162	0.9938		Y-88	5194.2	1403.8	> 5 Halflives	> 5 Halflives	> 5 Halflives

040846D02.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0413010-2A GEO 11 CAL VER (589)

Sampling Start: 07/01/2001 12:00:00	Counting Start: 06/01/2004 16:51:08
Sampling Stop: 07/01/2001 12:00:00	Decay Time. . . . . 2.56E+004 Hrs
Buildup Time. . . . . 0.00E+000 Hrs	Live Time . . . . . 1800 Sec
Sample Size . . . . . 1.00E+002 g	Real Time . . . . . 1850 Sec
Collection Efficiency 1.0000	Spc. File 040846D02.SPC

Detector #: 2 (Detector 2)

Energy(keV)= -0.69 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/01/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	59.53	120.39	28013	376	141	4000	0.78 a	
2	87.98	177.28	28895	373	125	3173	0.78 a	HiResid
3	98.84	199.00	21	67	55	830	0.39 a	NET< CL
4	103.03	207.36	100	86	69	1173	0.41 a	
5	120.39	242.07	59	107	87	1680	0.69 a	NET< CL
6	122.05	245.40	6829	207	102	2100	0.83 b	
7	136.51	274.29	836	133	99	1968	0.81 a	
8	165.86	332.97	722	127	95	1805	0.87 a	
9	264.16	529.51	79	98	79	1401	0.60 a	NET< CL
10	310.45	622.05	84	94	76	1281	0.62 a	
11	345.57	692.27	44	120	98	1776	0.93 a	NET< CL
12	391.54	784.16	123	122	98	1790	0.93 a	
13	522.67	1046.34	65	71	57	792	0.67 a	
14	661.54	1323.97	43873	432	87	1316	1.40 a	
15	697.41	1395.69	72	87	70	964	1.13 a	
16	936.64	1873.97	98	116	94	1830	1.29 a	
17	1172.99	2346.48	35940	389	70	870	1.87 a	
18	1332.13	2664.64	32403	363	35	229	2.01 a	
19	1835.54	3671.08	76	36	25	96	2.89 a	

040846D02.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET020528.BKG (0417010-32 Weekly Bkg)

Bkg.File Detector #: 2

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG

040846D02.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0413010-2A GEO 11 CAL VER (589)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	06/01/2004 16:51:08
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.56e+004 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.00e+002 g	Real Time	1850 Sec
Collection Efficiency	1.0000	Spectrum File	.040846D02.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 2 (Detector 2)

Efficiency File: (D02)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[8.73E-04*En^-4.04E+00 + 6.76E+01*En^8.33E-01] 06/01/2004

Library File: . . . .ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54		1.00E+03 +- 1.35E+01	1.02E+01	5.05E+00	3.79E+06
Cd-109	88.02		1.49E+04 +- 1.92E+02	1.30E+02	6.45E+01	1.11E+04
Co-57	122.07		2.94E+02 +- 8.90E+00	8.90E+00	4.39E+00	6.50E+03
Ce-139	165.85		4.74E+02 +- 8.33E+01	1.26E+02	6.21E+01	3.30E+03
Cs-137	661.62		3.96E+02 +- 3.90E+00	1.60E+00	7.85E-01	2.64E+05
Co-60	Average:	x	6.12E+02 +- 4.76E+00	. . . . .	. . . . .	4.62E+04
	1173.21		6.12E+02 +- 6.61E+00	2.44E+00	1.20E+00	4.62E+04
	1332.48		6.13E+02 +- 6.86E+00	1.38E+00	6.66E-01	4.62E+04
Hg-203	279.18		MDA	7.15E+06	3.53E+06	1.12E+03
Sn-113	391.68		MDA	6.58E+02r	3.23E+02	2.76E+03
Y-88	898.02		MDA	2.17E+03	1.07E+03	2.56E+03

MEASURED TOTAL: 1.76E+04 +- 3.06E+02 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
3	98.84	199.00	21	67	55	830	0.39	Deleted
4	103.03	207.36	100	86	69	1173	0.41	Unknown
5	120.39	242.07	59	107	87	1680	0.69	Deleted
7	136.51	274.29	836	133	99	1968	0.81	Unknown
9	264.16	529.51	79	98	80	1401	0.60	Deleted

040846D02.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
10	310.45	622.05	84	94	76	1281	0.62	1332DEsc
11	345.57	692.27	44	120	98	1776	0.93	Deleted
12	391.54	784.16	123	122	98	1790	0.93	Unknown
13	522.67	1046.34	65	71	57	792	0.67	Unknown
15	697.41	1395.69	72	87	70	964	1.13	Unknown
16	936.64	1873.97	98	116	94	1830	1.29	Unknown
19	1835.54	3671.08	76	36	25	96	2.89	Unknown

040787D03.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0413010-3 GEO 11 EFF CAL (719)

Sampling Start:	07/01/2003 12:00:00	Counting Start:	05/26/2004 12:09:55
Sampling Stop:	07/01/2003 12:00:00	Decay Time.	7.92E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.00E+002 g	Real Time	3759 Sec
Collection Efficiency	1.0000	Spc. File	.040787D03.SPC

Detector #: 3 (Detector 3)

Energy(keV)= -0.86 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 05/26/2004

FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	59.50	120.64	76566	697	349	22471	0.94 a	
2	87.98	177.55	188017	957	332	20392	0.97 a	
3	122.08	245.71	96945	695	253	11870	0.99 a	HiResid
4	136.52	274.57	12597	352	223	9159	1.06 a	
5	165.92	333.34	57249	562	242	9970	1.12 a	
6	255.27	511.91	1479	258	202	8066	1.09 a	
7	279.23	559.79	3449	262	193	7326	1.15 a	
8	310.30	621.89	243	271	222	8537	1.39 a	
9	391.77	784.72	31097	435	210	7641	1.40 a	
10	510.97	1022.94	539	263	213	7066	1.83 a	
11	661.69	1324.17	89205	635	177	5804	1.70 a	HiResid
12	812.30	1625.18	271	206	168	5411	1.83 a	
13	814.00	1628.57	453	221	179	5903	1.90 b	
14	821.09	1642.74	211	233	190	6395	2.09 c	
15	898.04	1796.53	30225	422	197	7187	2.04 a	HiResid
16	1173.17	2346.40	88912	623	148	3738	2.33 a	HiResid
17	1332.33	2664.50	79117	584	127	2668	2.48 a	HiResid
18	1835.67	3670.47	17090	273	63	573	3.10 a	HiResid

040787D03.SPC Analyzed by

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SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

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Sample ID: 0413010-3 GEO 11 EFF CAL (719)
Stds. Match Tolerance: 2.00 keV

Detector Number: 03 Calibration Date. . . 05/26/2004 12:09:55
Geometry File (D03)(Sh11).EFF ID. Geo 11 Eff Cal
Amount of Std. in Calib. Source: 100.000000 gm

Eff = 1 / [2.98e-03*En^-3.47e+00 + 7.49e+01*En^ 8.79e-01]
(Where En = Energy in MeV)) (Exponential)

Pk. #	Energy (kev)	Measured Efficiency	% Difference	Calculated Efficiency	% Difference	Prev.Calc. Efficiency
1	59.50	1.62e-02	2.65	1.67e-02	0.17	1.67e-02
2	88.04	4.57e-02	-3.36	4.42e-02	-1.12	4.37e-02
3	122.06	6.01e-02	2.56	6.17e-02	-1.16	6.10e-02
4	165.85	5.87e-02	0.59	5.90e-02	-0.79	5.85e-02
5	391.68	3.19e-02	-5.09	3.04e-02	-0.39	3.03e-02
6	661.64	1.99e-02	-3.81	1.92e-02	-0.33	1.91e-02
7	898.02	1.41e-02	4.12	1.47e-02	-0.31	1.46e-02
8	1173.21	1.15e-02	0.86	1.16e-02	-0.29	1.16e-02
9	1332.48	1.01e-02	2.34	1.04e-02	-0.28	1.03e-02
10	1836.01	7.62e-03	2.62	7.83e-03	-0.26	7.81e-03

Calibration Results Saved.

*279 keV PHOTOPEAK DELETED DUE TO MORE THAN 5 HALF-LIVES EXPIRED. CHANGE O.K. PER S.O.P. 713. MC 5-26-04

Efficiency Calibration Verification

Geo. 11 Std # 589
Det. # 3

FROM CALIBRATION CERTIFICATE				FROM ANALYTICS.LIB		EXPECTED ACTIVITY			MEASURED ACTIVITY		
Isotope	KeV	Half Life(y)	Gammas/Sec.	Gamma Fraction:	Mass of Standard		DPS	pCi/g	pCi/g	% Recovery	Pass ?
Am-241	59.9	432.0000	1345	0.3590	100 g	Am-241	3746.5	1012.6	1010	99.7%	Pass
Cd-109	88	1.2666	1881	0.0361		Cd-109	52105.3	14082.5	14900	105.8%	Pass
Co-57	122	0.7441	1030	0.8551		Co-57	1204.5	325.6	322	98.9%	Pass
Ce-139	166	0.3768	1402	0.8035		Ce-139	1744.9	471.6	>5 Halflives	>5 Halflives	>5 Halflives
Hg-203	279	0.1276	2980	0.7730		Hg-203	3855.1	1041.9	> 5 Halflives	> 5 Halflives	> 5 Halflives
Sn-113	392	0.3151	1860	0.6490		Sn-113	2865.9	774.6	> 5 Halflives	> 5 Halflives	> 5 Halflives
Cs-137	662	30.0000	1205	0.8512		Cs-137	1415.6	382.6	388	101.4%	Pass
Y-88	898	0.2919	4932	0.9340		Y-88	5280.5	1427.2	> 5 Halflives	> 5 Halflives	> 5 Halflives
Co-60	1173	5.2714	2360	1.0000		Co-60	2360.0	637.8	606	95.0%	Pass
Co-60	1332	5.2714	2381	1.0000		Co-60	2381.0	643.5	609	94.6%	Pass
Y-88	1836	0.2919	5162	0.9938		Y-88	5194.2	1403.8	> 5 Halflives	> 5 Halflives	> 5 Halflives

000437

040821D03.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0413010-3A GEO 11 CAL VER (589)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	06/01/2004 15:24:06
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.56E+004 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.00E+002 g	Real Time	1932 Sec
Collection Efficiency	1.0000	Spc. File	.040821D03.SPC

Detector #: 3 (Detector 3)

Energy(keV)= -0.89 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/01/2004
FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

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PEAK SEARCH RESULTS

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PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	59.48	120.69	39984	462	191	6710	0.91	a	
2	87.96	177.61	32136	399	144	3824	0.94	a	
3	122.04	245.76	7396	219	112	2303	1.02	a	
4	136.48	274.63	838	132	98	1934	0.88	a	
5	165.93	333.50	611	140	108	2145	0.93	a	
6	391.90	785.26	92	85	68	1150	0.68	a	
7	661.60	1324.42	39526	413	93	1587	1.69	a	HiResid
8	897.85	1796.73	98	105	85	1593	1.37	a	
9	1173.05	2346.89	31907	373	89	1343	2.29	a	HiResid
10	1332.19	2665.05	28671	344	48	374	2.41	a	HiResid
11	1836.12	3672.49	53	51	40	170	4.87	a	Wide Pk

040821D03.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET030529.BKG (0417010-33 Weekly Bkg)

Bkg.File Detector #: 3

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
2	87.96	32136	399	144	32134	399	144	
8	897.85	98	105	85	96	105	85	

040821D03.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0413010-3A GEO 11 CAL VER (589)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	06/01/2004 15:24:06
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.56e+004 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.00e+002 g	Real Time	1932 Sec
Collection Efficiency	1.0000	Spectrum File	.040821D03.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 3 (Detector 3)

Efficiency File: (D03)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[2.98E-03*En^-3.47E+00 + 7.49E+01*En^8.79E-01] 05/26/2004

Library File: . . . .ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54		1.01E+03 +- 1.16E+01	9.66E+00	4.80E+00	3.79E+06
Cd-109	88.02		1.49E+04 +- 1.85E+02	1.34E+02	6.66E+01	1.11E+04
Co-57	122.07		3.22E+02 +- 9.53E+00	9.83E+00	4.85E+00	6.50E+03
Ce-139	165.85		4.14E+02 +- 9.50E+01	1.48E+02	7.31E+01	3.30E+03
Cs-137	661.62		3.88E+02 +- 4.05E+00	1.85E+00	9.09E-01	2.64E+05
Co-60	Average:	x	6.07E+02 +- 5.08E+00	. . . .	. . . .	4.62E+04
	1173.21		6.06E+02 +- 7.09E+00	3.42E+00	1.69E+00	4.62E+04
	1332.48		6.09E+02 +- 7.30E+00	2.08E+00	1.01E+00	4.62E+04
Hg-203	279.18		MDA	7.72E+06	3.81E+06	1.12E+03
Sn-113	391.68		MDA	6.43E+02	r 3.15E+02	2.76E+03
Y-88	898.02		MDA	1.59E+03	r 7.82E+02	2.56E+03

MEASURED TOTAL: 1.76E+04 +- 3.10E+02 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
4	136.48	274.63	838	132	98	1934	0.88	Unknown
6	391.90	785.26	92	85	68	1150	0.68	Unknown
8	897.85	1796.73	96	105	85	1593	1.37	Unknown
11	1836.12	3672.49	53	51	40	170	4.87	Unknown

041081D04.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0413010-4 Geo 11 Eff Cal (719)

Sampling Start:	07/01/2003 12:00:00	Counting Start:	06/21/2004 13:26:54
Sampling Stop:	07/01/2003 12:00:00	Decay Time.	8.55E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	3600 Sec
Sample Size	1.00E+002 g	Real Time	3899 Sec
Collection Efficiency	1.0000	Spc. File	.041081D04.SPC

Detector #: 4 (Detector 4)

Energy(keV)= -1.18 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/21/2004
FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

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PEAK SEARCH RESULTS

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PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	59.50	121.26	84257	683	296	17616	0.74 a	
2	87.96	178.15	193064	953	303	18547	0.74 a	HiResid
3	122.05	246.27	98536	681	218	9543	0.81 a	HiResid
4	136.48	275.12	12418	323	192	7450	0.85 a	
5	165.83	333.77	54895	533	209	8086	0.90 a	
6	255.15	512.27	1198	245	193	6886	0.97 a	
7	279.19	560.31	2758	273	207	7309	1.09 a	
8	391.73	785.24	28791	407	185	5860	1.19 a	
9	511.16	1023.92	641	284	230	7797	1.97 a	
10	661.73	1324.84	98205	660	169	4988	1.52 a	HiResid
11	813.74	1628.62	377	189	152	4497	1.48 a	
12	898.14	1797.31	28044	409	193	6545	1.77 a	
13	1032.77	2066.36	147	214	175	5653	1.91 a	NET< CL
14	1052.31	2105.42	124	157	128	3627	1.38 a	NET< CL
15	1060.61	2122.00	143	157	128	3627	1.36 b	
16	1114.42	2229.54	409	180	144	4200	1.62 a	
17	1118.38	2237.45	24	123	101	2520	1.02 b	NET< CL
18	1173.35	2347.32	96710	644	138	3354	2.08 a	HiResid
19	1325.89	2652.18	1033	237	188	3249	5.91 a	HiResid Wide Pk
20	1332.55	2665.49	87777	602	86	1264	2.32 b	HiResid
21	1836.03	3671.69	16098	263	56	465	2.92 a	HiResid

041081D04.SPC Analyzed by

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SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

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Sample ID: 0413010-4 Geo 11 Eff Cal (719)
Stds. Match Tolerance: 2.00 keV

Detector Number: 04 Calibration Date. . . 06/21/2004 13:26:54
Geometry File (D04)(Sh11).EFF ID. Geo 11 Eff Cal
Amount of Std. in Calib. Source: 100.000000 gm

Eff = 1 / [4.98e-03*En^-3.26e+00 + 6.77e+01*En^ 8.96e-01]
(Where En = Energy in MeV)) (Exponential)

Pk. #	Energy (kev)	Measured Efficiency	% Difference	Calculated Efficiency	% Difference	Prev.Calc. Efficiency
1	59.50	1.79e-02	3.20	1.84e-02	-0.47	1.84e-02
2	88.04	4.88e-02	-3.92	4.69e-02	0.94	4.74e-02
3	122.06	6.53e-02	2.12	6.67e-02	-0.05	6.67e-02
4	165.85	6.41e-02	2.07	6.55e-02	-1.14	6.48e-02
5	279.00	4.75e-02	-4.01	4.57e-02	-1.35	4.51e-02
6	391.68	3.46e-02	-1.47	3.41e-02	-0.96	3.38e-02
7	661.64	2.20e-02	-2.81	2.14e-02	-0.17	2.13e-02
8	898.02	1.55e-02	4.91	1.63e-02	0.30	1.63e-02
9	1173.21	1.26e-02	1.35	1.28e-02	0.73	1.29e-02
10	1332.48	1.14e-02	0.68	1.14e-02	0.93	1.15e-02
11	1836.01	8.51e-03	0.81	8.58e-03	1.43	8.70e-03

Calibration Results Saved.

Efficiency Calibration Verification

Geo. 11 Std # 589

Det. # 4

MCG/22/04

FROM CALIBRATION CERTIFICATE				FROM ANALYTICS.LIB			EXPECTED ACTIVITY			MEASURED ACTIVITY		
Isotope	KeV	Half Life(y)	Gammas/Sec.	Gamma Fraction:	Mass of Standard			DPS	pCi/g	pCi/g	% Recovery	Pass ?
Am-241	59.9	432.0000	1345	0.3590	100	g	Am-241	3746.5	1012.6	1020	100.7%	Pass
Cd-109	88	1.2666	1881	0.0361			Cd-109	52105.3	14082.5	15100	107.2%	Pass
Co-57	122	0.7441	1030	0.8551			Co-57	1204.5	325.6	319	98.0%	Pass
Ce-139	166	0.3768	1402	0.8035			Ce-139	1744.9	471.6	>5 Halflives	>5 Halflives	>5 Halflives
Hg-203	279	0.1276	2980	0.7730			Hg-203	3855.1	1041.9	> 5 Halflives	> 5 Halflives	> 5 Halflives
Sn-113	392	0.3151	1860	0.6490			Sn-113	2865.9	774.6	> 5 Halflives	> 5 Halflives	> 5 Halflives
Cs-137	662	30.0000	1205	0.8512			Cs-137	1415.6	382.6	402	105.1%	Pass
Y-88	898	0.2919	4932	0.9340			Y-88	5280.5	1427.2	> 5 Halflives	> 5 Halflives	> 5 Halflives
Co-60	1173	5.2714	2360	1.0000			Co-60	2360.0	637.8	633	99.2%	Pass
Co-60	1332	5.2714	2381	1.0000			Co-60	2381.0	643.5	626	97.3%	Pass
Y-88	1836	0.2919	5162	0.9938			Y-88	5194.2	1403.8	> 5 Halflives	> 5 Halflives	> 5 Halflives

000433

041082D04.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0413010-4A Geo 11 Cal Ver (589)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	06/21/2004 14:34:58
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.61E+004 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.00E+002 g	Real Time	1869 Sec
Collection Efficiency	1.0000	Spc. File	.041082D04.SPC

Detector #: 4 (Detector 4)

Energy(keV)= -1.18 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/21/2004
FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	59.48	121.24	44687	461	152	5127	0.73	a	
2	73.55	149.34	104	90	72	1432	0.39	a	
3	87.95	178.14	33701	399	129	3370	0.74	a	HiResid
4	98.72	199.65	85	70	56	857	0.40	a	
5	122.05	246.27	7543	214	102	2116	0.81	a	
6	136.47	275.10	1066	136	99	1956	0.87	a	
7	150.43	303.00	12	84	69	1174	0.42	a	NET< CL
8	165.83	333.76	668	128	97	1878	0.78	a	
9	310.52	622.93	153	112	90	1618	0.88	a	
10	322.64	647.16	83	123	100	1858	1.05	a	NET< CL
11	336.81	675.47	79	76	61	916	0.54	a	
12	415.51	832.77	126	115	92	1806	0.98	a	
13	511.42	1024.43	76	97	78	1295	1.06	a	NET< CL
14	616.10	1233.65	75	95	77	1160	1.10	a	NET< CL
15	661.70	1324.78	45579	441	90	1413	1.52	a	
16	843.88	1688.87	84	84	67	1046	0.90	a	
17	1114.87	2230.44	81	82	66	1017	1.07	a	
18	1173.33	2347.29	36507	394	78	1081	2.14	a	HiResid
19	1332.51	2665.41	32236	363	44	335	2.24	a	HiResid
20	1835.92	3671.47	43	38	29	124	3.09	a	

041082D04.SPC Analyzed by

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SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Background File:. . . . . DET040618.BKG (0418003-24 Weekly Background)

Bkg.File Detector #: 4

BACKGROUND SUBTRACT RESULTS

PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
2	73.55	104	90	72	101	90	72	
7	150.43	12	84	69	11	84	69	NET<CL
13	511.42	76	97	78	34	97	79	NET<CL

041082D04.SPC Analyzed by

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SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Geo.11 / Solid

Sample ID: 0413010-4A Geo 11 Cal Ver (589)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	06/21/2004 14:34:58
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.61e+004 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.00e+002 g	Real Time	1869 Sec
Collection Efficiency	1.0000	Spectrum File	.041082D04.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 4 (Detector 4)

Efficiency File: (D04)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[4.98E-03*En^-3.26E+00 + 6.77E+01*En^8.96E-01] 06/21/2004

Library File: . . . .ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54		1.02E+03 +- 1.05E+01	6.98E+00	3.46E+00	3.79E+06
Cd-109	88.02		1.51E+04 +- 1.79E+02	1.17E+02	5.80E+01	1.11E+04
Co-57	122.07		3.19E+02 +- 9.04E+00	8.78E+00	4.33E+00	6.50E+03
Ce-139	165.85		4.52E+02 +- 8.67E+01	1.32E+02	6.52E+01	3.30E+03
Cs-137	661.62		4.02E+02 +- 3.89E+00	1.61E+00	7.95E-01	2.64E+05
Co-60	Average:x		6.30E+02 +- 4.91E+00	. . . .	. . . . .	4.62E+04
	1173.21		6.33E+02 +- 6.83E+00	2.75E+00	1.35E+00	4.62E+04
	1332.48		6.26E+02 +- 7.05E+00	1.77E+00	8.61E-01	4.62E+04
Hg-203	279.18		MDA	8.76E+06	4.33E+06	1.12E+03
Sn-113	391.68		MDA	1.07E+03	5.30E+02	2.76E+03
Y-88	898.02		MDA	2.71E+03	1.34E+03	2.56E+03

MEASURED TOTAL: 1.79E+04 +- 2.94E+02 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
2	73.55	149.34	101	90	72	1432	0.39	Unknown
4	98.72	199.65	85	70	56	857	0.40	Unknown
6	136.47	275.10	1066	136	99	1956	0.87	Unknown
7	150.43	303.00	11	84	69	1174	0.42	Deleted
9	310.52	622.93	153	112	90	1618	0.88	1333DEsc

041082D04.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
10	322.64	647.16	83	123	100	1858	1.05	Deleted
11	336.81	675.47	79	76	61	916	0.54	Unknown
12	415.51	832.77	126	115	92	1806	0.98	Unknown
13	511.42	1024.43	34	97	79	1295	1.06	Deleted
14	616.10	1233.65	75	95	77	1160	1.10	Deleted
16	843.88	1688.87	84	84	67	1046	0.90	Unknown
17	1114.87	2230.44	81	82	66	1017	1.07	Unknown
20	1835.92	3671.47	43	38	29	124	3.09	Unknown

040006D07.SPC Analyzed by TT

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Inc.
GammaScan

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Geo.11 / Solid

Sample ID: 0413010-7 GEO 11 CALIB. (719)

Sampling Start:	07/01/2003 12:00:00	Counting Start:	01/02/2004 13:19:50
Sampling Stop:	07/01/2003 12:00:00	Decay Time.	4.44E+003 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	5400 Sec
Sample Size	1.00E+002 g	Real Time	6174 Sec
Collection Efficiency	1.0000	Spc. File	.040006D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.01 + 0.501*Ch + 2.77E-07*Ch^2 +-1.77E-11*Ch^3 01/02/2004
FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 95/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	59.52	122.88	442320	1455	486	47523	0.85	a	
2	66.79	137.39	20155	997	786	68455	2.24	a	HiResid Wide Pk
3	70.55	144.92	25125	897	690	58676	2.02	b	HiResid
4	72.80	149.40	20996	778	594	48897	1.63	c	HiResid
5	74.86	153.51	14602	873	690	58676	1.92	d	HiResid
6	78.13	160.04	22155	1112	881	78235	2.59	e	HiResid
7	82.43	168.63	22173	1001	786	68455	2.21	f	HiResid
8	84.83	173.43	23290	948	738	63566	2.17	g	HiResid
9	87.90	179.55	521030	1523	398	29338	1.04	h	HiResid
10	109.61	222.90	501	399	326	21483	0.88	a	
11	122.00	247.64	218772	1022	338	21049	0.92	a	HiResid
12	136.39	276.38	26107	493	307	17358	0.94	a	
13	165.79	335.07	155533	859	279	14405	0.97	a	
14	199.07	401.52	4158	318	239	11489	0.86	a	
15	203.71	410.78	1118	339	273	13787	0.99	b	
16	254.98	513.13	3979	324	245	11127	1.00	a	
17	279.09	561.24	38208	503	260	11571	1.07	a	
18	309.78	622.51	271	295	241	9913	1.12	a	HiResid
19	391.58	785.77	88022	654	226	8707	1.19	a	
20	428.14	858.71	181	227	186	7270	0.95	a	NET< CL
21	511.16	1024.37	1396	396	320	13773	2.23	a	Wide Pk
22	619.22	1239.95	170	196	159	5365	0.92	a	
23	661.62	1324.51	104345	700	222	8547	1.43	a	

040006D07.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
24	683.59	1368.35	177	207	169	6018	0.96	a
25	813.97	1628.37	1831	249	192	6806	1.64	a
26	897.95	1795.82	90194	652	210	8111	1.62	a HiResid
27	1173.19	2344.53	108612	683	148	3848	1.86	a HiResid
28	1194.73	2387.45	308	220	179	4879	2.75	a
29	1325.14	2647.37	2128	225	169	3833	3.37	a HiResid Wide Pk
30	1332.41	2661.86	97803	639	109	2190	1.99	b HiResid
31	1353.67	2704.22	164	132	106	2091	1.90	a
32	1835.81	3664.80	50913	457	61	610	2.41	a HiResid
33	1850.49	3694.04	103	79	63	621	2.58	a

040006D07.SPC Analyzed by

****

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

****

Sample ID: 0413010-7 GEO 11 CALIB. (719)
Stds. Match Tolerance: 2.00 keV

Detector Number: 07 Calibration Date. . . 01/02/2004 13:19:50
Geometry File (D07)(Sh11).EFF ID. Geo 11 Eff Cal
Amount of Std. in Calib. Source: 100.000000 gm

Eff = 1 / [1.41e-01*En^-1.49e+00 + 9.67e+01*En^ 9.61e-01]
(Where En = Energy in MeV)) (Exponential)

Pk. #	Energy (kev)	Measured Efficiency	% Difference	Calculated Efficiency	% Difference	Prev.Calc. Efficiency
1	59.50	6.24e-02	0.01	6.24e-02	-5.30	5.93e-02
2	88.04	6.79e-02	0.09	6.80e-02	-8.10	6.29e-02
3	122.06	6.25e-02	-0.63	6.21e-02	-7.33	5.79e-02
4	165.85	5.12e-02	1.22	5.18e-02	-5.68	4.91e-02
5	279.00	3.45e-02	-1.21	3.41e-02	-3.42	3.30e-02
6	391.68	2.52e-02	-0.42	2.51e-02	-2.65	2.44e-02
7	661.64	1.54e-02	-0.62	1.53e-02	-2.21	1.50e-02
8	898.02	1.09e-02	4.57	1.14e-02	-2.18	1.12e-02
9	1173.21	8.89e-03	-0.41	8.86e-03	-2.23	8.66e-03
10	1332.48	7.93e-03	-1.11	7.84e-03	-2.27	7.67e-03
11	1836.01	5.90e-03	-2.36	5.76e-03	-2.40	5.63e-03

Calibration Results Saved.

Efficiency Calibration Verification

Geo. 11 Std # 589

Det. # 7

FROM CALIBRATION CERTIFICATE				FROM ANALYTICS.LIB		EXPECTED ACTIVITY			MEASURED ACTIVITY		
Isotope	KeV	Half Life(y)	Gammas/Sec.	Gamma Fraction:	Mass of Standard		DPS	pCi/g	pCi/g	% Recovery	Pass ?
Am-241	59.9	432.0000	1345	0.3590	100 g	Am-241	3746.5	1012.6	1030	101.7%	Pass
Cd-109	88	1.2666	1881	0.0361		Cd-109	52105.3	14082.5	13500	95.9%	Pass
Co-57	122	0.7441	1030	0.8551		Co-57	1204.5	325.6	331	101.7%	Pass
Ce-139	166	0.3768	1402	0.8035		Ce-139	1744.9	471.6	470	99.7%	Pass
Hg-203	279	0.1276	2880	0.7730		Hg-203	3855.1	1041.9	> 5 Halflives	> 5 Halflives	> 5 Halflives
Sn-113	392	0.3151	1660	0.6490		Sn-113	2865.9	774.6	> 5 Halflives	> 5 Halflives	> 5 Halflives
Cs-137	662	30.0000	1205	0.8512		Cs-137	1415.6	382.6	385	100.6%	Pass
Y-88	898	0.2919	4932	0.9340		Y-88	5280.5	1427.2	> 5 Halflives	> 5 Halflives	> 5 Halflives
Co-60	1173	5.2714	2360	1.0000		Co-60	2360.0	637.8	629	98.6%	Pass
Co-60	1332	5.2714	2381	1.0000		Co-60	2381.0	643.5	642	99.8%	Pass
Y-88	1836	0.2919	5152	0.9938		Y-88	5194.2	1403.8	> 5 Halflives	> 5 Halflives	> 5 Halflives

000744

040188D07.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Inc.
GammaScan

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Geo.11 / Solid

Sample ID: 0413010-S7 GEO 11 CAL VER (589)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	02/02/2004 12:46:21
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.27E+004 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	1800 Sec
Sample Size	1.00E+002 g	Real Time	1898 Sec
Collection Efficiency	1.0000	Spc. File	.040188D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.04 + 0.501*Ch + 1.33E-08*Ch^2 + 4.60E-11*Ch^3 02/02/2004

FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 95/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	59.47	122.81	153859	831	226	10265	0.85 a	
2	87.97	179.72	53832	490	128	3318	0.86 a	
3	98.84	201.40	92	82	66	1057	0.45 a	
4	102.51	208.73	116	132	107	2114	1.05 b	
5	121.93	247.51	10418	239	102	1920	0.93 a	
6	136.35	276.29	1126	126	88	1553	0.82 a	
7	165.73	334.95	1113	134	95	1679	1.04 a	
8	258.90	520.94	87	101	82	1353	0.83 a	
9	262.48	528.10	86	101	82	1353	0.88 b	
10	377.74	758.17	47	93	76	1158	0.87 a	NET< CL
11	381.69	766.05	50	80	65	927	0.71 b	NET< CL
12	391.41	785.44	260	122	97	1597	1.13 a	
13	661.19	1323.86	31524	368	80	1124	1.43 a	
14	819.99	1640.67	76	81	65	923	1.07 a	
15	896.91	1794.10	171	100	79	1284	1.37 a	
16	1172.41	2343.41	26385	333	60	631	1.85 a	
17	1331.57	2660.57	23830	311	28	145	1.99 a	
18	1835.35	3663.37	107	26	13	35	1.78 a	

040188D07.SPC Analyzed by

****

SEEKER B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Inc.
GammaScan

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Background File:. . . . . DET070130.BKG (0413012-47 Weekly Bkg.)

Bkg.File Detector #: 7

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BACKGROUND SUBTRACT RESULTS

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PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN-CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN-CERTAINTY	NEW CR.LEVEL	FLAG
1	59.47	153859	831	226	153858	831	226	
2	87.97	53832	490	128	53831	490	128	

040188D07.SPC Analyzed by

****

SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Inc.
GammaScan

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Geo.11 / Solid

Sample ID: 0413010-S7 GEO 11 CAL VER (589)

Sampling Start:	07/01/2001 12:00:00	Counting Start:	02/02/2004 12:46:21
Sampling Stop:	07/01/2001 12:00:00	Decay Time.	2.27e+004 Hrs
Buildup Time.	0.00e+000 Hrs	Live Time	1800 Sec
Sample Size	1.00e+002 g	Real Time	1898 Sec
Collection Efficiency	1.0000	Spectrum File	.040188D07.SPC
Cr. Level Confidence Interval:	95 %	Det. Limit Confidence Interval:	95 %

Detector #: 7 (Detector 7)

Efficiency File: (D07)(Sh11).EFF (Geo 11 Eff Cal)

Eff.=1/[1.41E-01*En^-1.49E+00 + 9.67E+01*En^9.61E-01] 01/02/2004

Library File: . . . .ANALYTICAL.LIB (Analytical)

MEASURED or MDA CONCENTRATIONS

Nuclide	ENERGY (keV)	NET	Concentration (pCi/g)	MDA	Critical Level	Halflife (hrs)
Am-241	59.54		1.03E+03 +- 5.59E+00	3.05E+00	1.52E+00	3.79E+06
Cd-109	88.02		1.35E+04 +- 1.23E+02	6.52E+01	3.23E+01	1.11E+04
Co-57	122.07		3.31E+02 +- 7.59E+00	6.56E+00	3.24E+00	6.50E+03
Ce-139	165.85		4.70E+02 +- 5.64E+01	8.16E+01	4.02E+01	3.30E+03
Cs-137	661.62		3.85E+02 +- 4.50E+00	2.00E+00	9.82E-01	2.64E+05
Co-60	Average:x		6.35E+02 +- 5.76E+00	. . . .	. . . .	4.62E+04
	1173.21		6.29E+02 +- 7.94E+00	2.92E+00	1.43E+00	4.62E+04
	1332.48		6.42E+02 +- 8.36E+00	1.58E+00	7.54E-01	4.62E+04
Hg-203	279.18		MDA	1.31E+06	6.43E+05	1.12E+03
Sn-113	391.68		MDA	3.79E+02r	1.86E+02	2.76E+03
Y-88	898.02		MDA	8.11E+02r	3.96E+02	2.56E+03

MEASURED TOTAL: 1.64E+04 +- 2.03E+02 pCi/g

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
3	98.84	201.40	92	82	66	1057	0.45	Unknown
4	102.51	208.73	116	132	107	2114	1.05	Unknown
6	136.35	276.29	1126	126	88	1553	0.82	Unknown
8	258.90	520.94	87	101	82	1353	0.83	Unknown
9	262.48	528.10	86	101	82	1353	0.88	Unknown

040188D07.SPC Analyzed by

UNKNOWN,SUM or ESCAPE PEAKS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
10	377.74	758.17	47	93	76	1158	0.87	Deleted
11	381.69	766.05	50	80	65	927	0.71	Deleted
12	391.41	785.44	260	122	97	1597	1.13	Unknown
14	819.99	1640.67	76	81	65	923	1.07	1332SEsc
15	896.91	1794.10	171	100	79	1284	1.37	Unknown
18	1835.35	3663.37	107	26	13	35	1.78	Unknown

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

PAI ID 0718
recd 8-205-03

66352-307

1.0 Liter Solid in 138G GA-MA Beaker

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration date: July 1, 2003 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	1304	3.0
Cd-109	88	462.6	d	1862	3.3
Co-57	122	271.79	d	1032	2.8
Ce-139	166	137.6	d	1419	2.8
Hg-203	279	46.61	d	3194	2.7
Sn-113	392	115.1	d	1960	2.6
Cs-137	662	30.07	y	1260	3.0
Y-88	898	106.6	d	5060	2.6
Co-60	1173	5.2714	y	2402	2.7
Co-60	1332	5.2714	y	2427	2.6
Y-88	1836	106.6	d	5287	2.6

P O NUMBER EW060303, Item 2

SOURCE PREPARED BY: M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED: W.M. Mitz 8-1-03

This standard will expire one year after the calibration date.

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318-U.S.A.

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Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS
BATCH 113

CALIBRATION DATE: JULY 1, 2003 12:00 EST

ISOTOPE	ENERGY (keV)	CALIBRATION METHOD[1]	STATISTICS[2]	CALIBRATION[2]	PEAK FITTING[2]	GEOMETRY[2]	IMPURITIES[2]	WEIGHING[2]	COMBINED STANDARD UNCERTAINTY[2]	RELATIVE EXPANDED UNCERTAINTY[2] (K=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	0.93	0.71	0.7	0	0.2	1.40	2.8
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	0.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	0.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

OPTIONAL ADDITIONAL ISOTOPES

Pb-210	46.5	4ΠLS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4ΠLS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

[1]Calibration Methods:

- 4ΠLS (4 pi Liquid Scintillation Counting)
- HPGe (High Purity Germanium Gamma Ray Spectrometer)
- IC (Gamma Ray Ionization Chamber)

[2]As Percent (%)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

Analytics, Incorporated
Atlanta, Georgia

is a participant for the period January 1, 2003, through December 31, 2003, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory
(over)

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

BAI 0719
rec'd 8-05-03

66353-307

100 Grams of Sand in 16 Ounce PP Jar

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: July 1, 2003 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	1313	3.0
Cd-109	88	462.6	d	1874	3.3
Co-57	122	271.79	d	1039	2.8
Ce-139	166	137.6	d	1428	2.8
Hg-203	279	46.61	d	3214	2.7
Sn-113	392	115.1	d	1973	2.6
Cs-137	662	30.07	y	1269	3.0
Y-88	898	106.6	d	5093	2.6
Co-60	1173	5.2714	y	2417	2.7
Co-60	1332	5.2714	y	2442	2.6
Y-88	1836	106.6	d	5321	2.6

Approximately 55 mL of customer supplied sand.
P O NUMBER EW060303, Item 3

SOURCE PREPARED BY: M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED: M. Mty 8-1-03

This standard will expire one year after the calibration date.

ANALYTICS

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email: analytics@mindspring.com
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ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS
BATCH 113

CALIBRATION DATE: JULY 1, 2003 12:00 EST

ISOTOPE	ENERGY (keV)	CALIBRATION METHOD[1]	STATISTICS[2]	CALIBRATION[2]	PEAK FITTING[2]	GEOMETRY[2]	IMPURITIES[2]	WEIGHING[2]	COMBINED STANDARD UNCERTAINTY[2]	RELATIVE EXPANDED UNCERTAINTY[2] (K=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	0.93	0.71	0.7	0	0.2	1.40	2.8
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	0.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	0.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

OPTIONAL ADDITIONAL ISOTOPES

Pb-210	46.5	4ΠLS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4ΠLS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

[1]Calibration Methods:

- 4ΠLS (4 pi Liquid Scintillation Counting)
- HPGe (High Purity Germanium Gamma Ray Spectrometer)
- IC (Gamma Ray Ionization Chamber)

[2]As Percent (%)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

Analytics, Incorporated
Atlanta, Georgia

is a participant for the period January 1, 2003, through December 31, 2003, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory
(over)

000454

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

PAID 677
recd 4-30-03

66010-307

500 Grams of Sand in 500 mL PP Jar

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: April 1, 2003 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	1408	3.0
Cd-109	88	462.6	d	1974	3.3
Co-57	122	271.79	d	1101	2.8
Ce-139	166	137.6	d	1479	2.7
Hg-203	279	46.61	d	3463	2.7
Sn-113	392	115.1	d	2037	2.6
Cs-137	662	30.07	y	1388	3.0
Y-88	898	106.6	d	5310	2.6
Co-60	1173	5.2714	y	2583	2.6
Co-60	1332	5.2714	y	2612	2.6
Y-88	1836	106.6	d	5550	2.6

290 mL of customer supplied sand.
P O NUMBER EW041003, Item 1

SOURCE PREPARED BY: M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED: [signature] 4-29-03

This standard will expire one year after the calibration date.

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318-U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837
email: analytics@mindspring.com
www.analyticsinc.com

ANALYSIS OF UNCERTAINTY FOR

MIXED GAMMA STANDARDS
BATCH 112

CALIBRATION DATE: APRIL 1, 2003 12:00 EST

ISOTOPE	ENERGY (keV)	CALIBRATION METHOD*	STATISTICS	CALIBRATION	PEAK FITTING	GEOMETRY	IMPURITIES	WEIGHING	COMBINED STANDARD UNCERTAINTY	RELATIVE EXPANDED UNCERTAINTY (K=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.1	1.63	3.3
Co-57	122	HPGe	0.23	0.93	0.71	0.7	0	0.1	1.39	2.8
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.1	1.37	2.7
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.1	1.36	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.1	1.29	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.1	1.48	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.1	1.28	2.6
Co-60	1173	HPGe	0.31	0.97	0.45	0.7	0	0.1	1.32	2.6
Co-60	1332	HPGe	0.33	0.93	0.48	0.7	0	0.1	1.31	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.1	1.30	2.6

OPTIONAL ADDITIONAL ISOTOPES

Pb-210	46.5	4ΠLS	0.33	1.1	0	0.9	0.30	0.1	1.49	3.0
Am-241	59.5	4ΠLS	0.33	1.1	0	0.9	0.30	0.1	1.49	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.1	1.35	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.1	1.33	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.1	1.33	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.1	1.33	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.1	1.33	2.7

*Calibration Methods:
- 4ΠLS (4 pi Liquid Scintillation Counting)
- HPGe (High Purity Germanium Gamma Ray Spectrometer)
- IC (Gamma Ray Ionization Chamber)

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

Analytics, Incorporated
Atlanta, Georgia

is a participant for the period January 1, 2003, through December 31, 2003, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

Lisa R. Karam, Group Leader
Radioactivity Group
Physics Laboratory
(over)

000457

ANALYTICS

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SHIPPER'S DECLARATION

Shipment number 20080-11346 contains the following isotopes:

FORM: Solid

RADIONUCLIDE	QUANTITY IN MICROCURIES*
Cd-109	1.680
Co-57	0.040
Ce-139	0.057
Hg-203	0.131
Sn-113	0.097
Cs-137	0.050
Y-88	0.174
Co-60	0.080
Am-241	0.121
TOTAL:	2.430

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for radioactive material, excepted package-limited quantity of material, UN2910.

SHIPPED TO: Paragon Analytics

DATE: 4·29·03

TC Kasali

*Quantities stated are approximate and for shipping purposes only. For certified quantities see Certificate of Calibration for each radioactive standard.

ANALYTICS

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MSDS

IMPORTANT SAFETY INFORMATION
DO NOT DISCARD
PLEASE ROUTE TO COMPANY SAFETY OFFICER

Be advised that radioactive materials are not included in the notification requirements of OSHA Hazard Communication Standard (29CFR1910.1200). This does not minimize the hazards and control requirements associated with radioactive materials, which are subject to various federal and state regulations.

Robert C. McFarland, RSO
Analytics, Inc.

041334D01.SPC Analyzed by MC

****

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

****

Sample ID: 0413002-1 FWHM Cal (718)
Stds. Match Tolerance: 2.00 keV

Detector Number: 01 Calibration Date. . . 06/16/2004 15:56:41

FWHM(keV) = 0.88 + 0.103*En +-3.12e-03*En^2 + 4.90e-05*En^3
(Where En = SQR(Energy in keV))

Pk. #	Energy (kev)	Measured FWHM(keV)	% Diff.	Calculated FWHM(keV)	% Diff.	Prev.Calc. FWHM(kev)
1	59.50	1.497	0.89	1.510	-0.12	1.508
2	88.04	1.583	1.78	1.611	-4.00	1.549
3	122.06	1.767	-3.79	1.703	-6.73	1.596
4	165.85	1.742	2.87	1.794	-8.58	1.652
5	279.00	2.069	-5.54	1.960	-9.47	1.791
6	391.68	2.018	2.94	2.079	-8.19	1.922
7	661.64	2.270	1.50	2.304	-3.65	2.223
8	898.02	2.449	1.70	2.491	-0.49	2.479
9	1173.21	2.787	-2.23	2.726	1.58	2.770
10	1332.48	2.894	-0.60	2.877	2.05	2.937
11	1836.01	3.415	0.57	3.434	0.64	3.457

000467

040584D02.SPC Analyzed by MC

****

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

****

Sample ID: 0413002-2 FWHM Calibration (718)
Stds. Match Tolerance: 2.00 keV

Detector Number: 02 Calibration Date. . . 04/13/2004 11:04:17

FWHM(keV) = 0.58 + 0.013*En + 6.82e-04*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

Pk. #	Energy (kev)	Measured FWHM(keV)	% Diff.	Calculated FWHM(keV)	% Diff.	Prev.Calc. FWHM(kev)
1	59.50	0.759	-5.64	0.719	4.53	0.753
2	88.04	0.765	-0.67	0.760	4.44	0.795
3	122.06	0.753	6.34	0.804	4.33	0.841
4	165.85	0.867	-1.07	0.858	4.18	0.895
5	279.00	0.951	3.37	0.984	3.80	1.023
6	391.68	1.109	-0.76	1.100	3.45	1.140
7	661.64	1.378	-1.27	1.360	2.76	1.399
8	898.02	1.573	0.20	1.576	2.29	1.613
9	1173.21	1.825	-0.36	1.819	1.84	1.853
10	1332.48	1.974	-0.91	1.956	1.61	1.988
11	1836.01	2.363	0.74	2.381	1.04	2.406

Calibration Results Saved.

040559D03.SPC Analyzed by MC

****

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

****

Sample ID: 0413002-3 FWHM Calibration (719)
Stds. Match Tolerance: 2.00 keV

Detector Number: 03 Calibration Date. . . 04/13/2004 11:49:25

FWHM(keV) = 0.77 + 0.011*En + 9.52e-04*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

Pk. #	Energy (kev)	Measured FWHM(keV)	% Diff.	Calculated FWHM(keV)	% Diff.	Prev.Calc. FWHM(kev)
1	59.50	0.915	-0.93	0.907	-1.28	0.896
2	88.04	0.936	1.73	0.953	-1.88	0.935
3	122.06	0.973	3.07	1.003	-2.53	0.979
4	165.85	1.077	-1.14	1.065	-3.29	1.031
5	279.00	1.280	-5.33	1.215	-4.92	1.158
6	391.68	1.335	1.57	1.357	-6.24	1.277
7	661.64	1.678	0.06	1.679	-8.63	1.546
8	898.02	1.915	1.82	1.951	-10.15	1.771
9	1173.21	2.291	-1.37	2.260	-11.53	2.027
10	1332.48	2.417	0.79	2.437	-12.19	2.172
11	1836.01	2.995	-0.27	2.986	-13.82	2.624

Calibration Results Saved.

041069D04.SPC Analyzed by MC

****

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

****

Sample ID: 0413002-4 FWHM CALIB. (718)
Stds. Match Tolerance: 2.00 keV

Detector Number: 04 Calibration Date. . . 06/18/2004 14:11:56

FWHM(keV) = 0.58 + 0.009*En + 1.00e-03*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

Pk. #	Energy (kev)	Measured FWHM(keV)	% Diff.	Calculated FWHM(keV)	% Diff.	Prev.Calc. FWHM(kev)
1	59.50	0.728	-2.96	0.707	-0.84	0.701
2	88.04	0.759	-1.18	0.751	-0.91	0.744
3	122.06	0.813	-1.73	0.799	-1.27	0.789
4	165.85	0.778	9.44	0.859	-1.94	0.843
5	279.00	1.030	-2.41	1.006	-4.01	0.967
6	391.68	1.153	-0.62	1.146	-6.12	1.080
7	661.64	1.452	1.14	1.469	-10.65	1.327
8	898.02	1.802	-3.38	1.743	-13.98	1.529
9	1173.21	2.051	0.26	2.056	-17.25	1.754
10	1332.48	2.194	1.86	2.236	-18.90	1.880
11	1836.01	2.807	-0.39	2.796	-23.27	2.268

Calibration Results Saved.

006463

031701D07.SPC Analyzed by 77

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SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

****

Sample ID: 0313003-7 FWHM Cal (677)
Stds. Match Tolerance: 2.00 keV

Detector Number: 07 Calibration Date. . . 12/09/2003 11:17:20

FWHM(keV) = 0.76 + 0.005*En + 7.78e-04*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

Pk. #	Energy (kev)	Measured FWHM(keV)	% Diff.	Calculated FWHM(keV)	% Diff.	Prev.Calc. FWHM(kev)
1	59.50	0.853	-1.16	0.843	-20.51	0.700
2	88.04	0.873	0.01	0.873	-11.62	0.782
3	122.06	0.906	0.16	0.907	-5.54	0.860
4	165.85	0.945	0.52	0.950	-1.03	0.940
5	279.00	1.039	1.58	1.056	3.76	1.097
6	391.68	1.159	-0.08	1.158	4.85	1.217
7	661.64	1.412	-1.15	1.396	3.67	1.450
8	898.02	1.598	0.15	1.600	1.92	1.632
9	1173.21	1.858	-1.29	1.834	0.45	1.843
10	1332.48	1.941	1.40	1.969	-0.01	1.969
11	1836.01	2.393	-0.12	2.391	0.32	2.398

031894D08.SPC Analyzed by TT

****

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

****

Sample ID: 0313003-8 FWHM Cal (677)
Stds. Match Tolerance: 2.00 keV

Detector Number: 08 Calibration Date. . . 12/29/2003 12:59:15

FWHM(keV) = 0.53 + 0.022*En + 6.21e-04*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

Pk. #	Energy (kev)	Measured FWHM(keV)	% Diff.	Calculated FWHM(keV)	% Diff.	Prev.Calc. FWHM(kev)
1	59.50	0.746	-0.37	0.743	13.43	0.858
2	88.04	0.862	-8.10	0.798	10.95	0.896
3	122.06	0.804	6.12	0.856	8.58	0.936
4	165.85	0.919	0.58	0.924	6.11	0.984
5	391.68	1.178	3.30	1.218	-1.96	1.195
6	661.64	1.515	0.21	1.518	-7.35	1.414
7	898.02	1.761	-0.12	1.759	-10.45	1.593
8	1173.21	2.058	-1.60	2.025	-13.05	1.792
9	1332.48	2.212	-1.75	2.174	-14.23	1.904
10	1836.01	2.590	1.48	2.628	-17.00	2.247

Calibration Results Saved.

040748D10.SPC Analyzed by MC

****

SEEKER C A L I B R A T I O N R E S U L T S Version 2.0.4

****

Sample ID: 0413002-10 FWHM CALIB. (718)
Stds. Match Tolerance: 2.00 keV

Detector Number: 10 Calibration Date. . . 05/21/2004 15:12:03

FWHM(keV) = 1.34 + -0.029*En + 2.72e-03*En^2 + 0.00e+00*En^3
(Where En = SQR(Energy in keV))

Pk. #	Energy (kev)	Measured FWHM(keV)	% Diff.	Calculated FWHM(keV)	% Diff.	Prev.Calc. FWHM(kev)
1	59.50	1.217	4.46	1.274	-10.54	1.152
2	88.04	1.309	-0.44	1.303	-8.38	1.203
3	122.06	1.364	-1.24	1.348	-6.61	1.264
4	165.85	1.450	-2.54	1.414	-5.10	1.345
5	279.00	1.682	-4.41	1.611	-3.28	1.560
6	391.68	1.755	4.01	1.829	-2.85	1.778
7	661.64	2.487	-3.97	2.392	-3.60	2.309
8	898.02	2.749	5.62	2.913	-4.81	2.779
9	1173.21	3.594	-1.59	3.538	-6.24	3.330
10	1332.48	3.912	-0.13	3.907	-7.01	3.651
11	1836.01	5.102	-0.16	5.094	-9.13	4.668

Gamma Spectroscopy

Quality Control Data

Weekly Background Checks

Gamma Spectrometer Calibration Log

Date: 6/18/04

Reviewed By/Date: MC 6-18-04

Det. No.	Out Of Service	Background		Source Check			Repeat Source Check			
		Started	OK	Started	OK	Failed Parameter(s)	OK	Failed Parameter(s)	Corrective Action Taken **	Removed from Service
1.		MC	MC	JP	JP					
2.		↓	↓	JP	JP					
3.		↓	↓	JP	JP					
4.		↓	↓	JP	/	1332FWHM	MC			
5.	MC	/	/	/	/					
6.	↓	/	/	/	/					
7.		MC	MC	JP	JP					
8.		↓	↓	JP	JP					
9.	MC	/	/	/	/					
10.		MC	MC	JP	JP					
11.										
12.										

.** Corrective Action:

278999 A

Form 754r9.frm (9/19/2001)

000463

041375D01.SPC Analyzed by MC

****

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

****

Weekly Background Check

Sample ID: 0418003-21 Weekly Background

Sampling Start:	06/18/2004 12:00:00	Counting Start:	06/18/2004 17:33:15
Sampling Stop:	06/18/2004 12:00:00	Decay Time.	5.55E+000 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	60000 Sec
Sample Size	1.00E+000 L	Real Time	60158 Sec
Collection Efficiency	1.0000	Spc. File	.041375D01.SPC

Detector #: 1 (Detector 1)

Energy(keV)= -1.17 + 0.501*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/18/2004
FWHM(keV) = 0.88 + 0.103*En +-3.12E-03*En^2 + 4.90E-05*En^3 06/16/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	53.84	109.89	160	161	131	3161	1.37	a	
2	63.37	128.92	354	178	143	3803	1.70	a	
3	66.05	134.27	675	169	133	3423	1.48	b	
4	92.72	187.54	954	155	116	2640	1.50	a	HiResid
5	139.67	281.33	432	115	88	1695	1.15	a	
6	143.41	288.81	168	110	88	1695	1.15	b	
7	185.62	373.13	827	159	122	2602	1.84	a	
8	198.29	398.43	662	122	91	1853	1.39	a	
9	238.43	478.62	567	128	97	2007	1.45	a	
10	295.28	592.19	90	92	74	1279	1.14	a	
11	337.80	677.12	80	106	86	1568	1.55	a	NET< CL
12	351.78	705.05	408	130	101	1898	2.03	a	
13	511.07	1023.24	4111	207	133	2460	3.22	a	
14	558.48	1117.95	393	110	85	1326	1.98	a	
15	569.22	1139.41	270	114	90	1437	2.17	b	
16	583.19	1167.32	261	112	89	1393	2.16	a	
17	598.55	1198.00	778	233	186	3498	5.16	a	HiResid Wide Pk
18	601.27	1203.44	704	294	238	4721	6.76	b	HiResid
19	609.15	1219.17	969	173	133	2519	3.13	c	HiResid
20	695.47	1391.61	165	138	111	1900	2.83	a	
21	727.13	1454.86	73	70	56	683	1.28	a	
22	803.34	1607.08	355	89	66	813	1.99	a	
23	860.34	1720.96	62	70	56	665	1.45	a	

000469

041375D01.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG	
24	898.15	1796.48	61	58	46	464	1.25	a	
25	911.40	1822.94	405	89	65	754	2.06	b	
26	962.64	1925.31	260	126	100	1204	4.04	a	Wide Pk
27	969.10	1938.22	250	75	56	578	1.95	b	
28	1001.47	2002.87	121	71	56	571	1.98	a	
29	1120.19	2240.03	108	96	77	884	2.94	a	
30	1377.92	2754.88	66	76	61	529	3.03	a	
31	1461.02	2920.88	1554	101	52	411	2.72	a	
32	1764.63	3527.36	196	55	39	250	2.38	a	

041375D01.SPC Analyzed by

****

SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

****

ID: 0418003-21 Weekly Background

Detector # 1 Background Q.C. Analysis for 06/18/2004 17:33:15

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
10	40-> 50 keV Bkg	9.499	Pass	Pass	N.A.
11	50-> 150 keV Bkg	63.137	Pass	Pass	N.A.
12	250-> 500 keV Bkg	77.429	Pass	Pass	N.A.
13	500->1000 keV Bkg	92.742	Pass	Pass	N.A.
14	1000->2000 keV Bkg	56.912	Pass	Pass	N.A.
15	150-> 250 keV Bkg	48.433	Pass	Pass	N.A.

Q.C. Results Saved.

041011D03.SPC Analyzed by MC

****

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

****

Weekly Background Check

Sample ID: 0418003-23 Weekly Background

Sampling Start:	06/18/2004 12:00:00	Counting Start:	06/18/2004 17:33:22
Sampling Stop:	06/18/2004 12:00:00	Decay Time.	5.56E+000 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	60000 Sec
Sample Size	1.00E+000 L	Real Time	60158 Sec
Collection Efficiency	1.0000	Spc. File	.041011D03.SPC

Detector #: 3 (Detector 3)

Energy(keV)= -0.80 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/18/2004

FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.47	94.48	154	83	65	780	0.94 a	
2	63.25	128.03	158	76	59	710	0.86 a	
3	66.46	134.45	143	96	76	994	1.17 b	
4	69.50	140.51	30	62	51	568	0.73 c	NET< CL
5	72.24	146.00	13	51	42	426	0.46 d	NET< CL
6	77.26	156.02	118	74	59	692	0.83 a	
7	84.44	170.39	132	97	77	949	1.26 a	
8	87.22	175.94	57	58	46	475	0.58 b	
9	92.71	186.91	602	94	66	749	1.11 a	
10	139.96	281.36	166	98	78	890	1.39 a	
11	143.37	288.18	63	62	50	494	0.89 b	
12	185.89	373.17	287	78	58	613	0.95 a	
13	198.52	398.41	169	81	63	681	1.11 a	
14	238.83	478.99	224	73	55	558	0.94 a	
15	295.39	592.03	94	51	39	338	0.90 a	
16	338.31	677.83	70	54	42	369	1.04 a	
17	352.10	705.39	126	60	46	412	1.11 a	
18	511.01	1023.04	1543	112	66	642	2.50 a	Wide Pk
19	558.77	1118.49	125	42	30	203	0.98 a	
20	569.88	1140.71	51	46	36	284	1.17 a	
21	582.96	1166.85	131	105	84	773	3.98 a	Wide Pk
22	596.64	1194.19	76	74	59	560	2.06 a	
23	598.86	1198.63	63	65	52	474	1.85 b	
24	609.60	1220.10	101	60	46	417	1.40 a	

041011D03.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	669.80	1340.43	53	53	42	315	1.82	a
26	693.92	1388.63	90	82	66	611	2.62	a
27	803.11	1606.90	98	49	36	257	1.79	a
28	911.75	1824.06	113	46	34	202	2.11	a
29	961.71	1923.92	72	43	33	200	1.93	a
30	1460.71	2921.34	206	42	25	109	2.15	a
31	1764.93	3529.43	38	36	28	111	3.05	a

041011D03.SPC Analyzed by

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SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

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ID: 0418003-23 Weekly Background

Detector # 3 Background Q.C. Analysis for 06/18/2004 17:33:22

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
10	50-> 150 keV Bkg	23.758	Pass	Pass	N.A.
11	150-> 250 keV Bkg	19.329	Pass	Pass	N.A.
12	250-> 500 keV Bkg	28.687	Pass	Pass	N.A.
13	500->1000 keV Bkg	29.829	Pass	Pass	N.A.
14	1000->2000 keV Bkg	16.986	Pass	Pass	N.A.
15	40-> 50 keV Bkg	3.052	Pass	Pass	N.A.

Q.C. Results Saved.

040930D07.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Weekly Background Check

Sample ID: 0418003-27 Weekly Background

Sampling Start:	06/18/2004 12:00:00	Counting Start:	06/18/2004 17:33:29
Sampling Stop:	06/18/2004 12:00:00	Decay Time.	5.56E+000 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	60000 Sec
Sample Size	1.00E+000 L	Real Time	60136 Sec
Collection Efficiency	1.0000	Spc. File	.040930D07.SPC

Detector #: 7 (Detector 7)

Energy(keV) = -2.20 + 0.501*Ch +-3.64E-07*Ch^2 + 1.41E-10*Ch^3 06/18/2004
FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG	
1	46.42	97.02	489	89	63	742	0.92	a	
2	53.23	110.61	78	49	38	350	0.42	a	
3	60.95	126.00	14	48	39	382	0.42	a	NET< CL
4	63.20	130.49	373	87	64	764	0.98	b	
5	66.31	136.71	132	81	64	764	0.99	c	
6	74.82	153.70	108	94	75	972	1.08	a	
7	77.01	158.06	60	63	50	555	0.59	b	
8	84.56	173.13	165	96	76	919	1.29	a	
9	87.37	178.74	67	67	53	574	0.90	b	
10	92.63	189.23	523	79	53	560	0.87	a	
11	120.75	245.35	45	76	62	653	1.09	a	NET< CL
12	139.76	283.30	73	62	49	493	0.78	a	
13	185.67	374.94	247	66	47	453	0.85	a	
14	198.30	400.15	143	82	65	667	1.29	a	
15	218.16	439.80	48	49	38	326	0.71	a	
16	238.61	480.63	266	70	51	472	0.95	a	
17	295.25	593.71	42	52	41	340	0.83	a	
18	351.77	706.54	86	60	47	370	1.18	a	
19	375.18	753.28	40	39	31	210	0.64	a	
20	511.11	1024.68	1140	111	72	640	2.56	a	Wide Pk
21	537.62	1077.61	23	49	40	290	1.26	a	NET< CL
22	558.39	1119.07	144	50	36	235	1.34	a	
23	570.10	1142.46	31	32	24	146	0.71	a	
24	583.31	1168.84	84	48	36	241	1.28	a	

040930D07.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	609.26	1220.64	78	50	38	288	1.19 a	
26	669.49	1340.88	40	42	33	202	1.38 a	
27	802.93	1607.22	96	46	34	201	1.86 a	
28	859.58	1720.25	33	51	41	265	2.13 a	NET< CL
29	911.68	1824.21	31	50	40	242	2.42 a	NET< CL
30	961.64	1923.86	30	37	29	160	1.46 a	
31	1460.99	2918.76	125	37	24	102	2.27 a	

040930D07.SPC Analyzed by

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SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

****

ID: 0418003-27 Weekly Background

Detector # 7 Background Q.C. Analysis for 06/18/2004 17:33:29

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
10	50-> 150 keV Bkg	23.285	Pass	Pass	N.A.
11	150-> 250 keV Bkg	18.020	Pass	Pass	N.A.
12	250-> 500 keV Bkg	26.695	Pass	Pass	N.A.
13	500->1000 keV Bkg	26.940	Pass	Pass	N.A.
14	1000->2000 keV Bkg	15.545	Pass	Pass	N.A.
15	40-> 50 keV Bkg	3.243	Pass	Pass	N.A.

Q.C. Results Saved.

041000D08.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Weekly Background Check

Sample ID: 0418003-28 Weekly Background

Sampling Start:	06/18/2004 12:00:00	Counting Start:	06/18/2004 17:33:32
Sampling Stop:	06/18/2004 12:00:00	Decay Time.	5.56E+000 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	60000 Sec
Sample Size	1.00E+000 L	Real Time	60136 Sec
Collection Efficiency	1.0000	Spc. File	.041000D08.SPC

Detector #: 8 (Detector 8)

Energy(keV)= -0.36 + 0.500*Ch +-2.06E-07*Ch^2 + 9.93E-11*Ch^3 06/18/2004
FWHM(keV) = 0.53 + 0.022*En + 6.21E-04*En^2 + 0.00E+00*En^3 12/29/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.41	93.51	575	83	56	626	0.85 a	
2	49.33	99.34	53	50	39	376	0.52 b	
3	63.24	127.16	558	87	60	732	0.87 a	
4	66.29	133.26	240	99	78	1024	1.19 b	
5	69.33	139.33	25	52	42	439	0.44 c	NET< CL
6	74.89	150.45	163	66	50	561	0.61 a	
7	77.09	154.86	134	75	59	701	0.78 b	
8	78.99	158.65	26	40	32	280	0.39 c	NET< CL
9	84.54	169.75	122	72	57	646	0.89 a	
10	92.56	185.78	828	96	63	732	0.99 a	
11	112.46	225.58	59	92	74	873	1.29 a	NET< CL
12	119.10	238.85	16	46	37	345	0.43 a	NET< CL
13	139.79	280.23	128	83	66	740	1.10 a	Wide Pk
14	143.48	287.61	86	99	80	951	1.41 b	
15	185.75	372.14	371	72	50	496	0.88 a	
16	194.17	388.97	28	73	59	648	0.93 a	NET< CL
17	198.39	397.41	149	59	44	432	0.60 b	
18	202.97	406.57	24	55	44	432	0.60 c	NET< CL
19	238.58	477.79	254	62	44	421	0.71 a	
20	245.31	491.25	38	42	33	267	0.52 a	
21	295.21	591.03	92	82	66	638	1.43 a	
22	315.03	630.68	-12	34	28	198	0.56 a	NET< CL DELETED
23	315.90	632.42	70	79	63	594	1.51 b	

000473

041000D08.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
24	338.23	677.08	61	60	48	425	0.91	a	
25	352.09	704.79	91	71	56	552	1.44	a	
26	422.55	845.70	36	42	33	249	0.76	a	
27	508.81	1018.21	50	52	41	334	1.08	a	Wide Pk
28	511.00	1022.59	1576	121	75	716	2.41	b	
29	558.53	1117.63	161	55	40	292	1.23	a	
30	583.09	1166.76	141	59	44	342	1.51	a	
31	597.90	1196.36	31	58	47	404	1.36	a	NET< CL
32	609.43	1219.42	83	71	57	528	1.63	a	
33	670.12	1340.78	44	52	41	310	1.65	a	
34	704.18	1408.86	44	53	42	347	1.52	a	
35	803.01	1606.44	117	46	33	214	1.45	a	
36	910.89	1822.06	85	38	27	154	1.31	a	
37	1000.64	2001.39	21	34	27	151	1.45	a	NET< CL
38	1460.55	2919.43	222	41	23	105	1.84	a	
39	1765.35	3526.66	23	21	16	55	1.28	a	

000473

041000D08.SPC Analyzed by

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SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

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ID: 0418003-28 Weekly Background

Detector # 8 Background Q.C. Analysis for 06/18/2004 17:33:32

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
10	50-> 150 keV Bkg	26.319	Pass	Pass	N.A.
11	150-> 250 keV Bkg	20.603	Pass	Pass	N.A.
12	250-> 500 keV Bkg	30.679	Pass	Pass	N.A.
13	500->1000 keV Bkg	32.694	Pass	Pass	N.A.
14	1000->2000 keV Bkg	19.058	Pass	Pass	N.A.
15	40-> 50 keV Bkg	3.442	Pass	Pass	N.A.

Q.C. Results Saved.

000493

040983D10.SPC Analyzed by MC

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Weekly Background Check

Sample ID: 0418003-30 Weekly Background

Sampling Start:	06/18/2004 12:00:00	Counting Start:	06/18/2004 17:33:36
Sampling Stop:	06/18/2004 12:00:00	Decay Time.	5.56E+000 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	60000 Sec
Sample Size	1.00E+000 L	Real Time	60136 Sec
Collection Efficiency	1.0000	Spc. File	.040983D10.SPC

Detector #: 10 (Detector 10)

Energy(keV)= -1.20 + 0.501*Ch +-3.02E-07*Ch^2 + 1.16E-10*Ch^3 06/18/2004
FWHM(keV) = 1.34 + -0.029*En + 2.72E-03*En^2 + 0.00E+00*En^3 05/21/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.35	94.94	1098	152	112	2482	1.17 a	
2	53.76	109.74	151	91	72	1284	0.72 a	
3	63.27	128.73	893	160	122	2768	1.36 a	
4	66.10	134.38	584	143	111	2422	1.12 b	
5	69.91	142.00	5	91	75	1384	0.65 c	NET< CL
6	74.92	152.01	777	146	111	2422	1.14 a	
7	77.06	156.27	1125	151	111	2422	1.10 b	
8	84.49	171.11	346	164	131	2828	1.65 a	HiResid
9	87.31	176.75	482	130	100	1979	1.21 b	HiResid
10	92.61	187.32	1974	172	121	2545	1.48 c	HiResid
11	139.78	281.52	527	135	104	2014	1.30 a	
12	143.82	289.60	307	143	114	2266	1.46 b	
13	163.68	329.25	57	116	95	1768	1.20 a	NET< CL
14	185.82	373.48	1412	147	104	1987	1.31 a	
15	198.39	398.58	636	126	95	1779	1.23 a	
16	209.54	420.86	58	90	73	1220	0.74 a	NET< CL
17	238.72	479.15	923	127	92	1730	1.39 a	
18	241.84	485.37	718	133	100	1947	1.45 b	
19	270.12	541.86	75	77	62	950	0.80 a	
20	295.21	591.99	1731	141	94	1721	1.43 a	
21	338.49	678.43	105	93	75	1215	1.11 a	
22	351.90	705.22	3000	157	93	1599	1.65 a	
23	510.99	1023.03	4876	211	130	2328	3.23 a	Wide Pk
24	558.46	1117.85	562	102	74	1101	1.61 a	

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	569.70	1140.30	301	133	105	1761	2.56 b	
26	583.34	1167.54	356	102	78	1167	1.88 a	
27	598.74	1198.30	630	168	132	2324	3.44 a	Wide Pk
28	603.70	1208.21	1215	297	237	4895	6.39 b	
29	609.32	1219.45	2619	161	102	1853	2.10 c	
30	669.70	1340.04	109	82	65	848	1.69 a	
31	693.64	1387.86	117	86	69	993	1.49 a	
32	768.35	1537.07	247	110	87	1160	2.73 a	
33	803.16	1606.58	439	108	82	1071	2.66 a	
34	838.25	1676.64	184	133	107	1590	3.31 a	
35	898.05	1796.03	168	102	81	1010	2.79 a	
36	911.32	1822.54	340	97	74	891	2.54 b	
37	933.83	1867.47	101	71	56	609	1.74 a	
38	962.93	1925.57	274	117	92	1109	3.63 a	
39	968.74	1937.15	217	104	82	958	3.07 b	
40	1063.80	2126.88	128	89	71	774	2.78 a	
41	1120.08	2239.16	497	112	85	990	3.29 a	
42	1237.99	2474.34	225	107	85	912	3.79 a	
43	1377.86	2753.16	155	76	59	515	2.98 a	
44	1461.09	2918.98	1100	107	69	614	3.68 a	
45	1730.46	3455.09	121	65	50	352	3.20 a	
46	1765.09	3523.94	553	94	67	495	4.51 a	

040983D10.SPC Analyzed by

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SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

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ID: 0418003-30 Weekly Background

Detector # 10 Background Q.C. Analysis for 06/18/2004 17:33:36

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
10	50-> 150 keV Bkg	64.307	Pass	Pass	N.A.
11	150-> 250 keV Bkg	51.670	Pass	Pass	N.A.
12	250-> 500 keV Bkg	81.744	Pass	Pass	N.A.
13	500->1000 keV Bkg	96.476	Pass	Pass	N.A.
14	1000->2000 keV Bkg	58.976	Pass	Pass	N.A.
15	40-> 50 keV Bkg	8.987	Pass	Pass	N.A.

Q.C. Results Saved.

Paragon Analytics

Gamma Spectrometer Calibration Log

Date: 6-25-04

Reviewed By/Date: JP 6/25/04

Det. No.	Out Of Service	Background		Source Check			Repeat Source Check			
		Started	OK	Started	OK	Failed Parameter(s)	OK	Failed Parameter(s)	Corrective Action Taken **	Removed from Service
1.		MC	JP	MC	MC					
2.		↓	JP	↓	↓					
3.		↓	JP	↓	↓					
4.		↓	JP	↓	↓					
5.	MC	—	—	—	—					
6.	↓	—	—	—	—					
7.		MC	JP	MC	MC					
8.		↓	JP	↓	↓					
9.	MC	—	—	—	—					
10.		MC	JP	MC	—	60 FWHM 1332 CENT.	JP		GAIN ADJUST.	
11.										
12.										

.** Corrective Action:

278527 A

Form 754r9.frm (9/19/2001)

041072D02.SPC Analyzed by JP

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Weekly Background Check

Sample ID: 0418003-32 Weekly Background

Sampling Start:	06/25/2004 12:00:00	Counting Start:	06/25/2004 18:04:39
Sampling Stop:	06/25/2004 12:00:00	Decay Time.	6.08E+000 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	60000 Sec
Sample Size	1.00E+000 L	Real Time	60160 Sec
Collection Efficiency	1.0000	Spc. File	.041072D02.SPC

Detector #: 2 (Detector 2)

Energy(keV)= -0.66 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/25/2004
FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.66	94.63	47	68	55	611	0.78 a	NET< CL
2	49.45	100.21	17	58	47	489	0.58 b	NET< CL
3	53.34	107.99	12	37	30	244	0.35 c	NET< CL
4	63.40	128.10	181	63	47	494	0.72 a	
5	66.38	134.07	133	71	55	618	0.88 b	
6	74.86	151.02	139	71	55	606	0.85 a	
7	77.16	155.61	116	79	63	727	0.90 b	
8	84.67	170.64	50	37	28	215	0.39 a	
9	86.98	175.25	77	74	59	645	0.98 b	
10	89.84	180.97	18	54	44	430	0.63 c	NET< CL
11	92.66	186.62	420	83	59	645	0.98 d	
12	116.16	233.61	40	43	34	284	0.50 a	
13	128.59	258.46	28	43	35	296	0.45 a	NET< CL
14	139.91	281.11	106	63	49	476	0.85 a	
15	143.67	288.61	80	78	62	666	1.12 b	
16	163.37	328.02	16	42	34	286	0.43 a	NET< CL
17	185.81	372.88	260	69	50	503	0.77 a	
18	190.87	383.00	15	42	34	290	0.44 a	NET< CL
19	198.40	398.06	166	65	50	494	0.82 a	
20	238.46	478.18	236	64	46	423	0.77 a	
21	295.40	592.03	91	107	86	871	2.08 a	Wide Pk
22	338.24	677.70	63	69	55	484	1.29 a	
23	351.86	704.92	141	58	43	347	1.02 a	
24	356.04	713.28	30	34	27	174	0.54 b	

041072D02.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	511.06	1023.28	1368	117	74	709	2.50 a	Wide Pk
26	558.53	1118.21	184	54	39	260	1.43 a	
27	569.88	1140.92	55	52	41	311	1.24 a	
28	583.28	1167.69	146	50	36	249	1.18 a	
29	609.48	1220.09	142	69	53	460	1.57 a	
30	639.66	1280.45	22	29	22	124	0.67 a	NET< CL
31	669.77	1340.66	46	45	35	231	1.38 a	
32	803.08	1607.24	129	43	30	170	1.29 a	
33	859.42	1719.90	32	43	34	211	1.66 a	NET< CL
34	898.98	1799.00	40	42	33	190	1.77 a	
35	911.35	1823.75	62	36	27	146	1.24 a	
36	961.89	1924.80	66	43	33	185	2.01 a	
37	968.90	1938.82	63	34	24	123	1.25 b	
38	1213.48	2427.92	19	24	18	76	1.17 a	
39	1460.71	2922.29	191	35	18	61	1.74 a	
40	1764.47	3529.71	29	18	12	32	1.16 a	

000486

041072D02.SPC Analyzed by

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SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

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ID: 0418003-32 Weekly Background

Detector # 2 Background Q.C. Analysis for 06/25/2004 18:04:39

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
10	50-> 150 keV Bkg	22.166	Pass	Pass	N.A.
11	150-> 250 keV Bkg	19.121	Pass	Pass	N.A.
12	250-> 500 keV Bkg	27.479	Pass	Pass	N.A.
13	500->1000 keV Bkg	28.486	Pass	Pass	N.A.
14	1000->2000 keV Bkg	16.074	Pass	Pass	N.A.
15	40-> 50 keV Bkg	2.684	Pass	Pass	N.A.

Q.C. Results Saved.

041070D03.SPC Analyzed by JP

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Weekly Background Check

Sample ID: 0418003-33 Weekly Background

Sampling Start:	06/25/2004 12:00:00	Counting Start:	06/25/2004 18:04:42
Sampling Stop:	06/25/2004 12:00:00	Decay Time.	6.08E+000 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	60000 Sec
Sample Size	1.00E+000 L	Real Time	60160 Sec
Collection Efficiency	1.0000	Spc. File	.041070D03.SPC

Detector #: 3 (Detector 3)

Energy(keV)= -0.85 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/25/2004
FWHM(keV) = 0.77 + 0.011*En + 9.52E-04*En^2 + 0.00E+00*En^3 04/13/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	46.62	94.89	104	92	74	932	1.11	a	
2	63.20	128.02	204	77	59	694	0.80	a	HiResid
3	66.12	133.87	210	106	84	1111	1.26	b	HiResid
4	69.76	141.14	19	51	41	417	0.51	c	NET< CL HiResid
5	74.84	151.28	134	75	59	691	0.75	a	
6	77.07	155.75	121	75	59	691	0.74	b	
7	84.41	170.42	79	97	78	971	1.23	a	
8	92.67	186.92	523	88	62	709	1.06	a	
9	139.99	281.50	86	57	44	430	0.61	a	
10	144.09	289.70	54	73	59	645	0.99	b	NET< CL
11	185.81	373.09	330	79	58	620	1.01	a	
12	198.42	398.29	212	88	68	732	1.37	a	
13	205.24	411.93	13	43	35	303	0.56	a	NET< CL
14	238.73	478.86	209	68	50	508	0.89	a	
15	295.56	592.43	109	81	65	689	1.56	a	
16	338.74	678.74	62	54	43	382	1.06	a	
17	352.05	705.34	184	68	52	494	1.24	a	
18	399.56	800.30	32	43	34	266	0.80	a	NET< CL
19	511.15	1023.34	1630	120	73	721	2.74	a	Wide Pk
20	558.62	1118.22	123	47	34	252	1.10	a	
21	569.58	1140.13	86	80	64	586	2.61	a	Wide Pk
22	583.39	1167.72	182	62	45	364	1.72	a	
23	609.64	1220.18	104	62	48	446	1.54	a	

041070D03.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
24	693.77	1388.34	117	77	61	545	2.44	a
25	803.39	1607.43	108	41	30	193	1.30	a
26	911.61	1823.73	81	47	36	233	1.97	a
27	962.38	1925.21	61	40	30	181	1.67	a
28	1001.14	2002.66	27	33	26	139	1.49	a
29	1014.86	2030.09	33	30	23	122	1.19	a
30	1460.95	2921.69	250	44	25	110	2.23	a
31	1764.82	3529.03	37	41	32	128	3.85	a

041070D03.SPC Analyzed by

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SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

****

ID: 0418003-33 Weekly Background

Detector # 3 Background Q.C. Analysis for 06/25/2004 18:04:42

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
10	50-> 150 keV Bkg	24.363	Pass	Pass	N.A.
11	150-> 250 keV Bkg	20.196	Pass	Pass	N.A.
12	250-> 500 keV Bkg	29.458	Pass	Pass	N.A.
13	500->1000 keV Bkg	30.761	Pass	Pass	N.A.
14	1000->2000 keV Bkg	17.558	Pass	Pass	N.A.
15	40-> 50 keV Bkg	3.062	Pass	Pass	N.A.

Q.C. Results Saved.

003437

041130D04.SPC Analyzed by JP

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Weekly Background Check

Sample ID: 0418003-34 Weekly Background

Sampling Start:	06/25/2004 12:00:00	Counting Start:	06/25/2004 18:04:45
Sampling Stop:	06/25/2004 12:00:00	Decay Time.	6.08E+000 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	60000 Sec
Sample Size	1.00E+000 L	Real Time	60160 Sec
Collection Efficiency	1.0000	Spc. File	.041130D04.SPC

Detector #: 4 (Detector 4)

Energy(keV)= -1.07 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 06/25/2004
FWHM(keV) = 0.58 + 0.009*En + 1.00E-03*En^2 + 0.00E+00*En^3 06/18/2004
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	46.69	95.45	46	50	40	390	0.41 a	
2	53.63	109.32	29	37	29	241	0.35 a	NET< CL
3	63.19	128.44	148	53	39	371	0.48 a	Wide Pk
4	66.39	134.83	177	81	63	741	0.92 b	
5	70.38	142.80	110	135	110	1482	2.01 c	
6	72.56	147.16	73	69	55	618	0.81 d	
7	74.86	151.75	134	71	55	618	0.74 e	
8	77.15	156.33	154	90	71	865	1.17 f	
9	86.99	176.00	5	36	29	236	0.39 a	NET< CL
10	90.00	182.00	8	36	29	236	0.38 b	NET< CL
11	92.54	187.09	358	76	54	591	0.85 c	
12	115.85	233.66	47	44	34	285	0.41 a	
13	139.85	281.63	115	48	35	310	0.41 a	
14	148.13	298.18	32	42	33	271	0.42 a	NET< CL
15	172.63	347.15	46	60	48	463	0.77 a	NET< CL
16	185.65	373.17	263	67	48	464	0.82 a	
17	198.22	398.28	167	63	48	456	0.88 a	
18	238.48	478.75	185	62	46	418	0.80 a	
19	284.06	569.84	21	58	47	414	1.03 a	NET< CL
20	338.23	678.09	53	49	38	298	0.85 a	
21	351.90	705.42	131	69	54	453	1.30 a	
22	446.20	893.88	30	39	31	212	0.74 a	NET< CL
23	491.45	984.32	42	47	37	267	1.09 a	
24	510.96	1023.31	1296	109	68	616	2.32 a	Wide Pk

041130D04.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	558.27	1117.86	150	54	39	284	1.27 a	
26	569.48	1140.25	68	55	43	324	1.49 a	
27	583.08	1167.43	79	46	35	243	1.22 a	
28	609.08	1219.40	97	54	41	336	1.20 a	
29	669.23	1339.61	44	35	27	152	1.06 a	
30	802.82	1606.59	107	53	40	257	2.21 a	
31	897.50	1795.81	44	39	30	166	1.63 a	
32	911.36	1823.51	10	96	78	541	5.23 a	NET< CL Wide Pk
33	961.82	1924.36	37	28	21	102	0.91 a	
34	1162.63	2325.69	36	30	22	97	1.77 a	
35	1460.28	2920.54	193	41	25	105	2.47 a	

041130D04.SPC Analyzed by

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SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

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ID: 0418003-34 Weekly Background

Detector # 4 Background Q.C. Analysis for 06/25/2004 18:04:45

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
10	50-> 150 keV Bkg	22.636	Pass	Pass	N.A.
11	150-> 250 keV Bkg	18.612	Pass	Pass	N.A.
12	250-> 500 keV Bkg	27.580	Pass	Pass	N.A.
13	500->1000 keV Bkg	28.476	Pass	Pass	N.A.
14	1000->2000 keV Bkg	15.920	Pass	Pass	N.A.
15	40-> 50 keV Bkg	2.757	Pass	Pass	N.A.

Q.C. Results Saved.

040991D07.SPC Analyzed by JP

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Weekly Background Check

Sample ID: 0418003-37 Weekly Background

Sampling Start:	06/25/2004 12:00:00	Counting Start:	06/25/2004 18:04:48
Sampling Stop:	06/25/2004 12:00:00	Decay Time.	6.08E+000 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	60000 Sec
Sample Size	1.00E+000 L	Real Time	60139 Sec
Collection Efficiency	1.0000	Spc. File	.040991D07.SPC

Detector #: 7 (Detector 7)

Energy(keV)= -2.10 + 0.501*Ch + 6.63E-08*Ch^2 + 3.23E-11*Ch^3 06/25/2004
FWHM(keV) = 0.76 + 0.005*En + 7.78E-04*En^2 + 0.00E+00*En^3 12/09/2003
Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	46.48	97.03	510	81	56	623	0.77	a	
2	53.41	110.88	57	59	47	493	0.61	a	
3	63.26	130.55	396	82	59	700	0.77	a	
4	66.39	136.79	161	76	59	700	0.89	b	
5	70.00	144.01	61	63	50	560	0.66	c	
6	74.92	153.85	108	64	50	549	0.64	a	
7	77.19	158.37	89	63	50	549	0.60	b	
8	84.57	173.12	89	79	63	744	0.92	a	
9	92.62	189.20	531	79	53	566	0.86	a	
10	112.64	229.18	35	54	43	419	0.70	a	NET< CL
11	128.95	261.76	31	43	35	295	0.46	a	NET< CL
12	139.68	283.17	138	87	69	744	1.27	a	
13	144.07	291.95	119	94	75	837	1.50	b	
14	185.64	374.97	261	67	48	463	0.76	a	
15	198.36	400.38	125	67	52	494	0.95	a	
16	238.57	480.69	238	62	44	389	0.89	a	
17	253.39	510.27	24	37	30	218	0.52	a	NET< CL
18	270.28	544.00	12	37	30	219	0.52	a	NET< CL
19	274.95	553.33	28	53	43	365	0.80	b	NET< CL
20	338.30	679.84	48	63	50	433	1.14	a	NET< CL
21	351.59	706.38	63	43	32	234	0.73	a	
22	490.81	984.34	46	46	36	262	1.19	a	
23	511.01	1024.69	1139	114	76	737	2.38	a	Wide Pk
24	558.48	1119.44	129	48	35	243	1.20	a	

040991D07.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG	
25	569.81	1142.06	68	39	29	191	0.88	a	
26	583.19	1168.77	44	38	29	192	0.76	a	
27	609.46	1221.22	78	45	34	245	1.04	a	
28	693.50	1388.97	105	81	64	510	2.60	a	Wide Pk
29	802.85	1607.19	75	34	24	135	0.94	a	
30	911.08	1823.15	64	40	30	169	1.61	a	
31	962.01	1924.76	48	32	24	115	1.31	a	
32	968.65	1938.00	38	36	28	144	1.59	b	
33	1460.57	2918.81	125	34	21	83	2.03	a	

040991D07.SPC Analyzed by

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SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

****

ID: 0418003-37 Weekly Background

Detector # 7 Background Q.C. Analysis for 06/25/2004 18:04:48

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
10	50-> 150 keV Bkg	23.809	Pass	Pass	N.A.
11	150-> 250 keV Bkg	18.008	Pass	Pass	N.A.
12	250-> 500 keV Bkg	27.136	Pass	Pass	N.A.
13	500->1000 keV Bkg	27.623	Pass	Pass	N.A.
14	1000->2000 keV Bkg	15.797	Pass	Pass	N.A.
15	40-> 50 keV Bkg	3.279	Pass	Pass	N.A.

Q.C. Results Saved.

Paragon Analytics

Gamma Spectrometer Calibration Log

Date: 7/2/04 Reviewed By/Date: JP 7/2/04

Det. No.	Out Of Service	Background		Source Check			Repeat Source Check			
		Started	OK	Started	OK	Failed Parameter(s)	OK	Failed Parameter(s)	Corrective Action Taken **	Removed from Service
1.	JP	MC*	JP	/	/					
2.		↓	JP	JP	JP					
3.		↓	JP	JP	JP					
4.		↓	/ Δ	JP	JP					
5.	JP	/	/	/	/					
6.	JP	↓	↓	/	/					
7.		MC	JP	JP	JP					
8.		↓	JP	JP	JP					
9.	JP	/	/	/	/					
10.		MC	JP	JP	JP					
11.										
12.										

. Corrective Action:**

* DETECTOR ABLE TO BE BIASED; DAILY Q.C. LIMITS RESET TO INTERIM VALUES; DETECTOR WILL BE RE-CALIBRATED AND IS IN SERVICE. MC 7/2/04

Δ Detector 4 passed on bounds test for Weekly background check. However, it peak shifted (K-40 at 1466 keV rather than 1460 keV) so it will be recounted on 7/3/04. JP 7/3/04

278948 A

Form 754r9.frm (9/19/2001)

041147D02.SPC Analyzed by JP

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SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Div. of DataChem Lab
GammaScan

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Weekly Background Check

Sample ID: 0419002-2 Weekly Bkg.

Sampling Start:	07/02/2004 12:00:00	Counting Start:	07/02/2004 17:53:02
Sampling Stop:	07/02/2004 12:00:00	Decay Time.	5.88E+000 Hrs
Buildup Time.	0.00E+000 Hrs	Live Time	60000 Sec
Sample Size	1.00E+000 L	Real Time	60098 Sec
Collection Efficiency	1.0000	Spc. File	.041147D02.SPC

Detector #: 2 (Detector 2)

Energy(keV)= -0.16 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 07/02/2004

FWHM(keV) = 0.58 + 0.013*En + 6.82E-04*En^2 + 0.00E+00*En^3 04/13/2004

Where En = Sqrt(Energy in keV)

Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 80/4000

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)		FLAG
1	47.10	94.52	126	43	31	259	0.37	a	
2	63.99	128.29	202	133	107	1412	1.95	a	Wide Pk
3	66.91	134.14	223	90	69	824	1.09	b	
4	75.36	151.03	134	64	49	537	0.73	a	
5	77.66	155.64	140	74	58	671	0.78	b	
6	84.91	170.15	49	57	46	466	0.61	a	
7	93.07	186.46	376	93	69	820	1.12	a	
8	103.16	206.65	26	43	35	298	0.43	a	NET< CL
9	140.23	280.77	98	55	43	401	0.62	a	
10	164.49	329.29	48	61	49	475	0.85	a	NET< CL
11	186.30	372.91	302	78	57	603	1.05	a	
12	198.70	397.72	153	63	48	467	0.89	a	
13	209.52	419.35	32	51	41	376	0.59	a	NET< CL
14	239.16	478.63	305	72	52	499	0.95	a	
15	242.19	484.69	52	49	39	333	0.66	b	
16	258.93	518.17	25	66	54	536	1.04	a	NET< CL
17	270.79	541.88	44	54	43	373	0.80	a	
18	295.74	591.79	92	62	48	427	0.92	a	
19	309.24	618.79	29	44	35	277	0.65	a	NET< CL
20	338.68	677.67	65	64	51	441	1.10	a	
21	352.28	704.87	215	65	48	387	1.17	a	
22	413.07	826.45	29	32	25	153	0.57	a	
23	511.49	1023.30	1422	118	75	714	2.40	a	Wide Pk
24	558.93	1118.18	101	45	33	227	1.03	a	

000493

041147D02.SPC Analyzed by

PEAK SEARCH RESULTS

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN-CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
25	570.03	1140.36	62	48	38	279	1.09 a	
26	583.86	1168.02	130	47	34	223	1.13 a	
27	596.49	1193.29	2	33	27	186	0.65 a	NET< CL
28	597.37	1195.06	56	61	49	419	1.42 b	
29	609.52	1219.35	130	54	41	327	1.09 a	
30	727.25	1454.82	56	48	37	226	1.71 a	
31	803.40	1607.12	163	53	38	224	1.73 a	
32	869.20	1738.71	27	35	28	157	1.29 a	NET< CL
33	911.40	1823.11	82	37	27	148	1.33 a	
34	962.08	1924.46	99	53	40	232	2.69 a	Wide Pk
35	969.37	1939.05	54	32	24	116	1.37 b	
36	1063.80	2127.91	29	35	27	136	1.70 a	
37	1120.36	2241.02	50	37	28	139	1.77 a	
38	1460.96	2922.23	158	39	25	105	2.31 a	
39	1764.43	3529.16	41	27	20	70	2.16 a	

041147D02.SPC Analyzed by

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SEEKER B A C K G R O U N D Q. C. A N A L Y S I S Version 2.2.2

****

ID: 0419002-2 Weekly Bkg.

Detector # 2 Background Q.C. Analysis for 07/02/2004 17:53:02

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
10	50-> 150 keV Bkg	23.271	Pass	Pass	N.A.
11	150-> 250 keV Bkg	19.221	Pass	Pass	N.A.
12	250-> 500 keV Bkg	28.246	Pass	Pass	N.A.
13	500->1000 keV Bkg	29.016	Pass	Pass	N.A.
14	1000->2000 keV Bkg	16.507	Pass	Pass	N.A.
15	40-> 50 keV Bkg	2.909	Pass	Pass	N.A.

Q.C. Results Saved.

Gamma Spectroscopy

Quality Control Data

Daily Instrument Performance Checks

ANALYTICS

ATID. 0126

Analytics, Inc.
1380 Seaboard Industrial Boulevard
Atlanta, Georgia 30318
404 352-8677

Recd 12-29-94

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

49500-307

50 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: October 1, 1994 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	1759	5.0
Cd-109	88	462.6	d	2622	4.5
Co-57	122	271.79	d	1472	4.2
Ce-139	166	137.64	d	2037	4.6
Hg-203	279	46.595	d	3978	4.5
Sn-113	392	115.09	d	2862	4.7
Cs-137	662	30.0	y	1735	4.7
Y-88	898	106.63	d	7290	4.4
Co-60	1173	5.2714	y	3347	4.3
Co-60	1332	5.2714	y	3355	4.8
Y-88	1836	106.63	d	7630	4.3

50.8520 grams solution 4M HCl.
P O NUMBER 45864, Item 1

SOURCE PREPARED BY: M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED: D. M. Montgomery 12-23-94

This standard will expire one year after the calibration date.

ATI ID 0126

ANALYTICS

Analytics, Inc.
1380 Seaboard Industrial Boulevard
Atlanta, Georgia 30318
404 352-8677

ANALYSIS OF UNCERTAINTY

BATCH 78 MIXED GAMMA STANDARDS WITH Am-241
CALIBRATION DATE: October 1, 1994 12:00 EST

GAMMA RAY ENERGY (keV)	RANDOM ERROR % (99 % CL)	SYSTEMATIC ERROR %	TOTAL %
59.5	2.0	3.0	5.0
88	1.5	3.0	4.5
122	1.6	2.6	4.2
166	2.1	2.5	4.6
279	1.5	3.0	4.5
392	1.9	2.8	4.7
662	1.9	2.8	4.7
898	1.4	3.0	4.4
1173	1.5	2.8	4.3
1332	2.0	2.8	4.8
1836	1.2	3.1	4.3

The systematic error includes the error in calibration standards, weighing error, and estimated counting corrections. All uncertainties are stated at the 99% confidence level.

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (kev/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

Analytics, Incorporated
Atlanta, Georgia

is a participant for the period January 1, 1994, through December 31, 1994, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the U.S. Council for Energy Awareness. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed on the back of this certificate.

For the Director,

J.M. Robin Hutchinson, Acting Group Leader
Radioactivity Group
Physics Laboratory

(over)

000504

PROJECT Stds 178 A thru L

(ATI ID 126)
Analytics Std. 49500-307 was diluted 12 ways for gamma spectrometer daily calibration standards. For each standard, 4 ml of 49500-307 was diluted to 100 ml in a 100 ml class A volumetric with DI water. The solution was agitated and transferred to a nominal 250 cc pre-cleaned right cylinder. Activity calculations (as of 10-1-94) are attached below. The remaining ~2 ml of standard was discarded down the drain.

Expiration Dates:
For primary calibrations: 10-1-95
For instrument performance checks, daily calibration: 12-31-96

1380 Seaboard Industrial Boulevard
Atlanta, Georgia 30318
ANALYTICS Phone 404 352-8677
Mixed Gamma
Type Am-241 SRS 49500-307
Amount 12.806 µCi Expires 10-1-96
Date 10-1-94 12:00 EST QA
PO# 45864 Item 1
50.8520 g solution
CAUTION: RADIOACTIVE MATERIAL

ATI Working Standards 178-A through L
ATI Inventory Number 126
Analytics Standard ID: 49500-307
Prepared 01/08/95

Isotope	Energy	GPS	Abn.	Original Vol. (ml)	Aliquot ml	Final ml	Final pCi/ml	Final pCi Total	Final pCi/l	Final GPS	Final DPS
Am-241	59.5	1759	0.359	50	4	100	105.9	10594	105940	140.7	392.0
Cd-109	88	2622	0.0372	50	4	100	1524.0	152398	1523976	209.8	5638.7
Co-57	122	1472	0.8551	50	4	100	37.2	3722	37220	117.8	137.7
Ce-139	166	2037	0.8035	50	4	100	54.8	5481	54814	163.0	202.8
Hg-203	279	3978	0.773	50	4	100	111.3	11127	111269	318.2	411.7
Sn-113	392	2862	0.649	50	4	100	95.3	9535	95348	229.0	352.8
Cs-137	662	1735	0.8512	50	4	100	44.1	4407	44071	138.8	163.1
Y-88	898	7290	0.934	50	4	100	168.8	16876	168760	583.2	624.4
Co-60	1173	3347	1	50	4	100	72.4	7237	72368	267.8	267.8
Co-60	1332	3355	1	50	4	100	72.5	7254	72541	268.4	268.4
Y-88	1836	7630	0.9938	50	4	100	166.0	16600	166002	610.4	614.2

Continued on Page

Read and Understood By

Signed 1/8/95 Date Signed 2/6/01 Date

Paragon Analytics

Gamma Spectrometer Calibration Log

Date: 6/22/04 Reviewed By/Date: JP 6/22/04

Det. No.	Out Of Service	Background		Source Check			Repeat Source Check			
		Started	OK	Started	OK	Failed Parameter(s)	OK	Failed Parameter(s)	Corrective Action Taken **	Removed from Service
1.				JP	JP					
2.				↓	JP					
3.				↓	JP					
4.				↓	JP					
5.	JP			/	/					
6.	JP			/	/					
7.				JP	JP					
8.				↓	JP					
9.	JP			/	/					
10.				JP	/	60 Co FWHM	JP			
11.										
12.										

.** **Corrective Action:**

273916 A

Form 754r9.frm (9/19/2001)

041390D01.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 1 Detector Q.C. Analysis for 06/22/2004 06:33:20
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	121.215	Pass	Pass	N.A.
2	60 keV FWHM	1.735	Pass	Pass	N.A.
3	60 keV Efficiency	3.975E-02	Pass	Pass	N.A.
4	662 keV Centroid	1324.077	Pass	Pass	N.A.
5	662 keV FWHM	2.298	Pass	Pass	N.A.
6	662 keV Efficiency	4.586E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2664.251	Pass	Pass	N.A.
8	1332 keV FWHM	3.133	Pass	Pass	N.A.
9	1332 keV Efficiency	2.514E-02	Pass	Pass	N.A.

041024D03.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 3 Detector Q.C. Analysis for 06/22/2004 06:33:46
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	120.610	Pass	Pass	N.A.
2	60 keV FWHM	8.448E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.704E-02	Pass	Pass	N.A.
4	662 keV Centroid	1324.394	<FAIL>*	Pass	N.A.
5	662 keV FWHM	1.731	Pass	Pass	N.A.
6	662 keV Efficiency	1.817E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2665.000	<FAIL>*	Pass	N.A.
8	1332 keV FWHM	2.404	Pass	Pass	N.A.
9	1332 keV Efficiency	9.426E-03	Pass	Pass	N.A.

*Paragon Analytics does not control on the n-sigma Test JP 6/22/04

040946D07.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 7 Detector Q.C. Analysis for 06/22/2004 06:37:15
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	123.132	Pass	Pass	N.A.
2	60 keV FWHM	8.444E-01	Pass	Pass	N.A.
3	60 keV Efficiency	6.814E-02	Pass	Pass	N.A.
4	662 keV Centroid	1325.297	Pass	Pass	N.A.
5	662 keV FWHM	1.442	Pass	Pass	N.A.
6	662 keV Efficiency	1.534E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2663.386	Pass	Pass	N.A.
8	1332 keV FWHM	1.894	Pass	Pass	N.A.
9	1332 keV Efficiency	8.333E-03	Pass	Pass	N.A.

040998D10.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 10 Detector Q.C. Analysis for 06/22/2004 08:52:41
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	121.212	Pass	Pass	N.A.
2	60 keV FWHM	1.106	Pass	<FAIL>	N.A.
3	60 keV Efficiency	7.188E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.447	<FAIL>	Pass	N.A.
5	662 keV FWHM	2.511	Pass	<FAIL>	N.A.
6	662 keV Efficiency	4.429E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2661.799	<FAIL>	Pass	N.A.
8	1332 keV FWHM	4.257	Pass	Pass	N.A.
9	1332 keV Efficiency	2.484E-02	Pass	Pass	N.A.

040999D10.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 10 Detector Q.C. Analysis for 06/22/2004 09:14:29
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	121.214	Pass	Pass	N.A.
2	60 keV FWHM	1.139	Pass	Pass	N.A.
3	60 keV Efficiency	7.168E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.372	<FAIL>*	Pass	N.A.
5	662 keV FWHM	2.640	Pass	Pass	N.A.
6	662 keV Efficiency	4.580E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2661.625	<FAIL>*	Pass	N.A.
8	1332 keV FWHM	4.364	Pass	Pass	N.A.
9	1332 keV Efficiency	2.359E-02	Pass	Pass	N.A.

*P.A DOES NOT CONTROL ON N-SIGMA TEST MC 7/23/04

Paragon Analytics

Gamma Spectrometer Calibration Log

Date: 6/23/04

Reviewed By/Date: JP 6/23/04

Det. No.	Out Of Service	Background		Source Check			Repeat Source Check			
		Started	OK	Started	OK	Failed Parameter(s)	OK	Failed Parameter(s)	Corrective Action Taken **	Removed from Service
1.				JP	JP					
2.				↓	JP					
3.				↓	JP					
4.				↓	/	1332 Centroid	JP			
5.	JP			/	/					
6.	JP			/	/					
7.				JP	JP					
8.				↓	JP					
9.	JP			/	/					
10.				JP	/	60 FWHM	JP			
11.										
12.										

.** **Corrective Action:**

278920 **A**

Form 754r9.frm (9/19/2001)

041404D01.SPC Analyzed by JP

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SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 1 Detector Q.C. Analysis for 06/23/2004 05:42:59
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	121.196	Pass	Pass	N.A.
2	60 keV FWHM	1.709	Pass	Pass	N.A.
3	60 keV Efficiency	4.071E-02	Pass	Pass	N.A.
4	662 keV Centroid	1324.137	Pass	Pass	N.A.
5	662 keV FWHM	2.399	Pass	Pass	N.A.
6	662 keV Efficiency	4.680E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2664.224	Pass	Pass	N.A.
8	1332 keV FWHM	3.143	Pass	Pass	N.A.
9	1332 keV Efficiency	2.562E-02	Pass	Pass	N.A.

041036D03.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 3 Detector Q.C. Analysis for 06/23/2004 05:43:25
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	120.632	Pass	Pass	N.A.
2	60 keV FWHM	8.368E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.745E-02	Pass	Pass	N.A.
4	662 keV Centroid	1324.453	<FAIL>*	Pass	N.A.
5	662 keV FWHM	1.704	Pass	Pass	N.A.
6	662 keV Efficiency	1.725E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2665.005	<FAIL>*	Pass	N.A.
8	1332 keV FWHM	2.448	Pass	Pass	N.A.
9	1332 keV Efficiency	9.311E-03	Pass	Pass	N.A.

* Paragon Analytics does not control on the n-sigma test. JP 6/23/04

040958D07.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILL CHECK
Detector # 7 Detector Q.C. Analysis for 06/23/2004 05:43:49
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	123.070	Pass	Pass	N.A.
2	60 keV FWHM	8.290E-01	Pass	Pass	N.A.
3	60 keV Efficiency	6.890E-02	Pass	Pass	N.A.
4	662 keV Centroid	1325.405	Pass	Pass	N.A.
5	662 keV FWHM	1.389	Pass	Pass	N.A.
6	662 keV Efficiency	1.494E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2663.587	Pass	Pass	N.A.
8	1332 keV FWHM	1.904	Pass	Pass	N.A.
9	1332 keV Efficiency	7.455E-03	Pass	Pass	N.A.

041029D08.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 8 Detector Q.C. Analysis for 06/23/2004 05:44:03
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	119.647	Pass	Pass	N.A.
2	60 keV FWHM	7.500E-01	Pass	Pass	N.A.
3	60 keV Efficiency	7.004E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.676	Pass	Pass	N.A.
5	662 keV FWHM	1.380	Pass	Pass	N.A.
6	662 keV Efficiency	1.844E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2663.525	Pass	Pass	N.A.
8	1332 keV FWHM	1.804	Pass	Pass	N.A.
9	1332 keV Efficiency	8.904E-03	Pass	Pass	N.A.

041010D10.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 10 Detector Q.C. Analysis for 06/23/2004 09:55:19
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	121.197	Pass	Pass	N.A.
2	60 keV FWHM	1.114	Pass	<FAIL>	N.A.
3	60 keV Efficiency	7.108E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.497	<FAIL>	Pass	N.A.
5	662 keV FWHM	2.600	Pass	Pass	N.A.
6	662 keV Efficiency	4.552E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2661.771	<FAIL>	Pass	N.A.
8	1332 keV FWHM	4.340	Pass	Pass	N.A.
9	1332 keV Efficiency	2.563E-02	Pass	Pass	N.A.

041011D10.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 10 Detector Q.C. Analysis for 06/23/2004 10:21:25
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	121.188	Pass	Pass	N.A.
2	60 keV FWHM	1.134	Pass	<FAIL>	N.A.
3	60 keV Efficiency	7.115E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.414	<FAIL>	Pass	N.A.
5	662 keV FWHM	2.573	Pass	Pass	N.A.
6	662 keV Efficiency	4.465E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2661.735	<FAIL>	Pass	N.A.
8	1332 keV FWHM	4.253	Pass	Pass	N.A.
9	1332 keV Efficiency	2.526E-02	Pass	Pass	N.A.

041012D10.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 10 Detector Q.C. Analysis for 06/23/2004 10:44:59
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	121.188	Pass	Pass	N.A.
2	60 keV FWHM	1.126	Pass	<FAIL>	N.A.
3	60 keV Efficiency	7.187E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.379	<FAIL>	Pass	N.A.
5	662 keV FWHM	2.627	Pass	Pass	N.A.
6	662 keV Efficiency	4.582E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2661.614	<FAIL>	Pass	N.A.
8	1332 keV FWHM	4.432	Pass	Pass	N.A.
9	1332 keV Efficiency	2.510E-02	Pass	Pass	N.A.

041013D10.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 10 Detector Q.C. Analysis for 06/23/2004 11:07:19
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	121.357	Pass	Pass	N.A.
2	60 keV FWHM	1.140	Pass	Pass	N.A.
3	60 keV Efficiency	7.233E-02	Pass	Pass	N.A.
4	662 keV Centroid	1324.967	Pass	Pass	N.A.
5	662 keV FWHM	2.619	Pass	Pass	N.A.
6	662 keV Efficiency	4.524E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2664.733	Pass	Pass	N.A.
8	1332 keV FWHM	4.283	Pass	Pass	N.A.
9	1332 keV Efficiency	2.494E-02	Pass	Pass	N.A.

Paragon Analytics

Gamma Spectrometer Calibration Log

Date: 6/24/04

Reviewed By/Date: JP 6/24/03

Det. No.	Out Of Service	Background		Source Check			Repeat Source Check			
		Started	OK	Started	OK	Failed Parameter(s)	OK	Failed Parameter(s)	Corrective Action Taken **	Removed from Service
1.				JP	JP					
2.				JP	JP					
3.				JP	JP					
4.				JP	JP					
5.										
6.										
7.				JP	JP					
8.				JP		662 Eff	JP			
9.										
10.				JP		60 FWHM	JP			
11.										
12.										

.** **Corrective Action:**

278934 A

Form 754r9.frm (9/19/2001)

040971D07.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 7 Detector Q.C. Analysis for 06/24/2004 06:49:20
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	123.110	Pass	Pass	N.A.
2	60 keV FWHM	8.197E-01	Pass	Pass	N.A.
3	60 keV Efficiency	6.804E-02	Pass	Pass	N.A.
4	662 keV Centroid	1325.252	Pass	Pass	N.A.
5	662 keV FWHM	1.429	Pass	Pass	N.A.
6	662 keV Efficiency	1.511E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2663.101	Pass	Pass	N.A.
8	1332 keV FWHM	1.944	Pass	Pass	N.A.
9	1332 keV Efficiency	7.773E-03	Pass	Pass	N.A.

041038D08.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 8 Detector Q.C. Analysis for 06/24/2004 06:49:31
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	119.680	Pass	Pass	N.A.
2	60 keV FWHM	7.486E-01	Pass	Pass	N.A.
3	60 keV Efficiency	7.170E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.490	Pass	Pass	N.A.
5	662 keV FWHM	1.396	Pass	Pass	N.A.
6	662 keV Efficiency	1.895E-02	Pass	<FAIL>	N.A.
7	1332 keV Centroid	2663.319	Pass	Pass	N.A.
8	1332 keV FWHM	1.848	Pass	Pass	N.A.
9	1332 keV Efficiency	9.338E-03	Pass	Pass	N.A.

041039D08.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 8 Detector Q.C. Analysis for 06/24/2004 07:18:56
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	119.680	Pass	Pass	N.A.
2	60 keV FWHM	7.440E-01	Pass	Pass	N.A.
3	60 keV Efficiency	7.000E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.537	Pass	Pass	N.A.
5	662 keV FWHM	1.343	Pass	Pass	N.A.
6	662 keV Efficiency	1.855E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2663.241	Pass	Pass	N.A.
8	1332 keV FWHM	1.925	Pass	Pass	N.A.
9	1332 keV Efficiency	9.210E-03	Pass	Pass	N.A.

Paragon Analytics

Gamma Spectrometer Calibration Log

Date: 7/1/04 Reviewed By/Date: JP 7/1/04

Det. No.	Out Of Service	Background		Source Check			Repeat Source Check			
		Started	OK	Started	OK	Failed Parameter(s)	OK	Failed Parameter(s)	Corrective Action Taken **	Removed from Service
1.	JP			/	/					
2.				JP	JP					
3.				JP	JP					
4.				JP	/	1332 Centroid	JP		Gain Adjustment	
5.	JP			/	/					
6.	JP			/	/					
7.				JP	JP					
8.				JP	JP					
9.	JP			/	/					
10.				JP	JP					
11.										
12.										

. Corrective Action:**

278946 A

Form 754r9.frm (9/19/2001)

041127D02.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 2 Detector Q.C. Analysis for 07/01/2004 07:15:42
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	120.443	Pass	Pass	N.A.
2	60 keV FWHM	8.377E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.291E-02	Pass	Pass	N.A.
4	662 keV Centroid	1324.284	Pass	Pass	N.A.
5	662 keV FWHM	1.429	Pass	Pass	N.A.
6	662 keV Efficiency	2.010E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2665.303	Pass	Pass	N.A.
8	1332 keV FWHM	2.074	Pass	Pass	N.A.
9	1332 keV Efficiency	1.078E-02	Pass	Pass	N.A.

041121D03.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 3 Detector Q.C. Analysis for 07/01/2004 07:15:57
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	120.643	Pass	Pass	N.A.
2	60 keV FWHM	8.339E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.674E-02	Pass	Pass	N.A.
4	662 keV Centroid	1324.359	<FAIL*	Pass	N.A.
5	662 keV FWHM	1.766	Pass	Pass	N.A.
6	662 keV Efficiency	1.837E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2664.998	<FAIL*	Pass	N.A.
8	1332 keV FWHM	2.456	Pass	Pass	N.A.
9	1332 keV Efficiency	8.644E-03	Pass	Pass	N.A.

* Paragon Analytics does not control on the n sigma test. JP & 7/1/04
JP 7/1/04

041212D04.SPC Analyzed by JP

****

SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 4 Detector Q.C. Analysis for 07/01/2004 07:20:01
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	120.986	Pass	Pass	N.A.
2	60 keV FWHM	6.926E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.898E-02	Pass	Pass	N.A.
4	662 keV Centroid	1322.430	Pass	Pass	N.A.
5	662 keV FWHM	1.550	Pass	Pass	N.A.
6	662 keV Efficiency	1.996E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2660.741	Pass	<FAIL>	N.A.
8	1332 keV FWHM	2.462	Pass	Pass	N.A.
9	1332 keV Efficiency	1.006E-02	Pass	Pass	N.A.

041213D04.SPC Analyzed by JP

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SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

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ID: DAILY CHECK
Detector # 4 Detector Q.C. Analysis for 07/01/2004 08:02:07
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	121.048	Pass	Pass	N.A.
2	60 keV FWHM	6.734E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.872E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.132	Pass	Pass	N.A.
5	662 keV FWHM	1.588	Pass	Pass	N.A.
6	662 keV Efficiency	2.001E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2661.983	Pass	Pass	N.A.
8	1332 keV FWHM	2.515	Pass	Pass	N.A.
9	1332 keV Efficiency	1.025E-02	Pass	Pass	N.A.

041052D07.SPC Analyzed by JP

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SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

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ID: DAILY CHECK
Detector # 7 Detector Q.C. Analysis for 07/01/2004 07:16:10
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	123.026	Pass	Pass	N.A.
2	60 keV FWHM	8.362E-01	Pass	Pass	N.A.
3	60 keV Efficiency	6.805E-02	Pass	Pass	N.A.
4	662 keV Centroid	1325.374	Pass	Pass	N.A.
5	662 keV FWHM	1.409	Pass	Pass	N.A.
6	662 keV Efficiency	1.503E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2663.667	Pass	Pass	N.A.
8	1332 keV FWHM	1.850	Pass	Pass	N.A.
9	1332 keV Efficiency	7.209E-03	Pass	Pass	N.A.

Paragon Analytics

Gamma Spectrometer Calibration Log

Date: 7/2/04

Reviewed By/Date: JP 7/2/04

Det. No.	Out Of Service	Background		Source Check			Repeat Source Check			
		Started	OK	Started	OK	Failed Parameter(s)	OK	Failed Parameter(s)	Corrective Action Taken **	Removed from Service
1.	JP			/	/					
2.				JP	JP					
3.				JP	JP					
4.				JP	JP					
5.	JP			/	/					
6.	JP			/	/					
7.				JP	JP					
8.				JP	JP					
9.	JP			/	/					
10.				JP	JP					
11.										
12.										

.** **Corrective Action:**

278948 A

Form 754r9.frm (9/19/2001)

041138D02.SPC Analyzed by JP

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SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

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ID: DAILY CHECK
Detector # 2 Detector Q.C. Analysis for 07/02/2004 07:55:05
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	120.406	Pass	Pass	N.A.
2	60 keV FWHM	7.897E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.261E-02	Pass	Pass	N.A.
4	662 keV Centroid	1324.199	Pass	Pass	N.A.
5	662 keV FWHM	1.455	Pass	Pass	N.A.
6	662 keV Efficiency	2.042E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2665.041	Pass	Pass	N.A.
8	1332 keV FWHM	2.094	Pass	Pass	N.A.
9	1332 keV Efficiency	1.025E-02	Pass	Pass	N.A.

041132D03.SPC Analyzed by JP

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SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

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ID: DAILY CHECK
Detector # 3 Detector Q.C. Analysis for 07/02/2004 09:45:39
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	120.705	Pass	Pass	N.A.
2	60 keV FWHM	8.957E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.790E-02	Pass	Pass	N.A.
4	662 keV Centroid	1324.501	<FAIL>	Pass	N.A.
5	662 keV FWHM	1.709	Pass	Pass	N.A.
6	662 keV Efficiency	1.758E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2665.108	<FAIL>	Pass	N.A.
8	1332 keV FWHM	2.605	Pass	Pass	N.A.
9	1332 keV Efficiency	8.941E-03	Pass	Pass	N.A.

041224D04.SPC Analyzed by JP

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SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

****

ID: DAILY CHECK
Detector # 4 Detector Q.C. Analysis for 07/02/2004 07:51:21
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	121.055	Pass	Pass	N.A.
2	60 keV FWHM	6.611E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.981E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.147	Pass	Pass	N.A.
5	662 keV FWHM	1.568	Pass	Pass	N.A.
6	662 keV Efficiency	1.977E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2661.981	Pass	Pass	N.A.
8	1332 keV FWHM	2.487	Pass	Pass	N.A.
9	1332 keV Efficiency	9.788E-03	Pass	Pass	N.A.

041060D07.SPC Analyzed by JP

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SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

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ID: DAILY CHECK
Detector # 7 Detector Q.C. Analysis for 07/02/2004 08:30:55
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	123.013	Pass	Pass	N.A.
2	60 keV FWHM	8.327E-01	Pass	Pass	N.A.
3	60 keV Efficiency	6.856E-02	Pass	Pass	N.A.
4	662 keV Centroid	1325.339	Pass	Pass	N.A.
5	662 keV FWHM	1.405	Pass	Pass	N.A.
6	662 keV Efficiency	1.511E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2663.398	Pass	Pass	N.A.
8	1332 keV FWHM	1.935	Pass	Pass	N.A.
9	1332 keV Efficiency	7.763E-03	Pass	Pass	N.A.

Paragon Analytics

Gamma Spectrometer Calibration Log

Date: 7/3/04

Reviewed By/Date: JP 7/3/04

Det. No.	Out Of Service	Background		Source Check			Repeat Source Check			
		Started	OK	Started	OK	Failed Parameter(s)	OK	Failed Parameter(s)	Corrective Action Taken **	Removed from Service
1.	JP									
2.				JP	JP					
3.				JP	JP					
4.		JP		JP	JP					
5.	JP									
6.	JP									
7.				JP	JP					
8.				JP		60 FWHM	JP			
9.	JP									
10.	~~JP~~ JP 7/3/04			JP	JP					
11.										
12.										

.** Corrective Action:

278953 A

Form 754r9.frm (9/19/2001)

041148D02.SPC Analyzed by JP

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SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

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ID: DAILY CHECK
Detector # 2 Detector Q.C. Analysis for 07/03/2004 11:44:09
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	120.474	Pass	Pass	N.A.
2	60 keV FWHM	8.121E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.293E-02	Pass	Pass	N.A.
4	662 keV Centroid	1324.389	Pass	Pass	N.A.
5	662 keV FWHM	1.415	Pass	Pass	N.A.
6	662 keV Efficiency	2.070E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2665.467	Pass	Pass	N.A.
8	1332 keV FWHM	2.134	Pass	Pass	N.A.
9	1332 keV Efficiency	1.053E-02	Pass	Pass	N.A.

041068D07.SPC Analyzed by JP

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SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

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ID: DAILY CHECK
Detector # 7 Detector Q.C. Analysis for 07/03/2004 11:53:44
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	123.085	Pass	Pass	N.A.
2	60 keV FWHM	8.519E-01	Pass	Pass	N.A.
3	60 keV Efficiency	6.879E-02	Pass	Pass	N.A.
4	662 keV Centroid	1325.517	Pass	Pass	N.A.
5	662 keV FWHM	1.432	Pass	Pass	N.A.
6	662 keV Efficiency	1.547E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2663.860	Pass	Pass	N.A.
8	1332 keV FWHM	1.843	Pass	Pass	N.A.
9	1332 keV Efficiency	7.410E-03	Pass	Pass	N.A.

Paragon Analytics

Gamma Spectrometer Calibration Log

Date: 7/7/04

Reviewed By/Date: MC 7/7/04

Det. No.	Out Of Service	Background		Source Check			Repeat Source Check			
		Started	OK	Started	OK	Failed Parameter(s)	OK	Failed Parameter(s)	Corrective Action Taken **	Removed from Service
1.				JP	/	60 Eff, Centroid	MC		GAIN ADJUST.	
2.				JP	JP					
3.				JP	JP					
4.				JP	MC					
5.	JP			/	/					
6.	JP			/	/					
7.				JP	JP					
8.				JP	JP					
9.	JP			/	/					
10.				JP	JP					
11.										
12.										

.** Corrective Action:

278958 A

Form 754r9.frm (9/19/2001)

000537

041167D02.SPC Analyzed by JP

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SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

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ID: DAILY CHECK
Detector # 2 Detector Q.C. Analysis for 07/07/2004 07:31:32
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	120.434	Pass	Pass	N.A.
2	60 keV FWHM	8.111E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.281E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.771	Pass	Pass	N.A.
5	662 keV FWHM	1.372	Pass	Pass	N.A.
6	662 keV Efficiency	2.065E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2664.216	Pass	Pass	N.A.
8	1332 keV FWHM	1.979	Pass	Pass	N.A.
9	1332 keV Efficiency	1.054E-02	Pass	Pass	N.A.

Paragon Analytics

Gamma Spectrometer Calibration Log

Date: 7-8-04

Reviewed By/Date: JP 7/8/04

Det. No.	Out Of Service	Background		Source Check			Repeat Source Check			
		Started	OK	Started	OK	Failed Parameter(s)	OK	Failed Parameter(s)	Corrective Action Taken **	Removed from Service
1.				JP	JP					
2.				JP	JP					
3.				JP	JP					
4.				JP	/	1332 FWHM				
5.	MC			/	/					
6.	↳			/	/					
7.				JP	JP					
8.				JP	JP					
9.	MC			/	/					
10.				JP	JP					
11.										
12.										

.** Corrective Action:

041178D02.SPC Analyzed by JP

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SEEKER D E T E C T O R Q. C. A N A L Y S I S Version 2.2.2

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ID: DAILY CHECK
Detector # 2 Detector Q.C. Analysis for 07/08/2004 09:57:07
Standards File #: 98 (Daily Performance Check 49500-307)

#	Parameter	Value	n Sigma Test	Bounds Test	T-Test
1	60 keV Centroid	120.378	Pass	Pass	N.A.
2	60 keV FWHM	7.396E-01	Pass	Pass	N.A.
3	60 keV Efficiency	1.246E-02	Pass	Pass	N.A.
4	662 keV Centroid	1323.227	Pass	Pass	N.A.
5	662 keV FWHM	1.342	Pass	Pass	N.A.
6	662 keV Efficiency	1.998E-02	Pass	Pass	N.A.
7	1332 keV Centroid	2663.187	Pass	Pass	N.A.
8	1332 keV FWHM	2.043	Pass	Pass	N.A.
9	1332 keV Efficiency	1.102E-02	Pass	Pass	N.A.