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*********************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
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Filename: ERT01,C:\GENIE2K\CAMFILES\SMP-HTC-A01-S008-2430-01.CNF

| | |
|---|---|
| Report Generated On | : 6/24/2017 8:41:56 PM |
| Sample Title | : HTC-A01-S008-2430-01 |
| Sample Description | : 450 cc Soil |
| Sample Identification | : |
| Sample Type | : |
| Sample Geometry | : |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 100 - 8192 |
| Peak Area Range (in channels) | : 100 - 8192 |
| Identification Energy Tolerance | : 1.000 keV |
| Sample Size | : 1.023E+003 GWET |
| Sample Taken On | : 5/13/2017 8:09:00 AM |
| Acquisition Started | : 6/24/2017 6:41:50 PM |
| Live Time | : 7200.0 seconds |
| Real Time | : 7203.9 seconds |
| Dead Time | : 0.05 % |

| | |
|---|---|
| Energy Calibration Used Done On | : 5/10/2017 |
| Efficiency Calibration Used Done On | : 12/14/2016 |
| Efficiency ID | : ERT0101 |

**********
***** P E A K A N A L Y S I S R E P O R T *****
**********

Detector Name: ERT01
Sample Title: HTC-A01-S008-2430-01
Peak Analysis Performed on: 6/24/2017 8:41:56 PM
Peak Analysis From Channel: 100
Peak Analysis To Channel: 8192

| | Peak No. | ROI start | ROI end | Peak centroid | Energy (keV) | FWHM (keV) | Net Peak Area | Net Area Uncert. | Continuum Counts |
|---|---|---|---|---|---|---|---|---|---|
| M | 1 | 288- | 315 | 300.06 | 74.88 | 1.02 | 8.57E+002 | 44.29 | 1.81E+003 |
| m | 2 | 288- | 315 | 308.96 | 77.10 | 1.02 | 1.29E+003 | 50.97 | 1.85E+003 |
| M | 3 | 332- | 385 | 338.45 | 84.47 | 1.22 | 2.09E+002 | 37.94 | 1.86E+003 |
| m | 4 | 332- | 385 | 349.71 | 87.28 | 1.22 | 6.06E+002 | 43.66 | 2.05E+003 |
| m | 5 | 332- | 385 | 360.39 | 89.96 | 1.23 | 4.87E+002 | 40.91 | 1.86E+003 |
| m | 6 | 332- | 385 | 372.67 | 93.02 | 1.23 | 6.35E+002 | 43.46 | 1.90E+003 |
| | 7 | 431- | 439 | 435.52 | 108.73 | 0.55 | 1.89E+001 | 47.91 | 1.06E+003 |
| | 8 | 511- | 524 | 517.09 | 129.12 | 1.01 | 2.53E+002 | 70.23 | 1.69E+003 |
| | 9 | 614- | 622 | 617.97 | 154.33 | 0.37 | 9.84E+001 | 46.16 | 9.50E+002 |
| | 10 | 735- | 754 | 744.43 | 185.93 | 1.07 | 5.26E+002 | 83.27 | 1.83E+003 |
| | 11 | 832- | 846 | 837.78 | 209.26 | 1.10 | 5.05E+002 | 63.46 | 1.22E+003 |
| M | 12 | 946- | 976 | 955.06 | 238.57 | 1.09 | 5.39E+003 | 79.23 | 1.03E+003 |
| m | 13 | 946- | 976 | 966.26 | 241.37 | 1.09 | 6.66E+002 | 34.26 | 8.55E+002 |
| | 14 | 1068- | 1091 | 1081.51 | 270.18 | 1.45 | 4.83E+002 | 68.95 | 1.07E+003 |
| | 15 | 1106- | 1113 | 1109.79 | 277.25 | 0.96 | 1.77E+002 | 31.58 | 4.07E+002 |
| | 16 | 1169- | 1187 | 1181.48 | 295.16 | 1.22 | 8.36E+002 | 60.07 | 8.15E+002 |
| | 17 | 1196- | 1211 | 1201.08 | 300.06 | 1.25 | 3.60E+002 | 48.66 | 6.52E+002 |
| | 18 | 1304- | 1318 | 1312.68 | 327.95 | 1.18 | 3.20E+002 | 43.71 | 5.53E+002 |
| | 19 | 1341- | 1360 | 1353.42 | 338.13 | 1.09 | 1.12E+003 | 61.13 | 7.44E+002 |
| | 20 | 1401- | 1420 | 1407.96 | 351.76 | 1.25 | 1.41E+003 | 60.16 | 6.18E+002 |
| | 21 | 1631- | 1647 | 1637.76 | 409.19 | 0.83 | 1.75E+002 | 38.80 | 4.22E+002 |
| | 22 | 1844- | 1861 | 1852.32 | 462.82 | 1.32 | 3.42E+002 | 40.43 | 3.96E+002 |
| | 23 | 2027- | 2057 | 2042.80 | 510.42 | 1.44 | 9.90E+002 | 61.53 | 5.74E+002 |
| | 24 | 2323- | 2343 | 2332.83 | 582.91 | 1.20 | 2.05E+003 | 57.62 | 3.49E+002 |
| | 25 | 2425- | 2451 | 2437.38 | 609.03 | 1.13 | 1.23E+003 | 54.69 | 4.03E+002 |
| | 26 | 2900- | 2920 | 2909.39 | 727.00 | 1.56 | 4.74E+002 | 36.66 | 2.40E+002 |
| M | 27 | 3067- | 3095 | 3073.33 | 767.97 | 0.84 | 7.66E+001 | 13.55 | 1.34E+002 |
| m | 28 | 3067- | 3095 | 3090.45 | 772.25 | 0.84 | 2.96E+001 | 11.36 | 1.64E+002 |
| | 29 | 3134- | 3150 | 3143.26 | 785.45 | 0.90 | 8.96E+001 | 25.44 | 1.78E+002 |
| | 30 | 3171- | 3194 | 3180.13 | 794.66 | 1.44 | 2.90E+002 | 31.95 | 1.80E+002 |
| | 31 | 3218- | 3228 | 3223.84 | 805.59 | 0.94 | 1.22E+001 | 16.28 | 1.06E+002 |
| | 32 | 3336- | 3354 | 3343.40 | 835.47 | 1.30 | 5.43E+001 | 26.83 | 1.93E+002 |
| | 33 | 3434- | 3451 | 3443.23 | 860.42 | 1.27 | 2.18E+002 | 28.11 | 1.76E+002 |
| | 34 | 3633- | 3658 | 3645.57 | 910.99 | 1.37 | 1.64E+003 | 48.75 | 1.73E+002 |
| | 35 | 3727- | 3743 | 3736.00 | 933.59 | 0.90 | 5.74E+001 | 19.60 | 1.02E+002 |
| M | 36 | 3851- | 3885 | 3860.33 | 964.66 | 1.42 | 2.76E+002 | 19.43 | 1.43E+002 |
| m | 37 | 3851- | 3885 | 3876.57 | 968.72 | 1.42 | 9.20E+002 | 32.35 | 1.08E+002 |
| | 38 | 4310- | 4322 | 4316.20 | 1078.59 | 0.51 | 3.25E+001 | 15.51 | 7.85E+001 |
| | 39 | 4472- | 4496 | 4482.49 | 1120.15 | 1.41 | 2.98E+002 | 29.17 | 1.32E+002 |
| | 40 | 4945- | 4964 | 4955.01 | 1238.24 | 0.82 | 1.23E+002 | 25.29 | 1.47E+002 |
| | 41 | 5603- | 5615 | 5608.72 | 1401.61 | 1.07 | 2.84E+001 | 11.40 | 3.86E+001 |
| | 42 | 5832- | 5862 | 5846.62 | 1461.07 | 1.88 | 2.21E+003 | 50.70 | 7.34E+001 |

| | Peak No. | ROI start | ROI end | Peak centroid | Energy (keV) | FWHM (keV) | Net Peak Area | Net Area Uncert. | Continuum Counts |
|---|---|---|---|---|---|---|---|---|---|
| | 43 | 5982- | 5995 | 5987.33 | 1496.24 | 1.07 | 3.44E+001 | 10.18 | 2.46E+001 |
| M | 44 | 6346- | 6382 | 6356.91 | 1588.60 | 1.54 | 1.37E+002 | 13.25 | 4.02E+001 |
| m | 45 | 6346- | 6382 | 6374.63 | 1593.03 | 1.54 | 5.55E+001 | 9.50 | 4.26E+001 |
| | 46 | 6479- | 6496 | 6487.62 | 1621.27 | 0.68 | 5.47E+001 | 14.37 | 4.43E+001 |
| M | 47 | 6518- | 6564 | 6527.26 | 1631.18 | 1.71 | 6.55E+001 | 10.10 | 3.66E+001 |
| m | 48 | 6518- | 6564 | 6557.77 | 1638.80 | 1.72 | 2.42E+001 | 6.98 | 2.85E+001 |
| | 49 | 6918- | 6931 | 6924.86 | 1730.54 | 0.47 | 4.36E+001 | 10.83 | 2.64E+001 |
| | 50 | 7052- | 7075 | 7063.58 | 1765.21 | 1.81 | 2.83E+002 | 18.55 | 1.51E+001 |

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet

Errors quoted at 1.000 sigma

**********
***** N U C L I D E M D A R E P O R T *****
**********

Detector Name: ERT01
Sample Geometry:
Sample Title: HTC-A01-S008-2430-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

| | Nuclide Name | Energy (keV) | Yield (%) | Line MDA (pCi/GWET) | Nuclide MDA (pCi/GWET) | Activity (pCi/GWET) |
|---|---|---|---|---|---|---|
| + | K-40 | 1460.82* | 10.55 | 5.7204E-001 | 5.72E-001 | 1.3432E+001 |
| | Co-60 | 1173.23 | 99.85 | 6.5156E-002 | 6.23E-002 | -2.0863E-002 |
| | | 1332.49 | 99.98 | 6.2283E-002 | | -2.8461E-002 |
| > | | 2505.71 | 0.10 | 0.0000E+000 | | 0.0000E+000 |
| | Cs-137 | 32.06 | 5.54 | 4.3155E+003 | 6.98E-002 | 4.4969E+002 |
| | | 661.66 | 84.99 | 6.9763E-002 | | -1.5229E-002 |
| + | Tl-208 | 72.80 | 2.02 | 7.8541E+000 | 6.85E-002 | -5.3606E-002 |
| | | 74.97* | 3.41 | 2.8286E+000 | | 8.5729E+000 |
| | | 84.90* | 1.51 | 4.7882E+000 | | 3.5003E+000 |
| | | 277.36* | 6.31 | 4.9387E-001 | | 6.4400E-001 |
| | | 510.77* | 22.60 | 3.6109E-001 | | 1.1488E+000 |
| | | 583.19* | 84.50 | 6.8476E-002 | | 8.2953E-001 |
| | | 763.13 | 1.81 | 3.6768E+000 | | 9.9773E-002 |
| | | 860.56* | 12.42 | 4.0967E-001 | | 7.8553E-001 |
| + | Bi-212 | 39.86 | 1.06 | 8.0761E+002 | 8.19E-001 | -4.2767E+002 |
| | | 727.33* | 6.74 | 8.1919E-001 | | 2.7788E+000 |
| | | 785.37* | 1.11 | 4.2292E+000 | | 3.3666E+000 |
| | | 1620.74* | 1.51 | 2.8398E+000 | | 2.5889E+000 |
| | | 1806.00 | 0.09 | 5.4664E+001 | | -4.7910E+000 |
| + | Pb-212 | 74.81* | 10.40 | 9.2745E-001 | 1.05E-001 | 2.8109E+000 |
| | | 77.11* | 17.50 | 5.1127E-001 | | 2.3118E+000 |
| | | 87.30* | 7.81 | 9.1368E-001 | | 1.8417E+000 |
| | | 115.18 | 0.59 | 1.1040E+001 | | 8.5926E+000 |
| | | 238.63* | 43.30 | 1.0540E-001 | | 2.6226E+000 |
| | | 300.09* | 3.28 | 1.5393E+000 | | 2.6227E+000 |
| + | Bi-214 | 76.86* | 0.43 | 2.0137E+001 | 1.47E-001 | 9.1055E+001 |
| | | 89.81* | 0.24 | 2.5354E+001 | | 4.3133E+001 |
| | | 386.77 | 0.30 | 1.8459E+001 | | -1.9363E+000 |
| | | 454.77 | 0.29 | 1.9036E+001 | | -9.8931E+000 |
| | | 609.31* | 45.49 | 1.4673E-001 | | 9.0864E-001 |
| | | 665.45 | 1.53 | 3.9385E+000 | | 3.6307E+000 |
| | | 703.11 | 0.48 | 1.3017E+001 | | 7.1964E+000 |
| | | 719.86 | 0.39 | 1.5152E+001 | | -8.7550E+000 |
| | | 768.36* | 4.89 | 6.3449E-001 | | 6.1638E-001 |
| | | 786.10* | 0.31 | 1.4519E+001 | | 1.1558E+001 |
| | | 806.17* | 1.26 | 2.4742E+000 | | 3.9329E-001 |
| | | 934.06* | 3.10 | 1.2770E+000 | | 8.4506E-001 |
| | | 964.08* | 0.36 | 1.0507E+001 | | 3.5622E+001 |
| | | 1051.96 | 0.31 | 1.8594E+001 | | -3.9274E+000 |
| | | 1120.29* | 14.91 | 3.9712E-001 | | 1.0560E+000 |

| | Nuclide Name | Energy (keV) | Yield (%) | Line MDA (pCi/GWET) | Nuclide MDA (pCi/GWET) | Activity (pCi/GWET) |
|---|---|---|---|---|---|---|
| + | Bi-214 | 1133.66 | 0.25 | 2.4576E+001 | 1.47E-001 | 9.8550E+000 |
| | | 1155.19 | 1.63 | 4.2065E+000 | | 3.9450E-001 |
| | | 1207.68 | 0.45 | 1.5904E+001 | | 4.4990E+000 |
| | | 1238.11* | 5.79 | 1.0720E+000 | | 1.2128E+000 |
| | | 1280.96 | 1.43 | 4.7057E+000 | | 6.3248E-001 |
| | | 1377.67 | 4.00 | 1.6438E+000 | | 9.0591E-001 |
| | | 1385.31 | 0.76 | 8.1700E+000 | | -4.5477E+000 |
| | | 1401.50* | 1.27 | 2.4512E+000 | | 1.4059E+000 |
| | | 1407.98 | 2.15 | 2.8624E+000 | | 9.7431E-001 |
| | | 1509.23 | 2.11 | 2.6890E+000 | | 1.5407E-001 |
| | | 1538.50 | 0.38 | 1.2923E+001 | | -1.2506E+000 |
| | | 1543.32 | 0.20 | 2.3170E+001 | | -9.6012E+000 |
| | | 1583.22 | 0.69 | 1.1100E+001 | | 4.2395E+000 |
| | | 1594.73 | 0.25 | 3.2139E+001 | | -4.2119E+000 |
| | | 1599.31 | 0.23 | 2.6384E+001 | | -2.5040E-001 |
| | | 1661.28 | 1.15 | 4.4106E+000 | | 3.1319E-001 |
| | | 1683.99 | 0.22 | 2.1560E+001 | | -2.3619E+001 |
| | | 1729.59* | 2.92 | 1.0280E+000 | | 1.0508E+000 |
| | | 1764.49* | 15.40 | 1.8954E-001 | | 1.2778E+000 |
| | | 1847.42 | 2.11 | 2.6193E+000 | | 1.2557E+000 |
| | | 1873.16 | 0.22 | 2.3000E+001 | | 9.6499E+000 |
| > | | 2118.55 | 1.14 | 0.0000E+000 | | 0.0000E+000 |
| > | | 2204.21 | 5.08 | 0.0000E+000 | | 0.0000E+000 |
| + | Pb-214 | 53.28 | 1.20 | 4.1594E+001 | 1.47E-001 | -8.4246E-001 |
| | | 74.81* | 6.44 | 1.4360E+000 | | 4.3523E+000 |
| | | 77.11* | 10.80 | 7.9430E-001 | | 3.5916E+000 |
| | | 87.30* | 4.84 | 1.4136E+000 | | 2.8494E+000 |
| | | 242.00* | 7.43 | 5.3583E-001 | | 1.8309E+000 |
| | | 258.87 | 0.52 | 1.0742E+001 | | 4.7023E-001 |
| | | 274.80 | 0.47 | 1.3356E+001 | | 9.7240E+000 |
| | | 295.22* | 19.30 | 2.9162E-001 | | 9.8515E-001 |
| | | 351.93* | 37.60 | 1.4716E-001 | | 9.3115E-001 |
| | | 462.00* | 0.22 | 2.2135E+001 | | 4.4521E+001 |
| | | 533.66 | 0.19 | 2.8948E+001 | | 9.3732E+000 |
| | | 785.96* | 1.07 | 4.2065E+000 | | 3.3485E+000 |
| | | 839.04 | 0.59 | 1.1011E+001 | | 1.1085E+001 |
| + | Ra-224 | 81.07 | 0.13 | 8.0284E+001 | 1.01E+000 | -2.3001E+001 |
| | | 83.78* | 0.22 | 3.3319E+001 | | 2.4357E+001 |
| | | 240.99* | 4.10 | 1.0128E+000 | | 3.4605E+000 |
| + | Ra-226 | 81.07 | 0.20 | 5.1187E+001 | 1.88E+000 | -1.4665E+001 |
| | | 83.78* | 0.33 | 2.1135E+001 | | 1.5450E+001 |
| | | 94.90 | 0.15 | 5.3428E+001 | | -2.6339E+000 |
| | | 186.21* | 3.59 | 1.8813E+000 | | 2.3767E+000 |
| + | Ac-228 | 99.50 | 1.26 | 5.6573E+000 | 2.19E-001 | 4.7011E+000 |
| | | 129.07* | 2.50 | 2.2025E+000 | | 1.7403E+000 |
| | | 209.25* | 3.97 | 1.3876E+000 | | 2.5126E+000 |
| | | 270.24* | 3.55 | 1.9533E+000 | | 3.0803E+000 |
| | | 328.00* | 3.04 | 1.5518E+000 | | 2.6375E+000 |
| | | 338.32* | 11.40 | 5.3767E-001 | | 2.4987E+000 |
| | | 409.46* | 2.02 | 2.4002E+000 | | 2.4371E+000 |

| | Nuclide Name | Energy (keV) | Yield (%) | Line MDA (pCi/GWET) | Nuclide MDA (pCi/GWET) | Activity (pCi/GWET) |
|---|---|---|---|---|---|---|
| + | Ac-228 | 463.00* | 4.45 | 1.1465E+000 | 2.19E-001 | 2.3060E+000 |
| | | 755.31 | 1.03 | 6.1015E+000 | | 2.5213E+000 |
| | | 772.29* | 1.52 | 2.3554E+000 | | 8.0208E-001 |
| | | 794.94* | 4.31 | 1.2537E+000 | | 2.8314E+000 |
| | | 835.70* | 1.70 | 3.1515E+000 | | 1.3951E+000 |
| | | 911.20* | 26.20 | 2.3134E-001 | | 2.9090E+000 |
| | | 964.79* | 4.99 | 7.9719E-001 | | 2.7026E+000 |
| | | 968.96* | 15.90 | 2.1937E-001 | | 2.8348E+000 |
| | | 1588.20* | 3.06 | 1.0257E+000 | | 3.1594E+000 |
| | | 1630.62* | 1.52 | 2.0039E+000 | | 3.0895E+000 |
| + | Th-228 | 84.37* | 1.26 | 5.7383E+000 | 5.74E+000 | 4.1948E+000 |
| | | 131.61 | 0.13 | 5.3702E+001 | | 6.0486E+000 |
| | | 166.41 | 0.10 | 6.0550E+001 | | -7.3136E+000 |
| | | 215.98 | 0.25 | 2.5702E+001 | | 2.0597E+000 |
| | Pa-234m | 258.23 | 0.07 | 7.6670E+001 | 6.80E+000 | 2.6557E+001 |
| | | 742.81 | 0.09 | 6.5300E+001 | | 2.6506E+001 |
| | | 766.36 | 0.32 | 2.0541E+001 | | 2.3650E+000 |
| | | 786.27 | 0.05 | 1.1626E+002 | | 1.0447E+002 |
| | | 1001.03 | 0.85 | 6.8011E+000 | | 5.3008E-001 |
| | | 1737.77 | 0.02 | 2.4330E+002 | | -1.1645E+002 |
| | Th-234 | 63.30 | 3.75 | 5.7288E+000 | 2.04E+000 | 3.5487E+000 |
| | | 92.59 | 4.33 | 2.0409E+000 | | 5.4492E+000 |
| | | 112.81 | 0.22 | 2.9087E+001 | | 1.4195E+000 |

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = Calculated MDA is zero due to zero counts in the region, or the region is outside the spectrum, or has not been calculated
@ = Half-life too short to be able to perform the decay correction

**********
***** N U C L I D E I D E N T I F I C A T I O N R E P O R T *****
**********

Sample Title: HTC-A01-S008-2430-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

..... IDENTIFIED NUCLIDES .....

| Nuclide Name | Id Confidence | Energy (keV) | | Yield (%) | Activity (pCi/GWET) | Activity Uncertainty |
|---|---|---|---|---|---|---|
| K-40 | 0.990 | 1460.82* | | 10.55 | 1.34316E+001 | 4.78847E-001 |
| Eu-152m | 0.998 | 89.85* | | 69.90 | 1.51455E-001 | 1.33950E-002 |
| Tl-208 | 0.945 | 72.80 | @ | 2.02 | | |
| | | 74.97* | @ | 3.41 | 8.57288E+000 | 5.12934E-001 |
| | | 84.90* | @ | 1.51 | 3.50033E+000 | 6.42342E-001 |
| | | 277.36* | | 6.31 | 6.43997E-001 | 1.17004E-001 |
| | | 510.77* | @ | 22.60 | 1.14881E+000 | 9.41292E-002 |
| | | 583.19* | | 84.50 | 8.29530E-001 | 3.48409E-002 |
| | | 763.13 | @ | 1.81 | | |
| | | 860.56* | | 12.42 | 7.85532E-001 | 1.02909E-001 |
| TL-208e | 0.961 | 1592.53* | | 99.16 | 3.96802E-002 | 7.21238E-003 |
| Bi-211 | 0.918 | 351.03* | | 13.00 | 2.70301E+000 | 1.51491E-001 |
| Bi-212 | 0.949 | 39.86 | @ | 1.06 | | |
| | | 727.33* | | 6.74 | 2.77877E+000 | 2.31548E-001 |
| | | 785.37* | | 1.11 | 3.36660E+000 | 9.60154E-001 |
| | | 1620.74* | | 1.51 | 2.58892E+000 | 6.85479E-001 |
| | | 1806.00 | @ | 0.09 | | |
| Pb-212 | 0.986 | 74.81* | | 10.40 | 2.81091E+000 | 1.86709E-001 |
| | | 77.11* | | 17.50 | 2.31181E+000 | 1.32063E-001 |
| | | 87.30* | | 7.81 | 1.84169E+000 | 1.53478E-001 |
| | | 115.18 | @ | 0.59 | | |
| | | 238.63* | | 43.30 | 2.62257E+000 | 9.45839E-002 |
| | | 300.09* | | 3.28 | 2.62268E+000 | 3.65714E-001 |
| Bi-214 | 0.729 | 76.86* | @ | 0.43 | 9.10550E+001 | 5.29235E+000 |
| | | 89.81* | @ | 0.24 | 4.31329E+001 | 4.11661E+000 |
| | | 386.77 | @ | 0.30 | | |
| | | 454.77 | @ | 0.29 | | |
| | | 609.31* | | 45.49 | 9.08643E-001 | 4.85941E-002 |
| | | 665.45 | @ | 1.53 | | |
| | | 703.11 | @ | 0.48 | | |
| | | 719.86 | @ | 0.39 | | |
| | | 768.36* | | 4.89 | 6.16376E-001 | 1.10093E-001 |
| | | 786.10* | @ | 0.31 | 1.15578E+001 | 3.78548E+000 |
| | | 806.17* | @ | 1.26 | 3.93291E-001 | 5.25578E-001 |
| | | 934.06* | | 3.10 | 8.45056E-001 | 2.89138E-001 |
| | | 964.08* | @ | 0.36 | 3.56218E+001 | 2.88723E+000 |
| | | 1051.96 | @ | 0.31 | | |
| | | 1120.29* | | 14.91 | 1.05604E+000 | 1.06516E-001 |
| | | 1133.66 | @ | 0.25 | | |
| | | 1155.19 | @ | 1.63 | | |
| | | 1207.68 | @ | 0.45 | | |

| Nuclide Name | Id Confidence | Energy (keV) | | Yield (%) | Activity (pCi/GWET) | Activity Uncertainty |
|---|---|---|---|---|---|---|
| Bi-214 | 0.729 | 1238.11* | | 5.79 | 1.21281E+000 | 2.52437E-001 |
| | | 1280.96 | @ | 1.43 | | |
| | | 1377.67 | | 4.00 | | |
| | | 1385.31 | @ | 0.76 | | |
| | | 1401.50* | @ | 1.27 | 1.40594E+000 | 5.65311E-001 |
| | | 1407.98 | @ | 2.15 | | |
| | | 1509.23 | @ | 2.11 | | |
| | | 1538.50 | @ | 0.38 | | |
| | | 1543.32 | @ | 0.20 | | |
| | | 1583.22 | @ | 0.69 | | |
| | | 1594.73 | @ | 0.25 | | |
| | | 1599.31 | @ | 0.23 | | |
| | | 1661.28 | @ | 1.15 | | |
| | | 1683.99 | @ | 0.22 | | |
| | | 1729.59* | @ | 2.92 | 1.05083E+000 | 2.63515E-001 |
| | | 1764.49* | | 15.40 | 1.27782E+000 | 9.67001E-002 |
| | | 1847.42 | @ | 2.11 | | |
| | | 1873.16 | @ | 0.22 | | |
| | | 2118.55 | @ | 1.14 | | |
| | | 2204.21 | @ | 5.08 | | |
| Pb-214 | 0.954 | 53.28 | @ | 1.20 | | |
| | | 74.81* | | 6.44 | 4.35230E+000 | 2.96571E-001 |
| | | 77.11* | | 10.80 | 3.59162E+000 | 2.21947E-001 |
| | | 87.30* | | 4.84 | 2.84936E+000 | 2.43503E-001 |
| | | 242.00* | | 7.43 | 1.83085E+000 | 1.13803E-001 |
| | | 258.87 | @ | 0.52 | | |
| | | 274.80 | @ | 0.47 | | |
| | | 295.22* | | 19.30 | 9.85152E-001 | 7.83135E-002 |
| | | 351.93* | | 37.60 | 9.31146E-001 | 5.13454E-002 |
| | | 462.00* | @ | 0.22 | 4.45208E+001 | 5.75829E+000 |
| | | 533.66 | @ | 0.19 | | |
| | | 785.96* | @ | 1.07 | 3.34853E+000 | 9.86811E-001 |
| | | 839.04 | @ | 0.59 | | |
| Ra-224 | 0.933 | 81.07 | @ | 0.13 | | |
| | | 83.78* | @ | 0.22 | 2.43571E+001 | 4.55906E+000 |
| | | 240.99* | | 4.10 | 3.46047E+000 | 2.13127E-001 |
| Ra-226 | 0.868 | 81.07 | @ | 0.20 | | |
| | | 83.78* | @ | 0.33 | 1.54503E+001 | 2.89106E+000 |
| | | 94.90 | @ | 0.15 | | |
| | | 186.21* | | 3.59 | 2.37668E+000 | 4.23905E-001 |
| Ac-228 | 0.946 | 99.50 | @ | 1.26 | | |
| | | 129.07* | @ | 2.50 | 1.74034E+000 | 4.86416E-001 |
| | | 209.25* | | 3.97 | 2.51261E+000 | 3.35498E-001 |
| | | 270.24* | | 3.55 | 3.08031E+000 | 4.58564E-001 |
| | | 328.00* | | 3.04 | 2.63755E+000 | 3.82783E-001 |
| | | 338.32* | | 11.40 | 2.49869E+000 | 1.81908E-001 |
| | | 409.46* | @ | 2.02 | 2.43708E+000 | 5.51200E-001 |
| | | 463.00* | | 4.45 | 2.30601E+000 | 3.09202E-001 |
| | | 755.31 | @ | 1.03 | | |
| | | 772.29* | @ | 1.52 | 8.02082E-001 | 3.10415E-001 |

| Nuclide Name | Id Confidence | Energy (keV) | Yield (%) | Activity (pCi/GWET) | Activity Uncertainty |
|---|---|---|---|---|---|
| Ac-228 | 0.946 | 794.94* | 4.31 | 2.83140E+000 | 3.32199E-001 |
| | | 835.70* @ | 1.70 | 1.39506E+000 | 6.92423E-001 |
| | | 911.20* | 26.20 | 2.90899E+000 | 1.40848E-001 |
| | | 964.79* | 4.99 | 2.70264E+000 | 2.20183E-001 |
| | | 968.96* | 15.90 | 2.83481E+000 | 1.48685E-001 |
| | | 1588.20* | 3.06 | 3.15943E+000 | 3.40210E-001 |
| | | 1630.62* @ | 1.52 | 3.08950E+000 | 4.98457E-001 |
| Th-228 | 0.502 | 84.37* | 1.26 | 4.19484E+000 | 7.72665E-001 |
| | | 131.61 @ | 0.13 | | |
| | | 166.41 @ | 0.10 | | |
| | | 215.98 | 0.25 | | |

* = Energy line found in the spectrum.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.45
Errors quoted at 1.000 sigma

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***** I N T E R F E R E N C E C O R R E C T E D R E P O R T *****
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| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/GWET) | Wt mean Activity Uncertainty |
|---|---|---|---|---|---|
| | K-40 | | 0.990 | 1.343163E+001 | 4.788471E-001 |
| X | Mn-54 | | 0.939 | | |
| X | Cd-109 | | 0.914 | | |
| | Eu-152m | | 0.998 | 1.481085E-001 | 1.333236E-002 |
| X | Tm-170 | | 0.992 | | |
| | Tl-208 | @ | 0.945 | 8.115538E-001 | 3.117839E-002 |
| | TL-208e | | 0.961 | 3.968016E-002 | 7.212376E-003 |
| | Bi-211 | | 0.918 | 5.713340E-001 | 2.535045E-001 |
| | Bi-212 | @ | 0.949 | 2.740509E+000 | 2.095938E-001 |
| | Pb-212 | @ | 0.986 | 2.124590E+000 | 6.424406E-002 |
| | Bi-214 | @ | 0.729 | 9.530261E-001 | 3.688686E-002 |
| | Pb-214 | @ | 0.954 | 7.343295E-001 | 7.133063E-002 |
| | Ra-224 | @ | 0.933 | 2.072522E+000 | 2.486344E-001 |
| | Ra-226 | @ | 0.868 | 2.376677E+000 | 4.220400E-001 |
| | Ac-228 | @ | 0.946 | 2.764092E+000 | 6.056894E-002 |
| | Th-228 | @ | 0.502 | 2.220048E+000 | 7.803526E-001 |
| X | Th-231 | | 0.830 | | |

? = Nuclide is part of an undetermined solution
X = Nuclide rejected by the interference analysis
@ = Nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

********** U N I D E N T I F I E D P E A K S **********

Peak Locate Performed on: 6/24/2017 8:41:56 PM
Peak Locate From Channel: 100
Peak Locate To Channel: 8192

| Peak No. | Energy (keV) | Peak Size in Counts per Second | Peak CPS % Uncertainty | Peak Type | Tol. Nuclide |
|---|---|---|---|---|---|
| m 6 | 93.02 | 7.7582E-002 | 7.85 | Tol. | Yb-169<br>Th-227<br>Th-234 |
| 7 | 108.73 | 2.6210E-003 | 253.89 | | |
| 9 | 154.33 | 1.3673E-002 | 46.88 | Sum | |
| 38 | 1078.59 | 4.5205E-003 | 47.65 | S-Esc. | |
| 43 | 1496.24 | 4.7834E-003 | 29.55 | Tol. | Bi-206 |
| m 48 | 1638.80 | 3.3568E-003 | 28.87 | Sum | |

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet

Errors quoted at 1.000 sigma