Date: _____

9626 Niagara Falls Blvd Onsite Gamma Spec Screening Lab

Gamma Spectroscopy Detector work sheet.

Counted by (Initial,date)	Geometry Description	Analysis Number/Sample ID/Remarks	Sample Collection mmddyy hh:mm	Sample Quantity	Sample Units (GWET,GDRY,L, ft^3, etc)	Count Time (s)	Report Matches Sample Parameters (Initial, date)
CC/110416	450 cc SOIL	Duplicate N002-P05-S015-2230-02	10-25-16 1500	627.4	GWET	7200	
CC/110716	450 cc SOIL	P006-S002-0004-01	10/14/16 1515	363.4	GWET	7200	
CC/110716	450 cc SOIL	P006-S002-0412-01	10/14/16 1516	688.2	GWET	7200	
CC/110716	450 cc SOIL	P006-S002-1218-01	10/14/16 1516	570.5	GWET	7200	
CC/110916	450 cc SOIL	Duplicate P006-S001-0412-02	10/14/16 1432	652.7	GWET	7200	
CC/110716	450 cc SOIL	P006-S001-0004-01	10/14/16 1432	367.2	GWET	7200	
CC/110816	450 cc SOIL	P007-S001-0006-01	10/14/16 1545	458.4	GWET	7200	
CC/110816	450 cc SOIL	P007-S001-0612-01	10/14/16 1545	579.6	GWET	7200	
CC/110816	450 cc SOIL	P007-S001-1218-01	10/14/16 1546	564.5	GWET	7200	
CC/110816	450 cc SOIL	P006-S001-1218-01	10/14/16 1432	455.6	GWET	7200	

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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-P006-S001-0412-02.CNF

Report Generated On	: 11/9/2016 3:10:12 PM
Sample Title	: P006-S001-0412-02
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	: 6.527E+002 GWET
Sample Taken On	: 10/14/2016 2:32:00 PM
Acquisition Started	: 11/9/2016 1:09:55 PM
Live Time	: 7200.0 seconds
Real Time	: 7214.9 seconds
Dead Time	: 0.21 %

Energy Calibration Used Done On	: 10/24/2016
Efficiency Calibration Used Done On	: 9/27/2016
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: P006-S001-0412-02
Peak Analysis Performed on: 11/9/2016 3:10:12 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
	1	239-	260	253.74	63.39	0.85	1.61E+003	205.38	1.08E+004
M	2	289-	399	299.93	74.94	1.08	4.14E+003	95.83	8.50E+003
m	3	289-	399	309.06	77.22	1.08	1.25E+004	185.55	8.23E+003
m	4	289-	399	317.89	79.43	1.08	6.71E+002	72.82	8.01E+003
m	5	289-	399	325.23	81.27	1.09	7.87E+002	88.10	7.91E+003
m	6	289-	399	336.19	84.00	1.09	4.54E+002	28.68	7.75E+003
m	7	289-	399	349.52	87.34	1.10	6.34E+003	152.07	8.05E+003
m	8	289-	399	359.99	89.96	1.10	1.03E+003	48.96	7.32E+003
m	9	289-	399	370.98	92.70	1.10	5.66E+003	100.75	7.11E+003
m	10	289-	399	379.31	94.79	1.11	9.91E+002	93.53	6.95E+003
m	11	289-	399	393.91	98.44	1.11	4.64E+002	64.66	6.29E+003
	12	443-	459	451.70	112.88	0.61	3.83E+002	167.79	8.86E+003
	13	567-	582	576.06	143.98	1.20	1.26E+003	166.95	8.86E+003
	14	609-	625	617.38	154.31	1.08	6.27E+002	174.24	9.50E+003
	15	649-	663	654.45	163.58	0.40	3.53E+002	148.66	7.55E+003
	16	735-	754	744.39	186.07	1.23	9.95E+003	206.30	9.31E+003
	17	816-	828	821.92	205.45	1.06	4.14E+002	116.72	5.01E+003
M	18	937-	976	944.03	235.98	1.07	7.97E+002	58.26	4.52E+003
m	19	937-	976	954.56	238.61	1.07	4.50E+002	53.71	4.15E+003
m	20	937-	976	968.12	242.00	1.07	1.01E+004	117.35	4.34E+003
M	21	1013-	1041	1024.78	256.17	1.23	4.10E+002	53.86	4.22E+003
m	22	1013-	1041	1035.58	258.87	1.23	7.43E+002	61.57	3.62E+003
M	23	1066-	1106	1077.97	269.47	1.23	8.50E+002	58.89	3.97E+003
m	24	1066-	1106	1084.91	271.20	1.23	6.80E+002	55.33	3.93E+003
m	25	1066-	1106	1098.20	274.52	1.23	5.19E+002	53.55	3.86E+003
	26	1171-	1192	1180.87	295.19	1.15	2.31E+004	202.08	4.74E+003
	27	1194-	1206	1200.06	299.99	1.20	3.01E+002	83.54	2.53E+003
	28	1290-	1303	1295.05	323.74	1.14	1.97E+002	85.46	2.57E+003
	29	1313-	1324	1319.16	329.77	0.85	1.45E+002	76.51	2.27E+003
	30	1346-	1361	1352.99	338.23	1.00	2.61E+002	92.92	2.78E+003
	31	1393-	1419	1407.48	351.85	1.21	4.06E+004	243.59	4.26E+003
M	32	1540-	1564	1546.91	386.71	1.19	3.18E+002	39.88	1.92E+003
m	33	1540-	1564	1556.16	389.02	1.19	3.43E+002	40.41	2.03E+003
M	34	1602-	1632	1606.69	401.66	1.35	3.72E+002	42.32	1.67E+003
m	35	1602-	1632	1620.16	405.03	1.36	3.23E+002	42.62	2.21E+003
	36	1774-	1786	1779.68	444.91	0.44	8.89E+001	59.10	1.29E+003
	37	1811-	1826	1819.37	454.83	0.53	1.80E+002	68.75	1.51E+003
	38	1838-	1854	1849.14	462.28	1.52	2.01E+002	69.09	1.46E+003
	39	1872-	1883	1877.56	469.38	0.98	1.13E+002	52.54	1.05E+003
	40	1914-	1927	1921.15	480.28	0.91	3.34E+002	56.69	1.05E+003
	41	1940-	1955	1947.67	486.91	1.30	3.22E+002	65.10	1.30E+003
	42	2031-	2056	2042.02	510.50	2.10	7.06E+002	93.84	1.89E+003

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	43	2269-	2282	2276.76	569.19	0.65	6.68E+001	50.10	8.87E+002
M	44	2312-	2343	2319.95	579.99	1.08	2.17E+002	30.49	9.28E+002
m	45	2312-	2343	2332.10	583.02	1.08	1.03E+002	25.61	9.28E+002
	46	2424-	2447	2436.49	609.12	1.35	3.23E+004	194.08	1.33E+003
	47	2654-	2673	2661.09	665.28	1.26	9.43E+002	61.34	7.92E+002
	48	2805-	2825	2810.68	702.68	1.37	3.29E+002	58.27	8.39E+002
	49	2872-	2886	2878.31	719.59	0.82	2.14E+002	44.92	6.24E+002
	50	2964-	2978	2970.87	742.73	0.31	6.01E+001	45.85	7.06E+002
	51	3053-	3087	3072.59	768.16	1.43	3.25E+003	99.26	1.23E+003
	52	3130-	3156	3142.64	785.68	1.58	6.97E+002	71.03	9.94E+002
	53	3214-	3235	3223.93	806.00	1.46	7.30E+002	61.66	8.11E+002
	54	3273-	3291	3284.39	821.12	0.61	1.13E+002	49.27	6.86E+002
	55	3321-	3338	3326.39	831.62	0.57	8.06E+001	48.26	6.87E+002
	56	3347-	3364	3355.11	838.80	1.42	3.57E+002	51.63	7.07E+002
	57	3634-	3652	3644.21	911.08	0.41	9.33E+001	51.03	7.38E+002
	58	3721-	3747	3735.62	933.93	1.48	1.75E+003	75.34	8.97E+002
	59	3849-	3865	3855.72	963.96	1.41	1.34E+002	44.77	5.93E+002
	60	3989-	4014	4003.72	1000.97	1.45	5.24E+002	60.23	7.30E+002
	61	4202-	4217	4208.24	1052.10	0.51	1.69E+002	38.79	4.44E+002
	62	4271-	4295	4280.37	1070.13	0.60	1.55E+002	50.50	5.79E+002
	63	4465-	4493	4480.97	1120.29	1.73	7.37E+003	102.31	6.59E+002
	64	4528-	4543	4534.85	1133.76	0.87	5.90E+001	35.73	4.05E+002
	65	4606-	4635	4620.80	1155.25	1.64	9.05E+002	59.91	5.65E+002
	66	4720-	4733	4727.56	1181.94	1.08	8.88E+001	28.04	2.53E+002
	67	4814-	4839	4830.69	1207.73	1.36	1.94E+002	48.76	5.14E+002
	68	4941-	4971	4952.70	1238.23	1.77	2.78E+003	73.33	5.15E+002
	69	5004-	5025	5011.99	1253.05	1.29	2.12E+002	39.18	3.52E+002
	70	5113-	5136	5124.55	1281.20	1.84	6.24E+002	50.00	4.68E+002
	71	5499-	5522	5511.47	1377.94	1.55	1.88E+003	59.95	4.28E+002
	72	5532-	5552	5542.14	1385.60	1.52	3.08E+002	40.48	3.66E+002
M	73	5595-	5644	5606.97	1401.81	1.83	6.17E+002	29.46	3.35E+002
m	74	5595-	5644	5632.81	1408.27	1.84	1.06E+003	36.91	3.52E+002
	75	5835-	5852	5844.47	1461.19	1.06	1.28E+002	35.36	3.45E+002
	76	6028-	6051	6038.40	1509.68	1.77	8.69E+002	50.70	4.20E+002
M	77	6147-	6182	6155.17	1538.87	1.51	1.63E+002	20.17	2.97E+002
m	78	6147-	6182	6175.71	1544.01	1.52	1.11E+002	18.21	2.89E+002
	79	6323-	6348	6334.20	1583.64	0.88	2.80E+002	39.94	3.09E+002
M	80	6369-	6408	6380.27	1595.15	1.87	1.03E+002	17.43	2.75E+002
m	81	6369-	6408	6398.62	1599.74	1.87	1.01E+002	17.29	2.53E+002
	82	6637-	6660	6647.19	1661.89	1.45	4.19E+002	32.25	1.56E+002
	83	6910-	6932	6921.01	1730.35	1.85	1.18E+003	41.64	1.43E+002
	84	7045-	7076	7061.02	1765.36	1.86	6.22E+003	83.28	1.44E+002
	85	7348-	7369	7357.79	1839.55	2.11	1.46E+002	21.73	8.74E+001
	86	7382-	7404	7393.36	1848.45	2.14	7.85E+002	34.15	9.80E+001
	87	7487-	7504	7496.24	1874.17	0.51	7.52E+001	18.61	8.28E+001
	88	7579-	7596	7588.41	1897.21	1.75	8.08E+001	17.11	6.52E+001
	89	8042-	8055	8048.06	2012.14	1.58	1.81E+001	12.64	5.09E+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 *****
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Detector Name: ERT01
Sample Geometry:
Sample Title: P006-S001-0412-02
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	1.5042E+000	1.50E+000	1.0391E+000
	Co-60	1173.23	99.85	1.9177E-001	1.85E-001	9.1536E-002
		1332.49	99.98	1.8491E-001		3.3826E-002
>		2505.71	0.10	0.0000E+000		0.0000E+000
	Cs-137	32.06	5.54	3.5961E+003	2.36E-001	-4.3446E+002
		661.66	84.99	2.3618E-001		-6.5394E-003
+	Tl-208	72.80	2.02	2.7707E+001	1.30E-001	-7.3085E-002
		74.97*	3.41	9.5750E+000		6.5044E+001
		84.90*	1.51	1.4648E+001		1.1448E+001
		277.36	6.31	3.1121E+000		-4.4084E-001
		510.77*	22.60	9.2270E-001		1.1605E+000
		583.19*	84.50	1.2978E-001		6.0959E-002
		763.13	1.81	1.3371E+001		-1.0308E+000
		860.56	12.42	1.5564E+000		-2.6316E-001
	Bi-212	39.86	1.06	1.9608E+003	2.53E+000	-8.1438E+002
		727.33	6.74	2.5253E+000		-1.2764E+000
		785.37	1.11	1.8599E+001		4.6262E+001
		1620.74	1.51	1.1353E+001		-6.0870E+000
		1806.00	0.09	1.4201E+002		9.3165E+001
+	Pb-212	74.81*	10.40	3.1395E+000	2.93E-001	2.1327E+001
		77.11*	17.50	1.6586E+000		3.4530E+001
		87.30*	7.81	2.6392E+000		2.8221E+001
		115.18	0.59	3.5290E+001		2.7341E+000
		238.63*	43.30	2.9309E-001		2.9363E-001
		300.09*	3.28	3.9423E+000		3.1045E+000
+	Bi-214	76.86*	0.43	6.6406E+001	4.07E-001	1.3825E+003
		89.81*	0.24	7.4039E+001		1.3507E+002
		386.77*	0.30	3.8389E+001		4.1927E+001
		454.77*	0.29	4.8109E+001		2.7404E+001
		609.31*	45.49	4.0731E-001		3.8501E+001
		665.45*	1.53	9.4131E+000		3.5570E+001
		703.11*	0.48	3.2585E+001		4.1228E+001
		719.86*	0.39	3.1087E+001		3.3182E+001
		768.36*	4.89	4.9703E+000		4.2430E+001
		786.10*	0.31	6.4760E+001		1.4597E+002
		806.17*	1.26	1.3633E+001		3.8242E+001
		934.06*	3.10	6.9390E+000		4.1279E+001
		964.08*	0.36	4.1964E+001		2.7523E+001
		1051.96*	0.31	4.3465E+001		4.2678E+001
		1120.29*	14.91	1.4504E+000		4.0932E+001

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Bi-214	1133.66*	0.25	5.4189E+001	4.07E-001	1.9394E+001
		1155.19*	1.63	1.2590E+001		4.6766E+001
		1207.68*	0.45	4.2467E+001		3.7510E+001
		1238.11*	5.79	3.6626E+000		4.2583E+001
		1280.96*	1.43	1.2935E+001		3.9528E+001
		1377.67*	4.00	4.6529E+000		4.4674E+001
		1385.31*	0.76	2.1763E+001		3.8929E+001
		1401.50*	1.27	9.3317E+000		4.6817E+001
		1407.98*	2.15	5.6680E+000		4.7450E+001
		1509.23*	2.11	9.3522E+000		4.1788E+001
		1538.50*	0.38	3.1751E+001		4.4459E+001
		1543.32*	0.20	5.9036E+001		5.7166E+001
		1583.22*	0.69	2.6048E+001		4.2643E+001
		1594.73*	0.25	4.7139E+001		4.3296E+001
		1599.31*	0.23	4.9317E+001		4.6273E+001
		1661.28*	1.15	1.1199E+001		3.9569E+001
		1683.99	0.22	6.8046E+001		1.7559E+001
		1729.59*	2.92	4.2860E+000		4.5273E+001
		1764.49*	15.40	9.4403E-001		4.5766E+001
		1847.42	2.11	1.1995E+001		4.4313E+001
		1873.16	0.22	6.4792E+001		-1.8312E+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	1.6370E+002	6.22E-001	-3.6930E+000
		74.81*	6.44	4.9412E+000		3.3566E+001
		77.11*	10.80	2.6194E+000		5.4531E+001
		87.30*	4.84	4.1506E+000		4.4382E+001
		242.00*	7.43	1.7115E+000		3.9496E+001
		258.87*	0.52	2.2968E+001		4.2801E+001
		274.80*	0.47	2.7102E+001		3.4166E+001
		295.22*	19.30	1.0521E+000		3.8938E+001
		351.93*	37.60	6.2168E-001		3.9455E+001
		462.00*	0.22	6.3611E+001		4.0369E+001
		533.66	0.19	9.5433E+001		8.1221E+001
		785.96*	1.07	1.8762E+001		4.2289E+001
		839.04*	0.59	2.6169E+001		4.1353E+001
	Ra-224	81.07	0.13	2.7349E+002	6.82E+000	-5.9274E+003
		83.78	0.22	1.5084E+002		-1.0884E+003
		240.99	4.10	6.8195E+000		2.8176E-001
+	Ra-226	81.07*	0.20	1.2065E+002	6.19E+000	1.6155E+002
		83.78*	0.33	6.5720E+001		5.1365E+001
		94.90*	0.15	1.0849E+002		1.9512E+002
		186.21*	3.59	6.1874E+000		7.2649E+001
	Ac-228	99.50	1.26	1.6790E+001	7.95E-001	-2.0447E+000
		129.07	2.50	8.7812E+000		2.7379E-001
		209.25	3.97	5.0951E+000		-1.7982E+000
		270.24	3.55	5.6907E+000		3.1893E+000
		328.00	3.04	6.4260E+000		4.1697E+000
		338.32	11.40	1.7014E+000		1.2412E+000
		409.46	2.02	9.4700E+000		3.0383E+000

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
	Ac-228	463.00	4.45	3.9436E+000	7.95E-001	1.2699E+000
		755.31	1.03	1.6975E+001		2.0858E+000
		772.29	1.52	1.8864E+001		1.7761E+000
		794.94	4.31	4.1795E+000		2.4262E+000
		835.70	1.70	1.2621E+001		1.9197E+000
		911.20	26.20	7.9473E-001		3.4112E-001
		964.79	4.99	4.2134E+000		5.5751E+000
		968.96	15.90	1.3099E+000		-2.6896E-001
		1588.20	3.06	7.3187E+000		1.7502E-001
		1630.62	1.52	1.0722E+001		-3.4526E+000
	Th-228	84.37*	1.26	1.7554E+001	1.76E+001	1.3720E+001
		131.61	0.13	1.6744E+002		7.5433E+000
		166.41	0.10	2.0462E+002		-1.4915E+001
		215.98	0.25	7.7818E+001		-4.8392E+001
+	Pa-234m	258.23*	0.07	1.6307E+002	2.37E+001	3.0389E+002
		742.81*	0.09	1.4126E+002		3.9881E+001
		766.36	0.32	8.9376E+001		-5.8089E+000
		786.27*	0.05	3.7454E+002		8.4418E+002
		1001.03*	0.85	2.3724E+001		4.7036E+001
		1737.77	0.02	9.2486E+002		1.6825E+002
+	Th-234	63.30*	3.75	2.6865E+001	3.92E+000	4.5082E+001
		92.59*	4.33	3.9178E+000		3.9147E+001
		112.81*	0.22	9.5792E+001		4.7219E+001

+ = 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: P006-S001-0412-02
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	0.978	1460.82*	10.55	1.03913E+000	3.34157E-001
Cd-109	0.925	88.03*	3.63	6.15939E+001	2.55847E+000
Eu-152m	0.998	89.85*	69.90	4.73204E-001	2.74508E-002
Tl-208	0.729	72.80 @	2.02		
		74.97* @	3.41	6.50438E+001	2.71261E+000
		84.90* @	1.51	1.14481E+001	8.21132E-001
		277.36	6.31		
		510.77* @	22.60	1.16054E+000	2.07229E-001
		583.19*	84.50	6.09587E-002	1.65163E-002
		763.13 @	1.81		
		860.56	12.42		
Bi-211	0.898	351.03*	13.00	1.14372E+002	4.71074E+000
Pb-211	0.681	74.81* @	0.23	9.41953E+002	5.67491E+001
		77.11* @	0.39	1.52518E+003	8.84758E+001
		87.30* @	0.17	1.24444E+003	7.68373E+001
		404.85*	3.78	3.45342E+000	4.76150E-001
		427.09	1.76		
		832.01*	3.52	1.54969E+000	9.28941E-001
Pb-212	0.986	74.81*	10.40	2.13269E+001	1.08145E+000
		77.11*	17.50	3.45301E+001	1.63858E+000
		87.30*	7.81	2.82211E+001	1.46603E+000
		115.18 @	0.59		
		238.63*	43.30	2.93632E-001	3.92228E-002
		300.09*	3.28	3.10445E+000	8.70002E-001
Bi-214	0.952	76.86* @	0.43	1.38247E+003	6.72562E+001
		89.81* @	0.24	1.35073E+002	9.21282E+000
		386.77* @	0.30	4.19265E+001	5.52921E+000
		454.77* @	0.29	2.74043E+001	1.05149E+001
		609.31*	45.49	3.85011E+001	1.20105E+000
		665.45* @	1.53	3.55696E+001	2.52571E+000
		703.11* @	0.48	4.12282E+001	7.44116E+000
		719.86* @	0.39	3.31817E+001	7.07929E+000
		768.36*	4.89	4.24301E+001	1.67840E+000
		786.10* @	0.31	1.45967E+002	2.80753E+001
		806.17* @	1.26	3.82420E+001	3.36225E+000
		934.06*	3.10	4.12789E+001	2.02516E+000
		964.08* @	0.36	2.75231E+001	9.28431E+000
		1051.96* @	0.31	4.26781E+001	9.93314E+000
		1120.29*	14.91	4.09316E+001	1.15526E+000
		1133.66* @	0.25	1.93944E+001	1.17623E+001
		1155.19* @	1.63	4.67658E+001	3.31065E+000

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Bi-214	0.952	1207.68*	@	0.45	3.75096E+001	9.55243E+000
		1238.11*		5.79	4.25834E+001	1.65334E+000
		1280.96*	@	1.43	3.95284E+001	3.36413E+000
		1377.67*		4.00	4.46745E+001	1.92380E+000
		1385.31*	@	0.76	3.89290E+001	5.28340E+000
		1401.50*	@	1.27	4.68171E+001	2.62007E+000
		1407.98*	@	2.15	4.74499E+001	2.30872E+000
		1509.23*	@	2.11	4.17885E+001	2.76012E+000
		1538.50*	@	0.38	4.44592E+001	5.86127E+000
		1543.32*	@	0.20	5.71658E+001	1.71541E+001
		1583.22*	@	0.69	4.26430E+001	6.22776E+000
		1594.73*	@	0.25	4.32956E+001	1.01603E+001
		1599.31*	@	0.23	4.62734E+001	1.44976E+001
		1661.28*	@	1.15	3.95695E+001	3.39149E+000
		1683.99	@	0.22		
		1729.59*	@	2.92	4.52729E+001	2.19353E+000
		1764.49*		15.40	4.57658E+001	1.71144E+000
		1847.42	@	2.11		
		1873.16	@	0.22		
		2118.55	@	1.14		
		2204.21	@	5.08		
Pb-214	0.988	53.28	@	1.20		
		74.81*		6.44	3.35662E+001	1.77697E+000
		77.11*		10.80	5.45306E+001	2.88923E+000
		87.30*		4.84	4.43821E+001	2.45391E+000
		242.00*		7.43	3.94960E+001	1.88430E+000
		258.87*	@	0.52	4.28007E+001	4.09137E+000
		274.80*	@	0.47	3.41662E+001	3.88454E+000
		295.22*		19.30	3.89380E+001	1.65792E+000
		351.93*		37.60	3.94554E+001	1.57624E+000
		462.00*	@	0.22	4.03694E+001	1.40285E+001
		533.66	@	0.19		
		785.96*	@	1.07	4.22894E+001	5.44374E+000
		839.04*	@	0.59	4.13531E+001	6.09556E+000
Rn-219	0.986	76.86*	@	0.56	1.05401E+003	1.74038E+002
		79.29*	@	0.93	3.12635E+001	6.17385E+000
		89.80*	@	0.42	7.86464E+001	1.38626E+001
		130.60	@	0.13		
		271.23*		10.80	1.95680E+000	2.19363E-001
		401.81*		6.60	2.26698E+000	3.20635E-001
Ra-223	0.933	81.07*		15.30	2.08476E+000	2.44370E-001
		83.78*		25.40	6.64772E-001	4.94449E-002
		94.90*		11.50	2.53369E+000	2.59866E-001
		122.32	@	1.21		
		144.24*		3.27	9.82986E+000	1.37841E+000
		154.21*		5.70	2.82770E+000	7.96878E-001
		158.63	@	0.69		
		179.54	@	0.15		
		269.46*		13.90	1.89217E+000	1.62684E-001
		288.18	@	0.16		

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Ra-223	0.933	323.87*		3.99	1.71035E+000	7.46100E-001
		328.38	@	0.21		
		338.32*		2.84	3.27843E+000	1.17652E+000
		342.87	@	0.22		
		371.68	@	0.49		
		445.03*	@	1.29	2.97818E+000	1.98607E+000
Ra-226	0.996	81.07*	@	0.20	1.61552E+002	1.97877E+001
		83.78*	@	0.33	5.13646E+001	4.13579E+000
		94.90*	@	0.15	1.95118E+002	2.08880E+001
		186.21*		3.59	7.26490E+001	3.73495E+000
Th-227	0.507	50.13		8.40		
		79.69*	@	1.95	1.49103E+001	2.18646E+000
		85.43	@	1.29		
		88.47	@	2.12		
		93.88*	@	1.51	1.92963E+001	2.61997E+000
		210.62	@	1.25		
		235.96*		12.90	1.78238E+000	2.25149E-001
		256.23*		7.00	1.76260E+000	3.00680E-001
		286.09	@	1.74		
		289.59	@	1.90		
		299.98*		2.21	4.50052E+000	1.32473E+000
		304.50	@	1.15		
		329.85*		2.90	1.75930E+000	9.45450E-001
		334.37	@	1.14		
Pa-234m	0.597	258.23*	@	0.07	3.03888E+002	2.85306E+001
		742.81*	@	0.09	3.98805E+001	3.04728E+001
		766.36		0.32		
		786.27*	@	0.05	8.44184E+002	8.91440E+001
		1001.03*		0.85	4.70364E+001	5.58408E+000
		1737.77	@	0.02		
Th-234	0.998	63.30*		3.75	4.50820E+001	6.10553E+000
		92.59*		4.33	3.91466E+001	2.22329E+000
		112.81*	@	0.22	4.72185E+001	2.12716E+001

* = 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

****
***** 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 *****
****

	Nuclide Name		Nuclide Id Confidence	Wt mean Activity (pCi/GWET)	Wt mean Activity Uncertainty
	K-40		0.978	1.039132E+000	3.341569E-001
	Cd-109		0.925	6.535558E+000	2.772594E+000
	Eu-152m		0.998	3.144166E-001	2.723454E-002
X	Tm-170		0.990		
	Tl-208	@	0.729	5.850758E-002	1.650788E-002
	Bi-211		0.898	1.038456E+000	5.022890E+000
	Pb-211	@	0.681	3.060908E+000	4.214410E-001
	Pb-212	@	0.986	2.966149E-001	3.906302E-002
	Bi-214	@	0.952	4.179614E+001	5.611049E-001
	Pb-214	@	0.988	3.909718E+001	8.331380E-001
	Rn-219	@	0.986	2.054664E+000	1.493083E-001
	Ra-223	@	0.933	1.913904E-001	5.924689E-002
	Ra-226	@	0.996	5.863310E+001	3.383579E+000
	Th-227	@	0.507	1.844943E+000	1.269934E-001
X	Th-228		0.486		
X	Th-231		0.995		
	Pa-234m	@	0.597	4.703637E+001	5.584078E+000
	Th-234	@	0.998	3.984147E+001	2.089095E+000

? = 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: 11/9/2016 3:10:12 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 11	98.44	6.4412E-002	13.94	D-Esc.	
15	163.58	4.8961E-002	42.17	Sum	
17	205.45	5.7508E-002	28.19	Sum	
m 33	389.02	4.7588E-002	11.79	Sum	
39	469.38	1.5659E-002	46.60	Sum	
40	480.28	4.6383E-002	16.97	Sum	
41	486.91	4.4748E-002	20.21	D-Esc.	
43	569.19	9.2825E-003	74.96	Sum	
M 44	579.99	3.0115E-002	14.06	Sum	
54	821.12	1.5764E-002	43.41	Sum	
57	911.08	1.2224E-002	58.02	Sum	
62	1070.13	2.1525E-002	32.58	Sum	
66	1181.94	1.2332E-002	31.58	Sum	
69	1253.05	2.9501E-002	18.45	Sum	
85	1839.55	2.0227E-002	14.92	Sum	
86	1848.45	1.0903E-001	4.35	Sum	
87	1874.17	1.0449E-002	24.73	Sum	
88	1897.21	1.1221E-002	21.18	Sum	
89	2012.14	2.5146E-003	69.79		

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

Errors quoted at 1.000 sigma

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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-P006-S001-0004-01.CNF

Report Generated On	: 11/7/2016 7:42:19 PM
Sample Title	: P006-S001-0004-01
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	: 3.672E+002 GWET
Sample Taken On	: 10/14/2016 2:32:00 PM
Acquisition Started	: 11/7/2016 5:42:15 PM
Live Time	: 7200.0 seconds
Real Time	: 7201.8 seconds
Dead Time	: 0.02 %

Energy Calibration Used Done On	: 10/24/2016
Efficiency Calibration Used Done On	: 9/27/2016
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: P006-S001-0004-01
Peak Analysis Performed on: 11/7/2016 7:42:19 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
	1	250-	258	253.64	63.37	0.71	7.30E+001	24.77	2.53E+002
M	2	293-	315	299.95	74.94	1.04	3.04E+002	25.15	5.04E+002
m	3	293-	315	309.05	77.22	1.04	4.70E+002	29.47	5.17E+002
M	4	343-	377	349.26	87.27	1.01	1.96E+002	21.74	4.08E+002
m	5	343-	377	360.34	90.04	1.02	8.45E+001	17.84	4.05E+002
m	6	343-	377	371.15	92.75	1.02	2.58E+002	23.69	4.02E+002
	7	739-	753	744.82	186.17	1.20	3.71E+002	37.36	3.52E+002
M	8	948-	974	954.81	238.67	1.23	6.04E+002	28.98	2.69E+002
m	9	948-	974	968.12	242.00	1.24	4.16E+002	24.31	2.29E+002
	10	1174-	1188	1180.88	295.19	1.17	8.27E+002	38.06	2.16E+002
	11	1195-	1205	1200.05	299.99	0.38	2.40E+001	19.94	1.56E+002
	12	1344-	1360	1353.18	338.27	1.03	1.16E+002	26.47	1.87E+002
	13	1396-	1418	1407.56	351.87	1.19	1.53E+003	48.48	2.13E+002
	14	1579-	1588	1583.58	395.88	0.30	1.26E+001	13.41	7.24E+001
	15	1918-	1928	1922.79	480.69	0.51	1.59E+001	13.36	6.81E+001
	16	2031-	2057	2041.77	510.44	1.32	2.08E+002	30.61	1.67E+002
	17	2325-	2340	2332.50	583.12	1.07	2.06E+002	21.46	8.48E+001
	18	2429-	2447	2436.64	609.16	1.37	1.18E+003	38.24	8.59E+001
	19	2637-	2654	2646.09	661.53	1.34	2.83E+002	25.50	1.13E+002
	20	2903-	2915	2909.61	727.41	1.19	3.85E+001	13.10	5.05E+001
	21	3061-	3081	3072.59	768.16	1.15	1.02E+002	18.67	6.80E+001
	22	3636-	3652	3644.15	911.07	1.12	1.36E+002	16.38	4.25E+001
	23	3727-	3745	3736.34	934.11	1.26	6.86E+001	14.32	4.04E+001
	24	3867-	3884	3875.59	968.93	1.18	8.15E+001	16.50	5.85E+001
	25	4471-	4492	4481.23	1120.35	1.70	2.64E+002	21.01	4.70E+001
	26	4945-	4962	4953.24	1238.36	0.88	8.31E+001	12.91	2.59E+001
	27	5506-	5521	5512.32	1378.15	1.53	6.27E+001	10.69	1.73E+001
	28	5835-	5855	5844.66	1461.24	1.88	5.85E+002	26.29	3.00E+001
	29	6915-	6929	6921.79	1730.54	0.60	4.93E+001	7.76	3.75E+000
	30	7051-	7071	7061.48	1765.47	1.87	2.16E+002	15.96	1.05E+001
	31	7389-	7402	7395.39	1848.95	0.61	3.51E+001	6.38	1.89E+000

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: P006-S001-0004-01
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	9.2861E-001	9.29E-001	9.4761E+000
	Co-60	1173.23	99.85	1.1037E-001	1.10E-001	5.6520E-002
		1332.49	99.98	1.1151E-001		7.3454E-002
>		2505.71	0.10	0.0000E+000		0.0000E+000
+	Cs-137	32.06	5.54	1.5894E+003	1.10E-001	8.1303E+001
		661.66*	84.99	1.1047E-001		3.4117E-001
+	Tl-208	72.80	2.02	1.1965E+001	8.90E-002	4.4539E-001
		74.97*	3.41	4.1947E+000		8.4924E+000
		84.90	1.51	9.0481E+000		1.9751E+000
		277.36	6.31	1.3662E+000		4.3326E-001
		510.77*	22.60	5.5682E-001		1.4704E-001
		583.19*	84.50	8.9013E-002		2.2539E-001
		763.13	1.81	6.0169E+000		-1.4048E+000
		860.56	12.42	8.5454E-001		7.6577E-001
+	Bi-212	39.86	1.06	8.5699E+002	9.36E-001	1.8523E+002
		727.33*	6.74	9.3578E-001		6.3969E-001
		785.37	1.11	9.4130E+000		6.5980E+000
		1620.74	1.51	6.7329E+000		2.8375E+000
		1806.00	0.09	9.3175E+001		8.7184E+000
+	Pb-212	74.81*	10.40	1.3754E+000	1.39E-001	2.7845E+000
		77.11*	17.50	7.4751E-001		2.3088E+000
		87.30*	7.81	1.0719E+000		1.5518E+000
		115.18	0.59	1.3866E+001		3.9077E+000
		238.63*	43.30	1.3871E-001		7.0824E-001
		300.09*	3.28	1.6928E+000		4.3802E-001
+	Bi-214	76.86*	0.43	2.9981E+001	1.73E-001	9.2602E+001
		89.81*	0.24	3.1365E+001		1.9632E+001
		386.77	0.30	2.7013E+001		4.1540E+000
		454.77	0.29	2.9513E+001		-2.3586E+000
		609.31*	45.49	1.7256E-001		2.4869E+000
		665.45	1.53	1.0187E+001		1.1209E+000
		703.11	0.48	1.9924E+001		7.9038E+000
		719.86	0.39	2.4135E+001		9.0242E+000
		768.36*	4.89	1.7577E+000		2.3683E+000
		786.10	0.31	3.3672E+001		1.1433E+001
		806.17	1.26	7.8967E+000		1.8883E+000
		934.06*	3.10	2.3925E+000		2.8771E+000
		964.08	0.36	3.8665E+001		1.6796E+001
		1051.96	0.31	3.1797E+001		-1.4617E+000
		1120.29*	14.91	6.3786E-001		2.6051E+000

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Bi-214	1133.66	0.25	4.0733E+001	1.73E-001	-1.1244E+001
		1155.19	1.63	7.4213E+000		2.9388E+000
		1207.68	0.45	2.5752E+001		-5.1769E+000
		1238.11*	5.79	1.2293E+000		2.2597E+000
		1280.96	1.43	8.1785E+000		1.2696E+000
		1377.67*	4.00	1.5271E+000		2.6550E+000
		1385.31	0.76	1.4453E+001		-1.7832E+000
		1401.50	1.27	8.0451E+000		-6.0043E+000
		1407.98	2.15	5.1739E+000		-1.2547E+000
		1509.23	2.11	5.2254E+000		-2.3069E+000
		1538.50	0.38	2.5654E+001		-8.4454E+000
		1543.32	0.20	4.7135E+001		8.9396E+000
		1583.22	0.69	1.4948E+001		8.5349E+000
		1594.73	0.25	4.5008E+001		5.4226E+000
		1599.31	0.23	4.1668E+001		-3.7811E-003
		1661.28	1.15	8.2573E+000		3.5489E-001
		1683.99	0.22	3.7544E+001		-5.6837E+000
		1729.59*	2.92	1.2309E+000		3.3527E+000
		1764.49*	15.40	4.4708E-001		2.7663E+000
		1847.42	2.11	5.2634E+000		-1.2228E+000
		1873.16	0.22	3.2309E+001		-6.6307E+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	7.1764E+001	2.38E-001	-1.2317E+001
		74.81*	6.44	2.1686E+000		4.3904E+000
		77.11*	10.80	1.1826E+000		3.6526E+000
		87.30*	4.84	1.6887E+000		2.4448E+000
		242.00*	7.43	7.1334E-001		2.9041E+000
		258.87	0.52	1.5162E+001		1.1583E+000
		274.80	0.47	1.7541E+001		-1.0637E+001
		295.22*	19.30	3.5616E-001		2.4830E+000
		351.93*	37.60	2.3763E-001		2.6254E+000
		462.00	0.22	3.9973E+001		1.0851E+001
		533.66	0.19	4.5659E+001		-1.2910E+001
		785.96	1.07	9.7808E+000		4.7452E+000
		839.04	0.59	1.6792E+001		-1.1471E+001
	Ra-224	81.07	0.13	1.1006E+002	3.37E+000	-9.7515E+001
		83.78	0.22	5.9846E+001		-4.5873E+000
		240.99	4.10	3.3682E+000		-2.1755E-001
+	Ra-226	81.07	0.20	7.1458E+001	2.05E+000	-6.3312E+001
		83.78	0.33	3.8657E+001		-2.9632E+000
		94.90	0.15	7.1458E+001		-4.2234E+001
		186.21*	3.59	2.0473E+000		4.1884E+000
	Ac-228	99.50	1.26	6.9810E+000	5.30E-001	4.3405E+000
		129.07	2.50	3.5261E+000		1.5173E+000
		209.25	3.97	2.1765E+000		-3.0259E-001
		270.24	3.55	2.4741E+000		1.3668E+000
		328.00	3.04	2.9109E+000		1.5949E-001
		338.32	11.40	8.5293E-001		8.5484E-001
		409.46	2.02	4.2350E+000		-1.8607E+000

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
	Ac-228	463.00	4.45	2.0579E+000	5.30E-001	1.1870E+000
		755.31	1.03	8.3744E+000		-1.3066E+000
		772.29	1.52	7.2973E+000		7.3185E-001
		794.94	4.31	2.2936E+000		9.8713E-001
		835.70	1.70	6.2885E+000		4.4805E+000
		911.20	26.20	5.3002E-001		6.1268E-001
		964.79	4.99	2.9446E+000		1.2691E+000
		968.96	15.90	9.0540E-001		9.2812E-001
		1588.20	3.06	3.7786E+000		1.1465E+000
		1630.62	1.52	6.0074E+000		6.3935E-001
	Th-228	84.37	1.26	1.0581E+001	1.06E+001	8.1678E-001
		131.61	0.13	6.6150E+001		4.5191E+000
		166.41	0.10	7.8188E+001		7.2518E+000
		215.98	0.25	3.2876E+001		5.1888E+000
	Pa-234m	258.23	0.07	1.0696E+002	1.30E+001	1.3881E+001
		742.81	0.09	8.6764E+001		-1.6401E+000
		766.36	0.32	3.6484E+001		4.0012E+001
		786.27	0.05	1.9370E+002		-1.3398E+000
		1001.03	0.85	1.3046E+001		3.9719E-001
		1737.77	0.02	4.5848E+002		-1.3044E+002
+	Th-234	63.30*	3.75	6.1379E+000	1.78E+000	2.0017E+000
		92.59*	4.33	1.7834E+000		2.2621E+000
		112.81	0.22	3.7778E+001		1.0382E+001

+ = 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: P006-S001-0004-01
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	0.973	1460.82*		10.55	9.47614E+000	5.07728E-001
Cs-137	0.993	32.06	@	5.54		
		661.66*		84.99	3.41168E-001	3.21871E-002
Eu-152m	0.994	89.85*		69.90	6.87609E-002	1.46924E-002
Tl-208	0.710	72.80	@	2.02		
		74.97*	@	3.41	8.49239E+000	7.60783E-001
		84.90	@	1.51		
		277.36		6.31		
		510.77*	@	22.60	1.47041E-001	1.19992E-001
		583.19*		84.50	2.25392E-001	2.54931E-002
		763.13	@	1.81		
		860.56		12.42		
Bi-211	0.893	351.03*		13.00	7.60923E+000	3.94112E-001
Bi-212	0.573	39.86	@	1.06		
		727.33*		6.74	6.39686E-001	2.18465E-001
		785.37		1.11		
		1620.74		1.51		
		1806.00	@	0.09		
Pb-212	0.986	74.81*		10.40	2.78452E+000	2.62062E-001
		77.11*		17.50	2.30878E+000	1.78253E-001
		87.30*		7.81	1.55178E+000	1.86272E-001
		115.18	@	0.59		
		238.63*		43.30	7.08244E-001	4.77358E-002
		300.09*		3.28	4.38017E-001	3.64977E-001
Bi-214	0.727	76.86*	@	0.43	9.26015E+001	7.21804E+000
		89.81*	@	0.24	1.96323E+001	4.25363E+000
		386.77	@	0.30		
		454.77	@	0.29		
		609.31*		45.49	2.48695E+000	1.11111E-001
		665.45	@	1.53		
		703.11	@	0.48		
		719.86	@	0.39		
		768.36*		4.89	2.36830E+000	4.37451E-001
		786.10	@	0.31		
		806.17	@	1.26		
		934.06*		3.10	2.87708E+000	6.04500E-001
		964.08	@	0.36		
		1051.96	@	0.31		
		1120.29*		14.91	2.60505E+000	2.16965E-001
		1133.66	@	0.25		
		1155.19	@	1.63		

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Bi-214	0.727	1207.68	@	0.45		
		1238.11*		5.79	2.25968E+000	3.56860E-001
		1280.96	@	1.43		
		1377.67*		4.00	2.65499E+000	4.58811E-001
		1385.31	@	0.76		
		1401.50	@	1.27		
		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	3.35267E+000	5.39746E-001
		1764.49*		15.40	2.76629E+000	2.31080E-001
		1847.42	@	2.11		
		1873.16	@	0.22		
		2118.55	@	1.14		
		2204.21	@	5.08		
Pb-214	0.944	53.28	@	1.20		
		74.81*		6.44	4.39042E+000	4.18558E-001
		77.11*		10.80	3.65262E+000	2.94852E-001
		87.30*		4.84	2.44480E+000	2.97096E-001
		242.00*		7.43	2.90407E+000	2.16323E-001
		258.87	@	0.52		
		274.80	@	0.47		
		295.22*		19.30	2.48301E+000	1.54145E-001
		351.93*		37.60	2.62540E+000	1.33410E-001
		462.00	@	0.22		
		533.66	@	0.19		
		785.96	@	1.07		
		839.04	@	0.59		
Ra-226	0.779	81.07	@	0.20		
		83.78	@	0.33		
		94.90	@	0.15		
		186.21*		3.59	4.18843E+000	5.29729E-001
Th-234	0.941	63.30*		3.75	2.00173E+000	1.33127E+000
		92.59*		4.33	2.26209E+000	3.27399E-001
		112.81	@	0.22		

* = 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

****
***** 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 *****
****

	Nuclide Name		Nuclide Id Confidence	Wt mean Activity (pCi/GWET)	Wt mean Activity Uncertainty
	K-40		0.973	9.476137E+000	5.077280E-001
X	Cd-109		0.912		
	Cs-137	@	0.993	3.411677E-001	3.218706E-002
	Eu-152m		0.994	5.987092E-002	1.468351E-002
	Tl-208	@	0.710	2.269585E-001	2.541161E-002
	Bi-211		0.893	3.994897E-001	4.821321E-001
	Bi-212	@	0.573	6.396856E-001	2.184645E-001
	Pb-212	@	0.986	6.723747E-001	4.427966E-002
	Bi-214	@	0.727	2.538237E+000	8.366995E-002
	Pb-214	@	0.944	2.487564E+000	1.032176E-001
	Ra-226	@	0.779	4.188431E+000	5.297291E-001
	Th-234	@	0.941	2.247238E+000	3.179258E-001

? = 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: 11/7/2016 7:42:19 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
12	338.27	1.6103E-002	22.83	Tol.	Ra-223 Ac-228
14	395.88	1.7492E-003	106.50		
15	480.69	2.2049E-003	84.15	Sum	
22	911.07	1.8082E-002	12.68	Tol.	Ac-228
24	968.93	1.1319E-002	20.24	Sum	
31	1848.95	4.8771E-003	18.16		

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

Errors quoted at 1.000 sigma

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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-P007-S001-0006-01.CNF

Report Generated On	: 11/8/2016 10:40:52 AM
Sample Title	: P007-S001-0006-01
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	: 4.584E+002 GWET
Sample Taken On	: 10/14/2016 3:45:00 PM
Acquisition Started	: 11/8/2016 8:40:49 AM
Live Time	: 7200.0 seconds
Real Time	: 7201.6 seconds
Dead Time	: 0.02 %

Energy Calibration Used Done On	: 10/24/2016
Efficiency Calibration Used Done On	: 9/27/2016
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: P007-S001-0006-01
Peak Analysis Performed on: 11/8/2016 10:40:52 AM
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	290-	314	299.88	74.93	0.90	2.12E+002	20.97	3.62E+002
m	2	290-	314	309.40	77.31	0.90	3.01E+002	23.58	3.29E+002
M	3	357-	385	360.27	90.03	0.97	6.36E+001	16.07	2.67E+002
m	4	357-	385	371.98	92.95	0.98	1.67E+002	20.04	2.80E+002
	5	735-	753	744.58	186.11	1.22	1.79E+002	36.16	3.34E+002
	6	831-	842	837.12	209.25	1.26	6.42E+001	23.57	1.96E+002
M	7	947-	980	954.83	238.68	1.16	8.81E+002	32.93	2.13E+002
m	8	947-	980	966.76	241.66	1.16	1.58E+002	15.88	1.58E+002
	9	1073-	1093	1080.56	270.11	0.71	9.14E+001	28.78	2.01E+002
M	10	1160-	1190	1164.88	291.19	1.03	3.28E+000	5.89	1.06E+002
m	11	1160-	1190	1181.30	295.30	1.03	3.03E+002	14.71	1.01E+002
	12	1347-	1364	1353.06	338.24	1.32	1.85E+002	26.33	1.54E+002
	13	1401-	1414	1407.65	351.89	1.31	4.85E+002	28.84	1.26E+002
	14	1846-	1857	1851.78	462.94	0.84	3.96E+001	14.69	7.04E+001
	15	2032-	2055	2042.71	510.67	0.90	3.05E+002	29.08	1.36E+002
	16	2325-	2340	2332.43	583.11	1.27	2.95E+002	22.53	7.05E+001
	17	2427-	2450	2436.69	609.18	1.34	4.85E+002	28.38	7.96E+001
	18	2639-	2655	2646.45	661.62	1.49	1.60E+002	18.21	5.39E+001
M	19	2902-	2925	2909.11	727.29	1.03	3.79E+001	8.55	4.47E+001
m	20	2902-	2925	2919.81	729.97	1.03	1.22E+001	5.96	3.24E+001
	21	3067-	3079	3074.59	768.66	0.30	3.13E+001	12.41	4.57E+001
	22	3137-	3149	3143.34	785.85	0.58	2.43E+000	10.83	4.26E+001
	23	3438-	3448	3442.88	860.74	0.47	2.93E+001	10.72	3.58E+001
	24	3634-	3655	3644.58	911.17	1.43	2.36E+002	19.56	3.88E+001
M	25	3855-	3884	3859.76	964.97	1.47	1.74E+001	8.22	6.43E+001
m	26	3855-	3884	3876.29	969.11	1.48	9.83E+001	12.07	5.53E+001
	27	4470-	4491	4480.91	1120.27	0.46	1.11E+002	18.11	5.72E+001
	28	5834-	5858	5845.25	1461.39	1.65	1.07E+003	34.67	3.21E+001
	29	7055-	7072	7063.08	1765.87	1.21	7.06E+001	9.55	6.45E+000

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: P007-S001-0006-01
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	7.9952E-001	8.00E-001	1.4147E+001
	Co-60	1173.23	99.85	8.9951E-002	7.00E-002	2.0115E-002
		1332.49	99.98	7.0019E-002		-2.0763E-002
>		2505.71	0.10	0.0000E+000		0.0000E+000
+	Cs-137	32.06	5.54	1.2024E+003	6.14E-002	-1.4136E+002
		661.66*	84.99	6.1355E-002		1.5443E-001
+	Tl-208	72.80	2.02	8.5842E+000	6.58E-002	-8.5672E-001
		74.97*	3.41	2.8600E+000		4.7348E+000
		84.90	1.51	6.4069E+000		3.4541E+000
		277.36	6.31	9.4448E-001		6.9942E-001
		510.77*	22.60	3.9998E-001		4.1710E-001
		583.19*	84.50	6.5847E-002		2.6067E-001
		763.13	1.81	4.0705E+000		-1.7986E+000
		860.56*	12.42	3.7154E-001		2.3763E-001
+	Bi-212	39.86	1.06	6.3115E+002	6.21E-001	2.1735E+002
		727.33*	6.74	6.2129E-001		5.0435E-001
		785.37*	1.11	4.4848E+000		2.0764E-001
		1620.74	1.51	3.7353E+000		-3.0147E+000
		1806.00	0.09	6.9011E+001		2.3858E+001
+	Pb-212	74.81*	10.40	9.3776E-001	1.00E-001	1.5525E+000
		77.11*	17.50	4.7819E-001		1.1820E+000
		87.30	7.81	1.2229E+000		2.9086E-001
		115.18	0.59	1.0131E+001		-3.8919E-001
		238.63*	43.30	9.9992E-002		8.3782E-001
		300.09	3.28	1.8216E+000		5.4946E-001
	Bi-214	76.86	0.43	3.7243E+001	2.84E-001	-3.6124E+000
		89.81	0.24	3.6716E+001		8.7529E+000
		386.77	0.30	1.9632E+001		1.0942E+001
		454.77	0.29	1.9483E+001		2.8809E+000
		609.31	45.49	2.8424E-001		7.4687E-001
		665.45	1.53	6.4734E+000		6.0348E-001
		703.11	0.48	1.4757E+001		-1.0259E+000
		719.86	0.39	1.7742E+001		9.4001E+000
		768.36	4.89	1.7229E+000		1.7542E+000
		786.10	0.31	2.2822E+001		-1.2488E+001
		806.17	1.26	6.2466E+000		2.5485E+000
		934.06	3.10	2.6771E+000		-6.8874E-001
		964.08	0.36	3.0725E+001		-2.8721E+000
		1051.96	0.31	2.7010E+001		3.2102E+000
		1120.29	14.91	8.0445E-001		8.1427E-001

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
	Bi-214	1133.66	0.25	3.2929E+001	2.84E-001	-4.7757E+000
		1155.19	1.63	5.7585E+000		2.5212E+000
		1207.68	0.45	2.1434E+001		-2.6375E+000
		1238.11	5.79	2.1142E+000		1.4340E+000
		1280.96	1.43	6.0577E+000		1.3216E+000
		1377.67	4.00	1.7599E+000		-6.9486E-001
		1385.31	0.76	9.9454E+000		-4.2951E+000
		1401.50	1.27	5.1626E+000		-3.8496E-001
		1407.98	2.15	3.4340E+000		8.7293E-001
		1509.23	2.11	3.1709E+000		-6.1597E-001
		1538.50	0.38	1.6626E+001		6.5071E+000
		1543.32	0.20	3.0111E+001		5.5008E+000
		1583.22	0.69	1.0448E+001		-3.3347E+000
		1594.73	0.25	3.0103E+001		1.9851E+001
		1599.31	0.23	2.7934E+001		-8.3301E+000
		1661.28	1.15	5.3645E+000		1.8093E+000
		1683.99	0.22	3.1254E+001		-1.2105E+001
		1729.59	2.92	2.5789E+000		2.5892E-001
		1764.49	15.40	6.8997E-001		8.2771E-001
		1847.42	2.11	2.9216E+000		-6.6016E-001
		1873.16	0.22	2.6939E+001		7.5202E+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	5.2085E+001	1.26E-001	1.7958E+001
		74.81*	6.44	1.4777E+000		2.4464E+000
		77.11*	10.80	7.5609E-001		1.8689E+000
		87.30	4.84	1.9255E+000		4.5798E-001
		242.00*	7.43	4.7625E-001		8.8167E-001
		258.87	0.52	1.0233E+001		5.0112E+000
		274.80	0.47	1.2219E+001		5.1978E+000
		295.22*	19.30	1.6565E-001		7.2860E-001
		351.93*	37.60	1.2648E-001		6.6179E-001
		462.00*	0.22	1.8422E+001		1.1317E+001
		533.66	0.19	3.2937E+001		5.6322E+000
		785.96*	1.07	4.5398E+000		2.1019E-001
		839.04	0.59	1.2992E+001		1.6511E+000
+	Ra-224	81.07	0.13	7.5939E+001	8.84E-001	-1.3173E+002
		83.78	0.22	4.3715E+001		-3.2822E+001
		240.99*	4.10	8.8446E-001		1.6374E+000
+	Ra-226	81.07	0.20	4.9275E+001	1.71E+000	-8.5480E+001
		83.78	0.33	2.8221E+001		-2.1189E+001
		94.90	0.15	5.0439E+001		1.1419E+000
		186.21*	3.59	1.7144E+000		1.3472E+000
+	Ac-228	99.50	1.26	4.8433E+000	2.43E-001	-1.0725E+000
		129.07	2.50	2.4568E+000		7.4953E-002
		209.25*	3.97	1.0632E+000		6.4532E-001
		270.24*	3.55	1.6391E+000		1.1615E+000
		328.00	3.04	2.0205E+000		-1.0570E-001
		338.32*	11.40	4.8979E-001		8.4367E-001
		409.46	2.02	3.0444E+000		1.7417E+000

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Ac-228	463.00*	4.45	9.3757E-001	2.43E-001	5.7598E-001
		755.31	1.03	6.9741E+000		-1.1180E+000
		772.29	1.52	5.3511E+000		-1.3043E+000
		794.94	4.31	1.8264E+000		-4.8185E-001
		835.70	1.70	4.7627E+000		1.8775E+000
		911.20*	26.20	2.4340E-001		9.2486E-001
		964.79*	4.99	1.2128E+000		3.8002E-001
		968.96*	15.90	3.5536E-001		6.7694E-001
		1588.20	3.06	2.7105E+000		8.1131E-001
		1630.62	1.52	5.0603E+000		2.7276E+000
	Th-228	84.37	1.26	7.6205E+000	7.62E+000	4.8556E-001
		131.61	0.13	4.6821E+001		6.5693E+000
		166.41	0.10	5.3854E+001		1.0009E+001
		215.98	0.25	2.2223E+001		-1.7821E+000
	Pa-234m	258.23	0.07	7.3374E+001	9.60E+000	3.7607E+001
		742.81	0.09	7.2604E+001		-2.9654E+001
		766.36	0.32	2.5429E+001		8.8670E+000
		786.27	0.05	1.3351E+002		-1.6812E+001
		1001.03	0.85	9.5963E+000		3.9984E+000
		1737.77	0.02	3.3449E+002		-4.2959E+001
	Th-234	63.30	3.75	6.7443E+000	1.93E+000	4.8480E+000
		92.59	4.33	1.9273E+000		2.5508E+000
		112.81	0.22	2.6161E+001		-9.0464E+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

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*********************************************************************
*****   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   *****
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Sample Title: P007-S001-0006-01
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	0.950	1460.82*		10.55	1.41472E+001	5.97963E-001
Cs-137	0.995	32.06	@	5.54		
		661.66*		84.99	1.54428E-001	1.81026E-002
Eu-152m	0.995	89.85*		69.90	4.14532E-002	1.05727E-002
Tl-208	0.839	72.80	@	2.02		
		74.97*	@	3.41	4.73478E+000	4.97092E-001
		84.90	@	1.51		
		277.36		6.31		
		510.77*	@	22.60	4.17103E-001	9.26189E-002
		583.19*		84.50	2.60666E-001	2.22152E-002
		763.13	@	1.81		
		860.56*		12.42	2.37634E-001	8.72658E-002
Bi-212	0.758	39.86	@	1.06		
		727.33*		6.74	5.04351E-001	1.14911E-001
		785.37*		1.11	2.07642E-001	9.24387E-001
		1620.74		1.51		
		1806.00	@	0.09		
Pb-212	0.767	74.81*		10.40	1.55246E+000	1.69029E-001
		77.11*		17.50	1.18195E+000	1.06720E-001
		87.30		7.81		
		115.18	@	0.59		
		238.63*		43.30	8.37817E-001	4.96523E-002
		300.09		3.28		
Pb-214	0.869	53.28	@	1.20		
		74.81*		6.44	2.44641E+000	2.68946E-001
		77.11*		10.80	1.86885E+000	1.74394E-001
		87.30		4.84		
		242.00*		7.43	8.81665E-001	9.76074E-002
		258.87	@	0.52		
		274.80	@	0.47		
		295.22*		19.30	7.28604E-001	4.66296E-002
		351.93*		37.60	6.61787E-001	4.79142E-002
		462.00*	@	0.22	1.13172E+001	4.24400E+000
		533.66	@	0.19		
		785.96*	@	1.07	2.10192E-001	9.35867E-001
		839.04	@	0.59		
Ra-224	0.825	81.07	@	0.13		
		83.78	@	0.22		
		240.99*		4.10	1.63737E+000	1.80749E-001
Ra-226	0.778	81.07	@	0.20		
		83.78	@	0.33		

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Ra-226	0.778	94.90	@	0.15		
		186.21*		3.59	1.34716E+000	3.86740E-001
Ac-228	0.608	99.50	@	1.26		
		129.07	@	2.50		
		209.25*		3.97	6.45320E-001	2.39614E-001
		270.24*		3.55	1.16148E+000	3.70524E-001
		328.00		3.04		
		338.32*		11.40	8.43674E-001	1.27729E-001
		409.46	@	2.02		
		463.00*		4.45	5.75976E-001	2.16951E-001
		755.31	@	1.03		
		772.29	@	1.52		
		794.94		4.31		
		835.70	@	1.70		
		911.20*		26.20	9.24856E-001	8.64033E-002
		964.79*		4.99	3.80021E-001	1.80543E-001
		968.96*		15.90	6.76944E-001	8.71977E-002
		1588.20		3.06		
		1630.62	@	1.52		

* = 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		0.950	1.414717E+001	5.979630E-001
	Cs-137	@	0.995	1.544285E-001	1.810265E-002
	Eu-152m		0.995	4.145322E-002	1.057273E-002
	Tl-208	@	0.839	2.603697E-001	2.141413E-002
X	Bi-211		0.888		
	Bi-212	@	0.758	4.894977E-001	1.136912E-001
	Pb-212	@	0.767	8.339950E-001	4.290048E-002
	Pb-214	@	0.869	6.936137E-001	3.228253E-002
	Ra-224	@	0.825	3.492378E-001	1.893824E-001
	Ra-226	@	0.778	1.347157E+000	3.867396E-001
	Ac-228	@	0.608	7.669141E-001	4.811146E-002

? = 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: 11/8/2016 10:40:52 AM
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	4	92.95	1.2678E-002	22.90	Tol.	Yb-169 Th-227 Th-234
M	10	291.19	4.5583E-004	179.38	Tol.	Sb-127
	17	609.18	6.7415E-002	5.85	Sum	
m	20	729.97	1.6897E-003	48.97	Tol.	Te-129m
	21	768.66	4.3516E-003	39.62	Sum	
	27	1120.27	1.5383E-002	16.35	Sum	
	29	1765.87	9.7989E-003	13.54		

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

Errors quoted at 1.000 sigma