Date: 9/15/16

9626 Niagara Falls Blvd Onsite Gamma Spec Screening Lab

Gamma Spectroscopy Detector work sheet.

Counted by (Initial,date)	Geometry Description	SMP A30FF- 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)
DJK 9/15/16	450 cc SOIL	AB04160915	9/15/2016	553.4	gWET	7200	
DJK 9/15/16	450 cc SOIL	AD09160915	9/15/2016	541.6	gWET	7200	
DJK 9/15/16	450 cc SOIL	AH13160915	9/15/2016	610.1	gWET	7200	
DJK 9/15/16	450 cc SOIL	AP06160915	9/15/2016	540.6	gWET	7200	
DJK 9/27/16	450 cc SOIL	AP08160915	9/15/2016	567.5	gWET	7200	
DJK 10/4/16	450 cc SOIL	AQ07160915	9/15/2016	588.6	gWET	7200	DJK 10/4/16 7.4 pCi/g
	450 cc SOIL	AI15160915	9/15/2016	720.9	gWET	7200	
	450 cc SOIL					7200	
	450 cc SOIL					7200	
	450 cc SOIL					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: C:\GENIE2K\CAMFILES\SMPA3offAP08.160915.CNF

DK 9/28/16

Report Generated On	:	9/28/2016 7:55:00 AM
Sample Title	:	SMPAP08160915
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	:	5.675E+002 GWET
Sample Taken On	:	9/15/2016 9:00:00 AM
Acquisition Started	:	9/27/2016 4:12:25 PM
Live Time	:	7200.0 seconds
Real Time	:	7202.6 seconds
Dead Time	:	0.04 %

Energy Calibration Used Done On	:	9/27/2016
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: SMPAP08160915
Peak Analysis Performed on: 9/28/2016 7:55:01 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
	1	248-	260	253.53	63.39	0.49	4.04E+001	38.51	5.47E+002
M	2	293-	315	299.52	74.90	0.92	3.44E+002	25.82	7.04E+002
m	3	293-	315	308.90	77.24	0.92	6.90E+002	30.95	6.56E+002
	4	322-	328	324.48	81.14	0.37	2.33E+001	23.77	2.85E+002
M	5	344-	379	349.43	87.38	0.98	2.69E+002	24.19	5.83E+002
m	6	344-	379	360.13	90.06	0.98	1.85E+002	21.48	6.98E+002
m	7	344-	379	371.70	92.95	0.99	2.84E+002	23.72	6.64E+002
	8	513-	520	516.78	129.24	0.91	8.44E+001	27.40	3.31E+002
	9	735-	750	743.85	186.04	1.19	2.83E+002	43.34	5.32E+002
	10	827-	844	837.02	209.35	1.01	2.12E+002	43.15	5.07E+002
M	11	939-	976	954.22	238.67	1.19	1.72E+003	42.24	4.06E+002
m	12	939-	976	967.02	241.87	1.19	4.11E+002	23.10	3.64E+002
	13	1075-	1085	1079.87	270.10	0.47	9.28E+001	25.38	2.26E+002
	14	1166-	1187	1180.29	295.21	1.01	7.10E+002	45.62	3.56E+002
	15	1192-	1211	1199.75	300.08	0.80	1.22E+002	34.07	2.96E+002
	16	1299-	1317	1310.61	327.81	0.60	1.03E+002	30.60	2.47E+002
	17	1345-	1360	1352.31	338.24	1.03	2.83E+002	32.47	2.57E+002
	18	1398-	1413	1406.91	351.90	1.13	1.14E+003	43.44	2.48E+002
	19	1631-	1643	1636.89	409.43	0.99	8.00E+001	20.38	1.27E+002
	20	1846-	1858	1851.99	463.23	0.86	8.76E+001	20.47	1.25E+002
	21	2027-	2058	2041.19	510.56	1.44	3.75E+002	42.72	2.86E+002
	22	2325-	2338	2330.84	583.01	1.08	6.02E+002	30.79	1.26E+002
	23	2426-	2446	2435.36	609.16	1.28	9.99E+002	39.56	1.56E+002
	24	2900-	2915	2907.39	727.23	0.85	1.16E+002	19.37	8.58E+001
	25	3061-	3077	3070.94	768.14	1.14	1.04E+002	17.97	7.01E+001
	26	3169-	3185	3177.10	794.70	0.61	7.59E+001	16.67	6.41E+001
	27	3218-	3228	3223.01	806.18	0.45	2.07E+001	11.75	4.93E+001
	28	3431-	3447	3439.68	860.38	0.79	9.16E+001	17.85	7.24E+001
	29	3629-	3653	3642.19	911.03	1.54	4.81E+002	27.89	7.19E+001
	30	3728-	3743	3734.23	934.06	0.28	4.73E+001	14.77	5.67E+001
M	31	3850-	3881	3856.70	964.69	1.50	6.60E+001	10.75	6.00E+001
m	32	3850-	3881	3873.34	968.85	1.50	2.14E+002	16.52	7.13E+001
	33	4383-	4394	4388.50	1097.72	0.56	1.06E+001	10.21	3.74E+001
	34	4469-	4489	4478.45	1120.22	1.25	1.86E+002	21.11	7.11E+001
	35	4941-	4958	4949.42	1238.03	1.31	8.98E+001	17.37	6.52E+001
	36	5502-	5516	5508.41	1377.85	0.37	4.07E+001	11.11	2.73E+001
	37	5829-	5853	5841.42	1461.15	1.61	1.27E+003	38.65	5.31E+001
	38	6342-	6356	6350.10	1588.39	1.01	4.41E+001	8.34	8.90E+000
	39	6516-	6527	6521.56	1631.28	0.84	1.09E+001	6.53	1.11E+001
	40	7047-	7066	7057.60	1765.37	1.45	1.98E+002	16.12	1.75E+001
	41	7380-	7393	7386.31	1847.59	0.25	1.55E+001	8.35	1.85E+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 I D E N T I F I C A T I O N R E P O R T *****
****

Sample Title: SMPAP08160915
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	0.983	1460.82*		10.55	1.35888E+001	5.52725E-001
Eu-152m	0.993	89.85*		69.90	9.72339E-002	1.17423E-002
Tl-208	0.836	72.80	@	2.02		
		74.97*	@	3.41	6.15259E+000	5.08410E-001
		84.90	@	1.51		
		277.36		6.31		
		510.77*	@	22.60	5.02257E-001	1.07344E-001
		583.19*		84.50	4.30235E-001	2.63352E-002
		763.13	@	1.81		
		860.56*		12.42	5.93583E-001	1.16587E-001
Bi-211	0.886	351.03*		13.00	3.65513E+000	2.05091E-001
Bi-212	0.573	39.86	@	1.06		
		727.33*		6.74	1.23389E+000	2.09274E-001
		785.37		1.11		
		1620.74		1.51		
		1806.00	@	0.09		
Pb-212	0.986	74.81*		10.40	2.01734E+000	1.76565E-001
		77.11*		17.50	2.16343E+000	1.37594E-001
		87.30*		7.81	1.35813E+000	1.37188E-001
		115.18	@	0.59		
		238.63*		43.30	1.32484E+000	6.81408E-002
		300.09*		3.28	1.42628E+000	4.02574E-001
Bi-214	0.748	76.86*	@	0.43	8.77961E+001	5.66260E+000
		89.81*	@	0.24	2.78075E+001	3.50315E+000
		386.77	@	0.30		
		454.77	@	0.29		
		609.31*		45.49	1.36821E+000	6.84683E-002
		665.45	@	1.53		
		703.11	@	0.48		
		719.86	@	0.39		
		768.36*		4.89	1.56111E+000	2.72731E-001
		786.10	@	0.31		
		806.17*	@	1.26	1.24358E+000	7.08089E-001
		934.06*		3.10	1.28289E+000	4.01944E-001
		964.08*	@	0.36	1.56304E+001	2.62469E+000
		1051.96	@	0.31		
		1120.29*		14.91	1.18667E+000	1.37858E-001
		1133.66	@	0.25		
		1155.19	@	1.63		
		1207.68	@	0.45		
		1238.11*		5.79	1.57955E+000	3.08782E-001

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Bi-214	0.748	1280.96	@	1.43		
		1377.67*		4.00	1.11374E+000	3.05927E-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		
		1764.49*		15.40	1.63717E+000	1.48608E-001
		1847.42*	@	2.11	9.90027E-001	5.36140E-001
		1873.16	@	0.22		
		2118.55	@	1.14		
		2204.21	@	5.08		
Pb-214	0.944	53.28	@	1.20		
		74.81*		6.44	3.21832E+000	2.85899E-001
		77.11*		10.80	3.46307E+000	2.34886E-001
		87.30*		4.84	2.16496E+000	2.22496E-001
		242.00*		7.43	1.85554E+000	1.35030E-001
		258.87	@	0.52		
		274.80	@	0.47		
		295.22*		19.30	1.37900E+000	1.05620E-001
		351.93*		37.60	1.26241E+000	6.96950E-002
		462.00	@	0.22		
		533.66	@	0.19		
		785.96	@	1.07		
		839.04	@	0.59		
Ra-224	0.822	81.07*	@	0.13	8.41176E+000	8.59228E+000
		83.78	@	0.22		
		240.99*		4.10	3.40387E+000	2.46050E-001
Ra-226	0.836	81.07*	@	0.20	5.52580E+000	5.64386E+000
		83.78	@	0.33		
		94.90	@	0.15		
		186.21*		3.59	1.97055E+000	3.79697E-001
Ac-228	0.898	99.50	@	1.26		
		129.07*	@	2.50	1.03177E+000	3.37679E-001
		209.25*		3.97	1.70317E+000	3.58871E-001
		270.24*		3.55	9.41035E-001	2.61795E-001
		328.00*		3.04	1.37695E+000	4.15012E-001
		338.32*		11.40	1.02898E+000	1.29603E-001
		409.46*	@	2.02	1.87298E+000	4.85201E-001
		463.00*		4.45	1.01708E+000	2.46675E-001
		755.31	@	1.03		
		772.29	@	1.52		
		794.94*		4.31	1.34078E+000	2.99618E-001

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Ac-228	0.898	835.70	@	1.70		
		911.20*		26.20	1.52025E+000	1.06727E-001
		964.79*		4.99	1.15098E+000	1.93508E-001
		968.96*		15.90	1.17312E+000	1.01727E-001
		1588.20*		3.06	1.76396E+000	3.43476E-001
		1630.62*	@	1.52	8.93430E-001	5.37527E-001
Th-234	0.932	63.30*		3.75	2.22668E-001	1.29429E+000
		92.59*		4.33	1.66847E+000	2.15741E-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		0.983	1.358878E+001	5.527247E-001
X	Cd-109		0.934		
	Eu-152m		0.993	9.240726E-002	1.171404E-002
	Tl-208	@	0.836	4.373976E-001	2.543425E-002
	Bi-211		0.886	1.995104E-001	3.232802E-001
	Bi-212	@	0.573	1.233892E+000	2.092740E-001
	Pb-212	@	0.986	1.209726E+000	5.555842E-002
	Bi-214	@	0.748	1.380352E+000	5.309396E-002
	Pb-214	@	0.944	1.193500E+000	8.825896E-002
	Ra-224	@	0.822	1.214470E+000	2.916006E-001
	Ra-226	@	0.836	1.970554E+000	3.796968E-001
	Ac-228	@	0.898	1.255816E+000	5.143350E-002
	Th-234	@	0.932	1.629388E+000	2.128046E-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: 9/28/2016 7:55:01 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
33	1097.72	1.4656E-003	96.75	Sum	

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: SMPAP08160915
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	8.1116E-001	8.11E-001	1.3589E+001
	Co-60	1173.23	99.85	8.9339E-002	8.07E-002	-1.5760E-002
		1332.49	99.98	8.0705E-002		2.0337E-002
>		2505.71	0.10	0.0000E+000		0.0000E+000
	Cs-137	32.06	5.54	1.1403E+003	8.37E-002	3.0846E+000
		661.66	84.99	8.3685E-002		1.5474E-002
+	Tl-208	72.80	2.02	8.6246E+000	6.57E-002	-2.2644E-003
		74.97*	3.41	3.1666E+000		6.1526E+000
		84.90	1.51	7.0600E+000		5.2175E-001
		277.36	6.31	9.5986E-001		3.0935E-001
		510.77*	22.60	4.7161E-001		5.0226E-001
		583.19*	84.50	6.5685E-002		4.3024E-001
		763.13	1.81	4.2606E+000		3.3913E-001
		860.56*	12.42	4.7148E-001		5.9358E-001
+	Bi-212	39.86	1.06	6.0646E+002	8.23E-001	4.5588E+001
		727.33*	6.74	8.2310E-001		1.2339E+000
		785.37	1.11	6.2880E+000		2.5379E+000
		1620.74	1.51	4.5490E+000		3.0015E+000
		1806.00	0.09	5.3136E+001		-5.2254E+000
+	Pb-212	74.81*	10.40	1.0383E+000	1.07E-001	2.0173E+000
		77.11*	17.50	5.3707E-001		2.1634E+000
		87.30*	7.81	8.1468E-001		1.3581E+000
		115.18	0.59	1.0787E+001		2.1438E+000
		238.63*	43.30	1.0740E-001		1.3248E+000
		300.09*	3.28	1.7836E+000		1.4263E+000
+	Bi-214	76.86*	0.43	2.1795E+001	1.55E-001	8.7796E+001
		89.81*	0.24	2.6518E+001		2.7808E+001
		386.77	0.30	1.9848E+001		-6.8191E-001
		454.77	0.29	1.9862E+001		2.7819E+000
		609.31*	45.49	1.5512E-001		1.3682E+000
		665.45	1.53	4.8226E+000		2.9374E+000
		703.11	0.48	1.5315E+001		-1.9586E+000
		719.86	0.39	1.7944E+001		5.6035E+000
		768.36*	4.89	1.0742E+000		1.5611E+000
		786.10	0.31	2.2315E+001		8.0094E+000
		806.17*	1.26	3.1966E+000		1.2436E+000
		934.06*	3.10	1.7230E+000		1.2829E+000
		964.08*	0.36	1.2710E+001		1.5630E+001
		1051.96	0.31	2.2074E+001		-1.1509E+001
		1120.29*	14.91	4.9558E-001		1.1867E+000

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Bi-214	1133.66	0.25	3.4443E+001	1.55E-001	1.1066E+001
		1155.19	1.63	5.3016E+000		-5.9535E-001
		1207.68	0.45	2.0081E+001		9.7947E+000
		1238.11*	5.79	1.2381E+000		1.5795E+000
		1280.96	1.43	5.5982E+000		2.7193E+000
		1377.67*	4.00	1.2326E+000		1.1137E+000
		1385.31	0.76	9.9908E+000		3.4259E+000
		1401.50	1.27	6.1438E+000		-7.0176E+000
		1407.98	2.15	3.9868E+000		1.9268E+000
		1509.23	2.11	3.4217E+000		-2.7744E-001
		1538.50	0.38	1.9230E+001		1.0292E+001
		1543.32	0.20	3.4663E+001		7.5658E+000
		1583.22	0.69	1.1739E+001		-3.3443E-001
		1594.73	0.25	3.3212E+001		-1.8047E+001
		1599.31	0.23	2.9868E+001		1.7625E+001
		1661.28	1.15	5.8706E+000		3.7484E+000
		1683.99	0.22	2.5555E+001		5.8112E+000
		1729.59	2.92	2.5069E+000		7.6241E-001
		1764.49*	15.40	3.4989E-001		1.6372E+000
		1847.42*	2.11	2.3665E+000		9.9003E-001
		1873.16	0.22	2.8240E+001		-4.6726E-001
>		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	5.2376E+001	1.47E-001	-3.9981E+001
		74.81*	6.44	1.6564E+000		3.2183E+000
		77.11*	10.80	8.5970E-001		3.4631E+000
		87.30*	4.84	1.2987E+000		2.1650E+000
		242.00*	7.43	5.7857E-001		1.8555E+000
		258.87	0.52	1.1506E+001		1.0432E+001
		274.80	0.47	1.3135E+001		3.2051E+000
		295.22*	19.30	3.3978E-001		1.3790E+000
		351.93*	37.60	1.4711E-001		1.2624E+000
		462.00	0.22	3.1593E+001		2.7792E+001
		533.66	0.19	3.3885E+001		-3.2553E+000
		785.96	1.07	6.4642E+000		2.3202E+000
		839.04	0.59	1.3579E+001		9.6175E+000
+	Ra-224	81.07*	0.13	4.0050E+001	1.06E+000	8.4118E+000
		83.78	0.22	4.7301E+001		3.7506E+000
		240.99*	4.10	1.0613E+000		3.4039E+000
+	Ra-226	81.07*	0.20	2.6309E+001	1.63E+000	5.5258E+000
		83.78	0.33	3.0914E+001		2.4513E+000
		94.90	0.15	5.4894E+001		-1.2238E+001
		186.21*	3.59	1.6267E+000		1.9706E+000
+	Ac-228	99.50	1.26	5.3347E+000	2.69E-001	6.4652E-001
		129.07*	2.50	1.5008E+000		1.0318E+000
		209.25*	3.97	1.5364E+000		1.7032E+000
		270.24*	3.55	1.1351E+000		9.4104E-001
		328.00*	3.04	1.8282E+000		1.3770E+000
		338.32*	11.40	4.7918E-001		1.0290E+000
		409.46*	2.02	2.0567E+000		1.8730E+000

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Ac-228	463.00*	4.45	1.0149E+000	2.69E-001	1.0171E+000
		755.31	1.03	6.7800E+000		9.5531E-001
		772.29	1.52	5.7462E+000		1.2246E+000
		794.94*	4.31	1.2161E+000		1.3408E+000
		835.70	1.70	4.7332E+000		2.9194E+000
		911.20*	26.20	2.6870E-001		1.5202E+000
		964.79*	4.99	9.3597E-001		1.1510E+000
		968.96*	15.90	3.1969E-001		1.1731E+000
		1588.20*	3.06	1.0458E+000		1.7640E+000
		1630.62*	1.52	2.3726E+000		8.9343E-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

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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\SMPA3offAP07160915.CNF

Report Generated On	: 10/4/2016 6:46:50 PM
Sample Title	: SMPA3-0FF-AQ07160915
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	: 5.886E+002 GWET
Sample Taken On	: 9/15/2016 9:00:00 AM
Acquisition Started	: 10/4/2016 4:46:46 PM
Live Time	: 7200.0 seconds
Real Time	: 7203.9 seconds
Dead Time	: 0.05 %

Energy Calibration Used Done On	: 10/4/2016
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: SMPA3-0FF-AQ07160915
Peak Analysis Performed on: 10/4/2016 6:46:50 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	293-	314	299.82	74.99	0.97	6.95E+002	38.62	1.15E+003
m	2	293-	314	308.67	77.20	0.97	1.09E+003	44.66	1.22E+003
M	3	329-	377	336.62	84.19	1.01	1.36E+002	28.63	1.17E+003
m	4	329-	377	349.24	87.35	1.01	4.13E+002	34.77	1.15E+003
m	5	329-	377	360.15	90.08	1.01	2.22E+002	29.86	1.12E+003
m	6	329-	377	371.32	92.87	1.02	5.65E+002	37.50	1.10E+003
	7	570-	584	574.88	143.78	0.41	1.38E+002	57.15	1.08E+003
	8	739-	753	744.09	186.09	1.09	9.60E+002	59.90	8.92E+002
	9	770-	777	774.00	193.57	0.59	1.78E+001	30.66	4.56E+002
	10	832-	847	837.20	209.37	0.40	2.15E+002	50.59	7.74E+002
M	11	948-	977	954.09	238.60	1.06	1.36E+003	44.00	6.79E+002
m	12	948-	977	967.32	241.91	1.06	1.00E+003	37.98	5.99E+002
	13	1071-	1089	1079.72	270.02	1.22	2.04E+002	48.67	6.41E+002
	14	1174-	1187	1180.10	295.12	1.21	2.06E+003	57.30	4.44E+002
	15	1306-	1315	1310.76	327.80	0.65	6.96E+001	24.14	2.25E+002
	16	1347-	1358	1352.32	338.19	1.11	2.30E+002	32.56	3.30E+002
	17	1395-	1414	1406.57	351.76	1.15	3.76E+003	74.63	5.02E+002
	18	1844-	1857	1849.69	462.57	1.04	7.40E+001	24.74	1.94E+002
	19	2030-	2054	2041.10	510.43	1.87	3.59E+002	38.35	2.69E+002
	20	2183-	2192	2187.11	546.95	0.48	6.26E+000	15.60	1.02E+002
	21	2322-	2341	2330.37	582.77	1.32	4.71E+002	35.51	2.25E+002
	22	2425-	2444	2435.00	608.93	1.35	2.99E+003	61.48	2.25E+002
	23	2653-	2664	2659.03	664.96	0.85	9.54E+001	19.85	1.19E+002
	24	2898-	2916	2907.08	726.99	1.45	1.48E+002	21.16	8.87E+001
	25	3059-	3079	3071.03	767.99	1.17	2.77E+002	29.95	1.71E+002
	26	3134-	3148	3139.63	785.14	0.91	7.25E+001	19.38	1.04E+002
	27	3434-	3449	3439.67	860.17	0.82	5.60E+001	18.01	8.80E+001
	28	3632-	3651	3641.65	910.68	1.68	3.67E+002	26.22	9.07E+001
	29	3723-	3741	3733.42	933.63	1.55	1.38E+002	21.79	9.97E+001
M	30	3848-	3882	3855.67	964.20	1.44	4.77E+001	11.39	1.15E+002
m	31	3848-	3882	3873.14	968.57	1.45	2.13E+002	16.98	8.43E+001
	32	4468-	4493	4477.93	1119.81	1.88	6.67E+002	32.91	9.63E+001
	33	4607-	4624	4618.33	1154.92	0.92	6.48E+001	18.84	8.92E+001
	34	4942-	4960	4950.01	1237.86	1.42	2.13E+002	24.01	1.08E+002
	35	5113-	5126	5119.52	1280.25	0.97	4.04E+001	13.40	5.06E+001
	36	5498-	5518	5508.21	1377.45	1.54	1.71E+002	21.53	7.94E+001
M	37	5597-	5637	5604.24	1401.47	1.69	5.23E+001	9.77	5.05E+001
m	38	5597-	5637	5629.62	1407.81	1.69	6.81E+001	10.41	4.65E+001
	39	5829-	5853	5840.82	1460.63	1.58	1.50E+003	41.04	4.41E+001
	40	6025-	6042	6034.80	1509.14	1.51	8.54E+001	14.55	3.76E+001
	41	6906-	6926	6917.22	1729.80	1.17	1.03E+002	14.11	2.64E+001
	42	7046-	7069	7056.68	1764.68	1.70	5.39E+002	24.99	2.24E+001

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	7349-	7360	7354.62	1839.18	0.36	1.93E+001	6.42	8.73E+000
44	7380-	7398	7388.75	1847.72	1.46	7.46E+001	12.39	2.34E+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: SMPA3-0FF-AQ07160915
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	7.2445E-001	7.24E-001	1.5453E+001
	Co-60	1173.23	99.85	9.4650E-002	9.04E-002	-5.7841E-002
		1332.49	99.98	9.0356E-002		-1.1662E-003
>		2505.71	0.10	0.0000E+000		0.0000E+000
	Cs-137	32.06	5.54	1.5376E+003	1.07E-001	-4.6694E+002
		661.66	84.99	1.0689E-001		-2.5509E-003
+	Tl-208	72.80	2.02	1.1700E+001	9.43E-002	-1.5353E+000
		74.97*	3.41	3.9024E+000		1.2013E+001
		84.90*	1.51	6.2876E+000		3.7440E+000
		277.36	6.31	1.2478E+000		1.3103E+000
		510.77*	22.60	4.0915E-001		4.5121E-001
		583.19*	84.50	9.4329E-002		3.2599E-001
		763.13	1.81	5.8945E+000		-7.4587E-001
		860.56*	12.42	4.9614E-001		3.5228E-001
+	Bi-212	39.86	1.06	8.1568E+002	8.57E-001	-1.7077E+002
		727.33*	6.74	8.5702E-001		1.5289E+000
		785.37*	1.11	5.5276E+000		4.7898E+000
		1620.74	1.51	5.1973E+000		5.9880E-002
		1806.00	0.09	6.9278E+001		-7.8105E+000
+	Pb-212	74.81*	10.40	1.2795E+000	1.33E-001	3.9388E+000
		77.11*	17.50	7.0922E-001		3.3379E+000
		87.30*	7.81	1.1046E+000		2.0259E+000
		115.18	0.59	1.4611E+001		-3.2601E+000
		238.63*	43.30	1.3322E-001		1.0139E+000
		300.09	3.28	2.4309E+000		-3.6582E-001
+	Bi-214	76.86*	0.43	2.8582E+001	1.76E-001	1.3452E+002
		89.81*	0.24	3.2285E+001		3.2101E+001
		386.77	0.30	2.5391E+001		-4.1671E+000
		454.77	0.29	2.5483E+001		-5.7191E-003
		609.31*	45.49	1.7582E-001		3.9491E+000
		665.45*	1.53	3.4734E+000		3.9879E+000
		703.11	0.48	1.7075E+001		9.1699E+000
		719.86	0.39	2.0015E+001		-3.2792E-002
		768.36*	4.89	1.7149E+000		4.0149E+000
		786.10*	0.31	1.9417E+001		1.6825E+001
		806.17	1.26	6.9017E+000		2.6735E+000
		934.06*	3.10	2.3026E+000		3.6182E+000
		964.08*	0.36	1.6752E+001		1.0886E+001
		1051.96	0.31	2.5930E+001		-1.6612E+001
		1120.29*	14.91	6.0034E-001		4.1020E+000

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Bi-214	1133.66	0.25	3.6186E+001	1.76E-001	2.4802E+000
		1155.19*	1.63	4.6932E+000		3.7103E+000
		1207.68	0.45	2.2389E+001		-7.8634E+000
		1238.11*	5.79	1.5490E+000		3.6151E+000
		1280.96*	1.43	4.0440E+000		2.8398E+000
		1377.67*	4.00	2.1730E+000		4.5015E+000
		1385.31	0.76	1.2135E+001		6.6138E+000
		1401.50*	1.27	4.1604E+000		4.4000E+000
		1407.98*	2.15	2.3700E+000		3.3935E+000
		1509.23*	2.11	2.9299E+000		4.5491E+000
		1538.50	0.38	2.3288E+001		1.1324E+001
		1543.32	0.20	4.2524E+001		2.8482E+001
		1583.22	0.69	1.3384E+001		8.2005E+000
		1594.73	0.25	3.3959E+001		-1.1881E+001
		1599.31	0.23	3.1526E+001		-2.1218E+001
		1661.28	1.15	6.6675E+000		2.4040E-001
		1683.99	0.22	3.2491E+001		2.1590E+001
		1729.59*	2.92	2.0535E+000		4.3555E+000
		1764.49*	15.40	3.8893E-001		4.3567E+000
		1847.42*	2.11	2.7144E+000		4.6019E+000
		1873.16	0.22	2.8995E+001		-4.3487E+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	6.8053E+001	2.17E-001	-9.5471E+000
		74.81*	6.44	2.0271E+000		6.2400E+000
		77.11*	10.80	1.1274E+000		5.3060E+000
		87.30*	4.84	1.7486E+000		3.2070E+000
		242.00*	7.43	7.1203E-001		4.3578E+000
		258.87	0.52	1.4284E+001		-4.8722E+000
		274.80	0.47	1.6642E+001		8.1707E+000
		295.22*	19.30	3.1018E-001		3.8508E+000
		351.93*	37.60	2.1698E-001		4.0458E+000
		462.00*	0.22	2.4605E+001		1.6458E+001
		533.66	0.19	3.8648E+001		-7.7997E+000
		785.96*	1.07	5.6254E+000		4.8745E+000
		839.04	0.59	1.5208E+001		1.5844E+001
+	Ra-224	81.07	0.13	1.1136E+002	1.32E+000	-8.6211E+001
		83.78*	0.22	4.3752E+001		2.6053E+001
		240.99*	4.10	1.3153E+000		8.0500E+000
+	Ra-226	81.07	0.20	7.2647E+001	1.99E+000	-5.6240E+001
		83.78*	0.33	2.8397E+001		1.6909E+001
		94.90	0.15	7.2690E+001		-3.3042E+001
		186.21*	3.59	1.9890E+000		7.4088E+000
+	Ac-228	99.50	1.26	7.0290E+000	2.70E-001	-3.1863E-001
		129.07	2.50	3.3983E+000		2.8522E+000
		209.25*	3.97	1.7744E+000		1.6725E+000
		270.24*	3.55	2.1568E+000		2.0100E+000
		328.00*	3.04	1.4005E+000		9.0149E-001
		338.32*	11.40	4.8241E-001		8.1040E-001
		409.46	2.02	3.9458E+000		1.3058E+000

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Ac-228	463.00*	4.45	1.2456E+000	2.70E-001	8.3316E-001
		755.31	1.03	8.1578E+000		3.6577E+000
		772.29	1.52	7.4435E+000		1.0818E+000
		794.94	4.31	2.0335E+000		9.0156E-001
		835.70	1.70	5.6168E+000		2.5904E-001
		911.20*	26.20	2.7013E-001		1.1228E+000
		964.79*	4.99	1.2422E+000		8.0721E-001
		968.96*	15.90	3.3623E-001		1.1345E+000
		1588.20	3.06	3.1483E+000		-1.9601E-001
		1630.62	1.52	5.1019E+000		-1.7923E-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: SMPA3-0FF-AQ07160915
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	0.994	1460.82*		10.55	1.54531E+001	5.93293E-001
Eu-152m	0.992	89.85*		69.90	1.12356E-001	1.55940E-002
Tm-170	0.999	84.25*		2.48	2.48397E+000	5.38547E-001
Tl-208	0.839	72.80	@	2.02		
		74.97*	@	3.41	1.20126E+001	7.86769E-001
		84.90*	@	1.51	3.74401E+000	8.00280E-001
		277.36		6.31		
		510.77*	@	22.60	4.51212E-001	9.38625E-002
		583.19*		84.50	3.25990E-001	2.71234E-002
		763.13	@	1.81		
		860.56*		12.42	3.52277E-001	1.13612E-001
Bi-211	0.919	351.03*		13.00	1.17213E+001	5.31540E-001
Bi-212	0.750	39.86	@	1.06		
		727.33*		6.74	1.52888E+000	2.23321E-001
		785.37*		1.11	4.78976E+000	1.28651E+000
		1620.74		1.51		
		1806.00	@	0.09		
Pb-212	0.921	74.81*		10.40	3.93876E+000	2.81882E-001
		77.11*		17.50	3.33794E+000	2.02969E-001
		87.30*		7.81	2.02589E+000	1.94376E-001
		115.18	@	0.59		
		238.63*		43.30	1.01395E+000	5.65269E-002
		300.09		3.28		
Bi-214	0.885	76.86*	@	0.43	1.34519E+002	8.30583E+000
		89.81*	@	0.24	3.21010E+001	4.60171E+000
		386.77	@	0.30		
		454.77	@	0.29		
		609.31*		45.49	3.94911E+000	1.45624E-001
		665.45*	@	1.53	3.98794E+000	8.37741E-001
		703.11	@	0.48		
		719.86	@	0.39		
		768.36*		4.89	4.01494E+000	4.45168E-001
		786.10*	@	0.31	1.68249E+001	5.26910E+000
		806.17	@	1.26		
		934.06*		3.10	3.61821E+000	5.76384E-001
		964.08*	@	0.36	1.08859E+001	2.63731E+000
		1051.96	@	0.31		
		1120.29*		14.91	4.10199E+000	2.26178E-001
		1133.66	@	0.25		
		1155.19*	@	1.63	3.71031E+000	1.08334E+000
		1207.68	@	0.45		

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Bi-214	0.885	1238.11*		5.79	3.61505E+000	4.20023E-001
		1280.96*	@	1.43	2.83977E+000	9.44915E-001
		1377.67*		4.00	4.50155E+000	5.83048E-001
		1385.31	@	0.76		
		1401.50*	@	1.27	4.39996E+000	8.32222E-001
		1407.98*	@	2.15	3.39350E+000	5.31236E-001
		1509.23*	@	2.11	4.54909E+000	7.88127E-001
		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	4.35551E+000	6.16165E-001
		1764.49*		15.40	4.35671E+000	2.54729E-001
		1847.42*	@	2.11	4.60188E+000	7.87317E-001
		1873.16	@	0.22		
		2118.55	@	1.14		
		2204.21	@	5.08		
Pb-214	0.958	53.28	@	1.20		
		74.81*		6.44	6.24001E+000	4.56542E-001
		77.11*		10.80	5.30604E+000	3.46028E-001
		87.30*		4.84	3.20701E+000	3.13633E-001
		242.00*		7.43	4.35781E+000	2.60700E-001
		258.87	@	0.52		
		274.80	@	0.47		
		295.22*		19.30	3.85079E+000	1.93043E-001
		351.93*		37.60	4.04584E+000	1.78936E-001
		462.00*	@	0.22	1.64581E+001	5.57621E+000
		533.66	@	0.19		
		785.96*	@	1.07	4.87451E+000	1.35834E+000
		839.04	@	0.59		
Ra-224	0.840	81.07	@	0.13		
		83.78*	@	0.22	2.60528E+001	5.65099E+000
		240.99*		4.10	8.04998E+000	4.76816E-001
Ra-226	0.881	81.07	@	0.20		
		83.78*	@	0.33	1.69090E+001	3.66685E+000
		94.90	@	0.15		
		186.21*		3.59	7.40879E+000	6.00381E-001
Ac-228	0.654	99.50	@	1.26		
		129.07	@	2.50		
		209.25*		3.97	1.67251E+000	4.04853E-001
		270.24*		3.55	2.00998E+000	4.89834E-001
		328.00*		3.04	9.01492E-001	3.16527E-001
		338.32*		11.40	8.10400E-001	1.22393E-001
		409.46	@	2.02		
		463.00*		4.45	8.33161E-001	2.83818E-001
		755.31	@	1.03		
		772.29	@	1.52		

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Ac-228	0.654	794.94		4.31		
		835.70	@	1.70		
		911.20*		26.20	1.12283E+000	9.22408E-002
		964.79*		4.99	8.07213E-001	1.95675E-001
		968.96*		15.90	1.13449E+000	1.00866E-001
		1588.20		3.06		
		1630.62	@	1.52		
Th-234	0.451	63.30		3.75		
		92.59*		4.33	3.78773E+000	3.57810E-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		0.994	1.545312E+001	5.932932E-001
X	Cd-109		0.928		
	Eu-152m		0.992	9.827118E-002	1.556802E-002
	Tm-170		0.999	1.011065E+000	5.405810E-001
	Tl-208	@	0.839	3.298239E-001	2.624452E-002
	Bi-211		0.919	1.822081E+000	6.413914E-001
	Bi-212	@	0.750	1.493032E+000	2.184700E-001
	Pb-212	@	0.921	9.588728E-001	5.279565E-002
	Bi-214	@	0.885	4.024251E+000	9.972980E-002
	Pb-214	@	0.958	3.416913E+000	1.372877E-001
	Ra-224	@	0.840	1.738068E+000	5.310661E-001
	Ra-226	@	0.881	7.408792E+000	5.874739E-001
	Ac-228	@	0.654	1.022465E+000	5.135714E-002
X	Th-228		0.498		
X	Th-231		0.839		
	Th-234	@	0.451	3.787732E+000	3.578099E-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: 10/4/2016 6:46:50 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
7	143.78	1.7974E-002	44.19	Tol.	Ra-223
9	193.57	2.4785E-003	171.80		
20	546.95	8.6934E-004	249.29	Sum	
43	1839.18	2.6761E-003	33.33	Sum	

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\SMPA3offAI15160915.CNF

Report Generated On	: 10/4/2016 8:56:30 PM
Sample Title	: SMPA3-OFF-AI15-160915
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	: 7.209E+002 GWET
Sample Taken On	: 9/15/2016 9:00:00 AM
Acquisition Started	: 10/4/2016 6:56:27 PM
Live Time	: 7200.0 seconds
Real Time	: 7201.6 seconds
Dead Time	: 0.02 %

Energy Calibration Used Done On	: 10/4/2016
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: SMPA3-0FF-AI15-160915
Peak Analysis Performed on: 10/4/2016 8:56:30 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	296-	317	300.04	75.04	0.92	1.26E+002	18.50	2.95E+002
m	2	296-	317	308.97	77.28	0.92	2.36E+002	21.94	3.23E+002
	3	367-	382	371.36	92.88	1.04	1.42E+002	36.95	4.03E+002
	4	737-	752	743.61	185.97	1.23	1.78E+002	32.34	2.88E+002
	5	785-	795	791.16	197.86	0.49	2.13E+001	20.99	1.75E+002
M	6	948-	973	954.21	238.63	1.12	6.60E+002	29.48	2.10E+002
m	7	948-	973	966.52	241.71	1.12	1.39E+002	16.32	2.18E+002
	8	1077-	1086	1081.51	270.47	0.41	9.71E+000	18.09	1.39E+002
	9	1175-	1187	1180.13	295.13	1.11	2.58E+002	25.67	1.51E+002
	10	1343-	1357	1352.40	338.21	0.86	1.16E+002	23.59	1.53E+002
	11	1399-	1417	1406.79	351.81	1.18	4.26E+002	32.75	1.90E+002
	12	2032-	2054	2041.33	510.49	1.27	2.48E+002	28.64	1.48E+002
	13	2324-	2340	2331.06	582.94	1.26	2.64E+002	21.51	6.38E+001
	14	2423-	2443	2435.41	609.04	1.16	3.57E+002	26.22	9.10E+001
	15	2635-	2653	2644.78	661.39	1.12	3.47E+002	24.71	7.81E+001
	16	3174-	3185	3178.97	794.98	0.64	3.14E+001	10.56	3.16E+001
	17	3335-	3346	3340.10	835.27	0.49	1.66E+001	10.50	3.74E+001
	18	3632-	3651	3642.26	910.84	1.33	1.62E+002	18.36	5.00E+001
	19	3795-	3806	3799.45	950.14	0.53	1.44E+001	8.87	2.46E+001
	20	3864-	3881	3873.34	968.62	1.08	8.13E+001	17.39	6.77E+001
	21	4470-	4487	4477.69	1119.75	1.71	7.60E+001	16.78	6.30E+001
	22	5829-	5854	5841.50	1460.80	1.90	1.11E+003	34.77	2.26E+001
	23	6911-	6922	6916.15	1729.54	0.48	1.48E+001	5.59	6.21E+000
	24	7047-	7068	7057.38	1764.85	1.39	7.54E+001	9.20	2.57E+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: SMPA3-0FF-AI15-160915
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	4.5414E-001	4.54E-001	9.3213E+000
	Co-60	1173.23	99.85	5.6124E-002	4.76E-002	2.2492E-003
		1332.49	99.98	4.7643E-002		-2.4205E-002
>		2505.71	0.10	0.0000E+000		0.0000E+000
+	Cs-137	32.06	5.54	7.5891E+002	4.79E-002	6.5682E+001
		661.66*	84.99	4.7921E-002		2.1258E-001
+	Tl-208	72.80	2.02	5.1012E+000	4.03E-002	-3.1153E+000
		74.97*	3.41	1.6272E+000		1.7760E+000
		84.90	1.51	4.0447E+000		1.4612E+000
		277.36	6.31	5.9194E-001		2.5246E-003
		510.77*	22.60	2.5827E-001		1.5144E-001
		583.19*	84.50	4.0323E-002		1.4751E-001
		763.13	1.81	2.4044E+000		-1.7158E+000
		860.56	12.42	3.9620E-001		1.8309E-001
	Bi-212	39.86	1.06	3.8713E+002	7.57E-001	2.7305E+001
		727.33	6.74	7.5726E-001		2.7370E-001
		785.37	1.11	4.2533E+000		4.0465E-002
		1620.74	1.51	2.3627E+000		-7.9862E-001
		1806.00	0.09	3.6231E+001		-1.6752E+001
+	Pb-212	74.81*	10.40	5.3352E-001	6.29E-002	5.8231E-001
		77.11*	17.50	3.0017E-001		5.8590E-001
		87.30	7.81	7.5132E-001		3.0666E-001
		115.18	0.59	6.3907E+000		-4.3658E+000
		238.63*	43.30	6.2891E-002		3.9399E-001
		300.09	3.28	1.1205E+000		-3.1781E-001
+	Bi-214	76.86*	0.43	1.2096E+001	9.41E-002	2.3610E+001
		89.81	0.24	2.3466E+001		8.4786E+000
		386.77	0.30	1.2660E+001		1.2831E+000
		454.77	0.29	1.3928E+001		5.9024E+000
		609.31*	45.49	9.4058E-002		3.8475E-001
		665.45	1.53	5.0077E+000		6.8671E-001
		703.11	0.48	9.0076E+000		1.5409E+000
		719.86	0.39	1.1629E+001		1.1590E-001
		768.36	4.89	9.4892E-001		5.5937E-001
		786.10	0.31	1.5321E+001		5.1808E+000
		806.17	1.26	3.7238E+000		-2.1966E-001
		934.06	3.10	1.5710E+000		9.4533E-001
		964.08	0.36	1.9850E+001		9.8982E+000
		1051.96	0.31	1.5978E+001		1.8285E+000
		1120.29*	14.91	3.4854E-001		3.8180E-001

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Bi-214	1133.66	0.25	2.1408E+001	9.41E-002	1.7620E+000
		1155.19	1.63	3.4405E+000		1.4742E-001
		1207.68	0.45	1.3477E+001		7.2951E-001
		1238.11	5.79	1.2591E+000		3.7883E-001
		1280.96	1.43	4.0942E+000		1.9184E+000
		1377.67	4.00	1.3574E+000		5.9925E-001
		1385.31	0.76	6.1330E+000		-1.2947E+000
		1401.50	1.27	3.6849E+000		1.0890E+000
		1407.98	2.15	2.2682E+000		2.1995E-001
		1509.23	2.11	2.0377E+000		8.4863E-001
		1538.50	0.38	9.7336E+000		4.5173E+000
		1543.32	0.20	1.7200E+001		-2.4355E+000
		1583.22	0.69	7.2063E+000		3.5453E+000
		1594.73	0.25	1.7879E+001		-5.4581E+000
		1599.31	0.23	1.7762E+001		7.9888E+000
		1661.28	1.15	3.0976E+000		-4.6515E-001
		1683.99	0.22	1.6654E+001		-2.4170E+000
		1729.59*	2.92	7.4803E-001		5.1247E-001
		1764.49*	15.40	1.4432E-001		4.6792E-001
		1847.42	2.11	2.0681E+000		1.0008E+000
		1873.16	0.22	1.8088E+001		6.2668E+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	3.2347E+001	1.08E-001	7.7243E+000
		74.81*	6.44	8.4515E-001		9.2245E-001
		77.11*	10.80	4.7711E-001		9.3127E-001
		87.30	4.84	1.1892E+000		4.8540E-001
		242.00*	7.43	3.5421E-001		4.9340E-001
		258.87	0.52	6.6710E+000		-3.6882E+000
		274.80	0.47	7.9298E+000		3.9161E+000
		295.22*	19.30	1.4655E-001		3.9425E-001
		351.93*	37.60	1.0773E-001		3.6901E-001
		462.00	0.22	1.8948E+001		9.2092E+000
		533.66	0.19	1.9747E+001		7.9321E+000
		785.96	1.07	4.4231E+000		1.1915E+000
		839.04	0.59	8.7239E+000		1.7181E+000
+	Ra-224	81.07	0.13	4.9482E+001	6.54E-001	-2.5722E+000
		83.78	0.22	2.7511E+001		-3.1576E+001
		240.99*	4.10	6.5438E-001		9.1152E-001
+	Ra-226	81.07	0.20	3.2277E+001	9.67E-001	-1.6779E+000
		83.78	0.33	1.7854E+001		-2.0492E+001
		94.90	0.15	3.2332E+001		-5.5455E+000
		186.21*	3.59	9.6660E-001		8.5457E-001
	Ac-228	99.50	1.26	3.3170E+000	2.80E-001	1.2625E+000
		129.07	2.50	1.6583E+000		1.3708E+000
		209.25	3.97	9.8696E-001		2.4000E-001
		270.24	3.55	1.0876E+000		4.3649E-001
		328.00	3.04	1.2683E+000		4.9227E-001
		338.32	11.40	4.0804E-001		4.7829E-001
		409.46	2.02	1.9217E+000		-1.0773E+000

Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
Ac-228	463.00	4.45	9.5883E-001	2.80E-001	4.1519E-001
	755.31	1.03	4.1946E+000		-1.0509E+000
	772.29	1.52	3.0587E+000		1.7538E+000
	794.94	4.31	1.1963E+000		9.8725E-001
	835.70	1.70	2.8790E+000		-1.3951E+000
	911.20	26.20	2.8012E-001		4.3569E-001
	964.79	4.99	1.4957E+000		7.9114E-001
	968.96	15.90	4.6629E-001		7.4335E-001
	1588.20	3.06	1.6602E+000		-4.0734E-001
	1630.62	1.52	2.2718E+000		-1.3822E+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: SMPA3-0FF-AI15-160915
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	1.000	1460.82*		10.55	9.32127E+000	3.86305E-001
Mn-54	0.970	834.84*		99.97	1.06236E-002	6.72881E-003
Cs-137	0.985	32.06	@	5.54		
		661.66*		84.99	2.12576E-001	1.62988E-002
Tl-208	0.705	72.80	@	2.02		
		74.97*	@	3.41	1.77596E+000	2.67596E-001
		84.90	@	1.51		
		277.36		6.31		
		510.77*	@	22.60	1.51437E-001	5.72833E-002
		583.19*		84.50	1.47511E-001	1.33020E-002
		763.13	@	1.81		
		860.56		12.42		
Pb-212	0.767	74.81*		10.40	5.82310E-001	8.93339E-002
		77.11*		17.50	5.85900E-001	6.05526E-002
		87.30		7.81		
		115.18	@	0.59		
		238.63*		43.30	3.93987E-001	2.54962E-002
		300.09		3.28		
Bi-214	0.513	76.86*	@	0.43	2.36098E+001	2.45315E+000
		89.81	@	0.24		
		386.77	@	0.30		
		454.77	@	0.29		
		609.31*		45.49	3.84752E-001	3.06200E-002
		665.45	@	1.53		
		703.11	@	0.48		
		719.86	@	0.39		
		768.36		4.89		
		786.10	@	0.31		
		806.17	@	1.26		
		934.06		3.10		
		964.08	@	0.36		
		1051.96	@	0.31		
		1120.29*		14.91	3.81799E-001	8.48176E-002
		1133.66	@	0.25		
		1155.19	@	1.63		
		1207.68	@	0.45		
		1238.11		5.79		
		1280.96	@	1.43		
		1377.67		4.00		
		1385.31	@	0.76		
		1401.50	@	1.27		

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Bi-214	0.513	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	5.12467E-001	1.94523E-001
		1764.49*		15.40	4.67921E-001	6.42226E-002
		1847.42	@	2.11		
		1873.16	@	0.22		
		2118.55	@	1.14		
		2204.21	@	5.08		
Pb-214	0.851	53.28	@	1.20		
		74.81*		6.44	9.22446E-001	1.42209E-001
		77.11*		10.80	9.31274E-001	9.87176E-002
		87.30		4.84		
		242.00*		7.43	4.93401E-001	6.22850E-002
		258.87	@	0.52		
		274.80	@	0.47		
		295.22*		19.30	3.94248E-001	4.25515E-002
		351.93*		37.60	3.69014E-001	3.24095E-002
		462.00	@	0.22		
		533.66	@	0.19		
		785.96	@	1.07		
		839.04	@	0.59		
Ra-224	0.816	81.07	@	0.13		
		83.78	@	0.22		
		240.99*		4.10	9.11519E-001	1.14812E-001
Ra-226	0.771	81.07	@	0.20		
		83.78	@	0.33		
		94.90	@	0.15		
		186.21*		3.59	8.54574E-001	2.21143E-001
Th-234	0.451	63.30		3.75		
		92.59*		4.33	4.14971E-001	2.37731E-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

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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		1.000	9.321275E+000	3.863051E-001
	Mn-54		0.970	1.062356E-002	6.728814E-003
	Cs-137	@	0.985	2.125760E-001	1.629883E-002
	Tl-208	@	0.705	1.469164E-001	1.323095E-002
X	Bi-211		0.907		
	Pb-212	@	0.767	3.804672E-001	2.262889E-002
	Bi-214	@	0.513	3.982851E-001	2.623127E-002
	Pb-214	@	0.851	3.694651E-001	2.457162E-002
	Ra-224	@	0.816	2.289620E-001	1.229587E-001
	Ra-226	@	0.771	8.545736E-001	2.211432E-001
	Th-234	@	0.451	4.149711E-001	2.377309E-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: 10/4/2016 8:56:30 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
5	197.86	6.1836E-004	482.28	Tol.	Yb-169 Ta-182
8	270.47	1.3490E-003	186.29	Tol.	Rn-219 Ac-228
10	338.21	1.6091E-002	20.36	Tol.	Ra-223 Ac-228
16	794.98	4.3618E-003	33.62	Sum	
18	910.84	2.1764E-002	11.79	Sum	Ac-228
19	950.14	1.9979E-003	61.69	S-Esc.	
20	968.62	1.1291E-002 Ac-228	21.39	Tol.	Sb-124 Ac-228

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

Errors quoted at 1.000 sigma