Date: 9/29/2016

9626 Niagara Falls Blvd Onsite Gamma Spec Screening Lab

Gamma Spectroscopy Detector work sheet.

Counted by (Initial,date)	Geometry Description	SMP 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 9/29/16	450 cc SOIL	N002-OF-AF06-01-01	9/23/2016 09:00	790.4	g DRY	7200	DJK 9/29/16
DJK 9/29/16	450 cc SOIL	N002-OF-AK06-01-01	9/23/2016 09:30	591.2	g DRY	7200	DJK 9/29/16
DJK 9/29/16	450 cc SOIL	N002-OF-AL03-01-01	9/9/2016 11:40	795.8	g DRY	7200	DJK 9/29/16
DJK 9/29/16	450 cc SOIL	N002-OF-AI09-01-01	8/4/2016 13:15	581.5	g DRY	7200	DJK 9/30/16
DJK 9/29/16	450 cc SOIL	N002-OF-AH02-01-01	9/22/2016 14:00	591.0	g DRY	7200	DJK 9/30/16
DJK 9/30/16	450 cc SOIL	N002-OF-AM10-01-01	8/16/2016 14:35	575.1	g DRY	7200	DJK 9/30/16
	450 cc SOIL					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: ERT01,C:\GENIE2K\CAMFILES\SMPN002-OF-AI09-01-01.CNF

DWK 9/30/16

Report Generated On	:	9/29/2016 7:13:27 PM
Sample Title	:	N0002-OF-AI09-01-01
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	:	5.815E+002 GDRY
Sample Taken On	:	8/4/2016 1:15:00 PM
Acquisition Started	:	9/29/2016 5:13:24 PM
Live Time	:	7200.0 seconds
Real Time	:	7202.4 seconds
Dead Time	:	0.03 %

Energy Calibration Used Done On	:	9/29/2016
Efficiency Calibration Used Done On	:	9/27/2016
Efficiency ID	:	ERT0101

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***** P E A K A N A L Y S I S R E P O R T *****
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Detector Name: ERT01
Sample Title: N0002-OF-AI09-01-01
Peak Analysis Performed on: 9/29/2016 7:13:27 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-	315	299.69	74.80	0.98	2.05E+002	23.22	6.78E+002
m	2	293-	315	309.03	77.14	0.98	3.84E+002	26.66	6.64E+002
M	3	344-	379	349.03	87.14	1.27	1.79E+002	21.22	4.77E+002
m	4	344-	379	360.19	89.93	1.28	1.56E+002	20.27	7.23E+002
m	5	344-	379	371.86	92.85	1.28	2.61E+002	22.75	7.04E+002
	6	738-	756	744.24	185.99	0.81	2.14E+002	41.37	4.38E+002
	7	833-	843	836.99	209.19	0.74	7.64E+001	25.34	2.36E+002
M	8	947-	977	954.19	238.50	1.04	1.12E+003	36.47	2.88E+002
m	9	947-	977	966.64	241.61	1.05	1.77E+002	17.34	2.38E+002
	10	1074-	1088	1080.76	270.15	0.89	1.06E+002	25.58	1.90E+002
	11	1167-	1186	1179.90	294.95	1.06	4.07E+002	34.35	2.19E+002
	12	1306-	1321	1310.79	327.69	0.53	4.90E+001	24.94	1.87E+002
	13	1344-	1358	1352.16	338.03	0.95	2.32E+002	26.68	1.67E+002
	14	1399-	1417	1406.74	351.69	1.13	6.47E+002	34.39	1.57E+002
	15	1631-	1642	1637.04	409.29	0.97	5.30E+001	15.99	8.10E+001
	16	1845-	1859	1850.88	462.77	1.41	6.75E+001	18.07	8.95E+001
	17	2030-	2059	2040.53	510.20	1.86	3.53E+002	32.56	1.47E+002
	18	2323-	2340	2330.38	582.70	1.09	3.51E+002	26.92	1.11E+002
	19	2426-	2444	2434.87	608.83	1.32	5.72E+002	28.15	6.56E+001
	20	2898-	2913	2907.11	726.94	1.00	9.18E+001	17.51	7.12E+001
	21	3434-	3447	3440.18	860.27	0.91	4.50E+001	11.90	3.50E+001
	22	3631-	3651	3641.76	910.68	1.22	3.08E+002	22.74	5.76E+001
	23	3726-	3738	3732.92	933.49	0.60	4.04E+001	11.82	3.66E+001
M	24	3851-	3882	3856.61	964.42	1.49	3.21E+001	8.98	6.01E+001
m	25	3851-	3882	3872.91	968.50	1.49	1.86E+002	15.61	6.34E+001
	26	4470-	4488	4477.97	1119.83	0.65	1.15E+002	18.42	6.52E+001
	27	5504-	5516	5509.79	1377.90	0.49	3.12E+001	8.53	1.58E+001
	28	5827-	5853	5841.04	1460.75	1.77	1.48E+003	40.92	4.40E+001
	29	6344-	6355	6349.58	1587.94	0.38	1.99E+001	6.57	9.09E+000
	30	7047-	7065	7055.86	1764.58	1.08	9.61E+001	11.68	1.19E+001

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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***** 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: N0002-OF-AI09-01-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GDRY)	Nuclide MDA (pCi/GDRY)	Activity (pCi/GDRY)
+	K-40	1460.82*	10.55	7.4918E-001	7.49E-001	1.5444E+001
	Co-60	1173.23	99.85	8.1529E-002	7.19E-002	2.8701E-002
		1332.49	99.98	7.1945E-002		1.8225E-002
>		2505.71	0.10	0.0000E+000		0.0000E+000
	Cs-137	32.06	5.54	1.3876E+003	7.65E-002	-3.6027E+002
		661.66	84.99	7.6531E-002		6.7272E-002
+	Tl-208	72.80	2.02	8.7247E+000	6.94E-002	-3.0417E+000
		74.97*	3.41	3.1849E+000		3.7546E+000
		84.90	1.51	6.4855E+000		-1.1169E+000
		277.36	6.31	8.8539E-001		3.4887E-001
		510.77*	22.60	3.5887E-001		4.5676E-001
		583.19*	84.50	6.9390E-002		2.5338E-001
		763.13	1.81	3.9222E+000		-2.8821E+000
		860.56*	12.42	3.1993E-001		2.9723E-001
+	Bi-212	39.86	1.06	8.9781E+002	7.66E-001	-2.3148E+002
		727.33*	6.74	7.6638E-001		9.9380E-001
		785.37	1.11	5.9945E+000		-1.0393E+000
		1620.74	1.51	3.5803E+000		2.7413E-001
		1806.00	0.09	6.0739E+001		2.5753E+001
+	Pb-212	74.81*	10.40	1.0443E+000	9.32E-002	1.2311E+000
		77.11*	17.50	5.5289E-001		1.2341E+000
		87.30*	7.81	7.5744E-001		9.2641E-001
		115.18	0.59	1.0847E+001		5.6552E+000
		238.63*	43.30	9.3221E-002		8.7508E-001
		300.09	3.28	1.6836E+000		-8.9780E-001
+	Bi-214	76.86*	0.43	2.1482E+001	9.58E-002	4.7948E+001
		89.81*	0.24	2.6395E+001		2.2971E+001
		386.77	0.30	1.6242E+001		-5.3267E+000
		454.77	0.29	1.8252E+001		7.1572E+000
		609.31*	45.49	9.5820E-002		7.6469E-001
		665.45	1.53	4.1591E+000		2.0348E+000
		703.11	0.48	1.3527E+001		-7.3795E+000
		719.86	0.39	1.4790E+001		-7.5836E-002
		768.36	4.89	1.5365E+000		1.1249E+000
		786.10	0.31	2.0436E+001		-5.9627E+000
		806.17	1.26	5.2429E+000		3.2497E+000
		934.06*	3.10	1.2987E+000		1.0707E+000
		964.08*	0.36	1.2412E+001		7.4098E+000
		1051.96	0.31	2.4566E+001		1.3322E+001
		1120.29*	14.91	4.5087E-001		7.1527E-001

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GDRY)	Nuclide MDA (pCi/GDRY)	Activity (pCi/GDRY)
+	Bi-214	1133.66	0.25	2.8427E+001	9.58E-002	-1.5400E+001
		1155.19	1.63	5.1742E+000		8.9831E-001
		1207.68	0.45	1.9492E+001		-3.0706E+000
		1238.11	5.79	1.7017E+000		1.2578E+000
		1280.96	1.43	5.3377E+000		1.3514E+000
		1377.67*	4.00	8.7313E-001		8.3467E-001
		1385.31	0.76	7.3587E+000		-2.4789E+000
		1401.50	1.27	4.9493E+000		-3.6713E+000
		1407.98	2.15	3.2848E+000		1.6408E+000
		1509.23	2.11	2.7535E+000		4.4537E-001
		1538.50	0.38	1.4666E+001		-3.4066E+000
		1543.32	0.20	2.9248E+001		1.5322E+001
		1583.22	0.69	9.0816E+000		3.7366E+000
		1594.73	0.25	2.5795E+001		1.2032E+000
		1599.31	0.23	2.3108E+001		-8.4885E-002
		1661.28	1.15	4.4681E+000		-2.0133E+000
		1683.99	0.22	2.5533E+001		8.5909E+000
		1729.59	2.92	1.8119E+000		1.2423E+000
		1764.49*	15.40	2.8743E-001		7.5101E-001
		1847.42	2.11	2.8623E+000		1.8227E+000
		1873.16	0.22	2.2037E+001		-6.2910E+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	7.0021E+001	1.22E-001	8.3691E+000
		74.81*	6.44	1.5950E+000		1.8804E+000
		77.11*	10.80	8.4736E-001		1.8913E+000
		87.30*	4.84	1.1560E+000		1.4139E+000
		242.00*	7.43	4.5808E-001		7.8022E-001
		258.87	0.52	8.8638E+000		-7.3556E-001
		274.80	0.47	1.1207E+001		5.5091E+000
		295.22*	19.30	2.5005E-001		7.7184E-001
		351.93*	37.60	1.2218E-001		6.9793E-001
		462.00*	0.22	1.7474E+001		1.5200E+001
		533.66	0.19	2.9305E+001		1.0761E+001
		785.96	1.07	5.9199E+000		-1.7273E+000
		839.04	0.59	1.1973E+001		6.4959E+000
+	Ra-224	81.07	0.13	8.1298E+001	8.78E-001	-4.1817E+001
		83.78	0.22	4.4704E+001		-9.3881E-001
		240.99*	4.10	8.7767E-001		1.4949E+000
+	Ra-226	81.07	0.20	5.1133E+001	1.54E+000	-2.6301E+001
		83.78	0.33	2.7973E+001		-5.8746E-001
		94.90	0.15	4.8389E+001		-1.1060E+001
		186.21*	3.59	1.5411E+000		1.3524E+000
+	Ac-228	99.50	1.26	4.8719E+000	2.32E-001	-5.4328E-001
		129.07	2.50	2.5515E+000		1.8276E+000
		209.25*	3.97	9.2593E-001		6.2431E-001
		270.24*	3.55	1.1536E+000		1.0995E+000
		328.00*	3.04	1.5512E+000		6.6689E-001
		338.32*	11.40	3.8712E-001		8.5999E-001
		409.46*	2.02	1.6449E+000		1.2647E+000

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GDRY)	Nuclide MDA (pCi/GDRY)	Activity (pCi/GDRY)
+	Ac-228	463.00*	4.45	9.1746E-001	2.32E-001	7.9810E-001
		755.31	1.03	6.7034E+000		5.6437E+000
		772.29	1.52	4.9408E+000		1.0126E+000
		794.94	4.31	1.7699E+000		2.0236E+000
		835.70	1.70	4.3127E+000		3.3638E-001
		911.20*	26.20	2.3231E-001		9.8711E-001
		964.79*	4.99	9.5458E-001		5.6988E-001
		968.96*	15.90	3.0815E-001		1.0422E+000
		1588.20*	3.06	1.0242E+000		8.1179E-001
		1630.62	1.52	3.8748E+000		-7.7456E-002

+ = 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: N0002-OF-AI09-01-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

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

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GDRY)	Activity Uncertainty
K-40	0.999	1460.82*		10.55	1.54437E+001	5.96040E-001
Eu-152m	0.999	89.85*		69.90	8.08119E-002	1.08264E-002
Tl-208	0.807	72.80	@	2.02		
		74.97*	@	3.41	3.75459E+000	4.44529E-001
		84.90	@	1.51		
		277.36		6.31		
		510.77*	@	22.60	4.56756E-001	8.43624E-002
		583.19*		84.50	2.53380E-001	2.15473E-002
		763.13	@	1.81		
		860.56*		12.42	2.97234E-001	7.89719E-002
Bi-211	0.933	351.03*		13.00	2.02840E+000	1.37171E-001
Bi-212	0.559	39.86	@	1.06		
		727.33*		6.74	9.93796E-001	1.91990E-001
		785.37		1.11		
		1620.74		1.51		
		1806.00	@	0.09		
Pb-212	0.920	74.81*		10.40	1.23107E+000	1.50018E-001
		77.11*		17.50	1.23405E+000	1.02106E-001
		87.30*		7.81	9.26408E-001	1.17814E-001
		115.18	@	0.59		
		238.63*		43.30	8.75081E-001	4.89495E-002
		300.09		3.28		
Bi-214	0.571	76.86*	@	0.43	4.79484E+001	4.00044E+000
		89.81*	@	0.24	2.29706E+001	3.18580E+000
		386.77	@	0.30		
		454.77	@	0.29		
		609.31*		45.49	7.64689E-001	4.43070E-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	1.07068E+000	3.14010E-001
		964.08*	@	0.36	7.40977E+000	2.09798E+000
		1051.96	@	0.31		
		1120.29*		14.91	7.15272E-001	1.16081E-001
		1133.66	@	0.25		
		1155.19	@	1.63		
		1207.68	@	0.45		
		1238.11		5.79		

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GDRY)	Activity Uncertainty
Bi-214	0.571	1280.96	@	1.43		
		1377.67*		4.00	8.34675E-001	2.29211E-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	7.51012E-001	1.00716E-001
		1847.42	@	2.11		
		1873.16	@	0.22		
		2118.55	@	1.14		
		2204.21	@	5.08		
Pb-214	0.939	53.28	@	1.20		
		74.81*		6.44	1.88037E+000	2.30918E-001
		77.11*		10.80	1.89130E+000	1.62711E-001
		87.30*		4.84	1.41391E+000	1.81792E-001
		242.00*		7.43	7.80217E-001	8.44326E-002
		258.87	@	0.52		
		274.80	@	0.47		
		295.22*		19.30	7.71840E-001	7.26068E-002
		351.93*		37.60	6.97930E-001	4.66764E-002
		462.00*	@	0.22	1.52002E+001	4.15323E+000
		533.66	@	0.19		
		785.96	@	1.07		
		839.04	@	0.59		
Ra-224	0.834	81.07	@	0.13		
		83.78	@	0.22		
		240.99*		4.10	1.49489E+000	1.61284E-001
Ra-226	0.772	81.07	@	0.20		
		83.78	@	0.33		
		94.90	@	0.15		
		186.21*		3.59	1.35242E+000	3.49073E-001
Ac-228	0.732	99.50	@	1.26		
		129.07	@	2.50		
		209.25*		3.97	6.24306E-001	2.09982E-001
		270.24*		3.55	1.09948E+000	2.70268E-001
		328.00*		3.04	6.66888E-001	3.41138E-001
		338.32*		11.40	8.59994E-001	1.08470E-001
		409.46*	@	2.02	1.26469E+000	3.86306E-001
		463.00*		4.45	7.98096E-001	2.19886E-001
		755.31	@	1.03		
		772.29	@	1.52		
		794.94		4.31		

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GDRY)	Activity Uncertainty
Ac-228	0.732	835.70	@	1.70		
		911.20*		26.20	9.87107E-001	8.34274E-002
		964.79*		4.99	5.69881E-001	1.61423E-001
		968.96*		15.90	1.04220E+000	9.64431E-002
		1588.20*		3.06	8.11791E-001	2.70453E-001
		1630.62	@	1.52		
Th-234	0.452	63.30		3.75		
		92.59*		4.33	1.45499E+000	2.00346E-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/GDRY)	Wt mean Activity Uncertainty
	K-40		0.999	1.544367E+001	5.960403E-001
X	Cd-109		0.881		
	Eu-152m		0.999	7.813069E-002	1.080499E-002
	Tl-208	@	0.807	2.557884E-001	2.067464E-002
	Bi-211		0.933	9.378348E-002	2.255120E-001
	Bi-212	@	0.559	9.937961E-001	1.919895E-001
	Pb-212	@	0.920	8.030982E-001	4.143733E-002
	Bi-214	@	0.571	7.621198E-001	3.739007E-002
	Pb-214	@	0.939	6.656615E-001	6.242808E-002
	Ra-224	@	0.834	2.194875E-001	1.999678E-001
	Ra-226	@	0.772	1.352416E+000	3.490730E-001
	Ac-228	@	0.732	9.062781E-001	4.478360E-002
	Th-234	@	0.452	1.454988E+000	2.003459E-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: 9/29/2016 7:13:27 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

All peaks were identified.

```
*****************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S          *****
*****************************************************************************
```

Filename: ERT01,C:\GENIE2K\CAMFILES\SMPN002-OF-AH02-01-01.CNF

DJK 9/29/16
9/30/16

Report Generated On	:	9/29/2016 9:35:01 PM
Sample Title	:	N0002-OF-AH02-01-01
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	:	5.910E+002 GDRY
Sample Taken On	:	9/22/2016 2:00:00 PM
Acquisition Started	:	9/29/2016 7:34:58 PM
Live Time	:	7200.0 seconds
Real Time	:	7202.4 seconds
Dead Time	:	0.03 %

Energy Calibration Used Done On	:	9/29/2016
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: N0002-OF-AH02-01-01
Peak Analysis Performed on: 9/29/2016 9:35:01 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-	262	253.88	63.34	0.70	7.65E+001	35.57	4.49E+002
M	2	296-	313	299.91	74.86	0.94	1.75E+002	19.99	3.54E+002
m	3	296-	313	308.60	77.03	0.95	3.06E+002	23.58	4.63E+002
	4	328-	342	336.10	83.91	0.45	1.15E+001	37.31	4.78E+002
	5	366-	379	371.61	92.79	1.36	2.17E+002	37.45	4.29E+002
	6	738-	753	743.08	185.70	0.69	2.24E+002	33.01	2.85E+002
M	7	946-	975	953.98	238.45	1.10	7.24E+002	29.74	2.43E+002
m	8	946-	975	967.23	241.76	1.10	1.70E+002	16.61	2.04E+002
	9	1171-	1190	1180.35	295.06	1.17	4.37E+002	31.06	1.51E+002
	10	1194-	1206	1199.86	299.94	1.15	5.90E+001	17.85	9.80E+001
	11	1347-	1361	1352.47	338.11	1.24	1.57E+002	23.49	1.34E+002
	12	1400-	1416	1406.77	351.69	0.96	6.83E+002	33.56	1.41E+002
	13	1847-	1859	1851.64	462.96	0.77	2.50E+001	15.26	7.70E+001
	14	2029-	2055	2041.49	510.44	1.56	2.48E+002	29.24	1.39E+002
	15	2323-	2339	2331.15	582.89	1.24	2.34E+002	21.73	7.61E+001
	16	2425-	2444	2435.37	608.95	0.95	5.12E+002	28.89	9.23E+001
	17	2901-	2914	2907.05	726.93	1.16	6.10E+001	12.09	3.10E+001
	18	3064-	3076	3070.10	767.71	1.06	3.92E+001	12.42	4.38E+001
	19	3633-	3652	3642.88	910.97	1.00	1.88E+002	19.48	5.47E+001
M	20	3849-	3882	3856.19	964.32	1.52	2.88E+001	7.74	3.93E+001
m	21	3849-	3882	3873.18	968.56	1.53	1.03E+002	11.67	3.46E+001
	22	4469-	4488	4477.73	1119.77	1.46	1.19E+002	17.32	5.18E+001
	23	4943-	4960	4949.68	1237.81	0.47	6.15E+001	13.07	3.35E+001
	24	5828-	5854	5841.52	1460.87	1.88	9.12E+002	31.84	2.34E+001
	25	7047-	7066	7057.37	1764.96	1.98	1.19E+002	11.28	2.48E+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: N0002-OF-AH02-01-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GDRY)	Nuclide MDA (pCi/GDRY)	Activity (pCi/GDRY)
+	K-40	1460.82*	10.55	5.6770E-001	5.68E-001	9.2757E+000
	Co-60	1173.23	99.85	6.9621E-002	5.66E-002	1.6960E-002
		1332.49	99.98	5.6595E-002		-7.3625E-003
>		2505.71	0.10	0.0000E+000		0.0000E+000
	Cs-137	32.06	5.54	1.2600E+003	5.95E-002	7.2413E+002
		661.66	84.99	5.9535E-002		5.0448E-004
+	Tl-208	72.80	2.02	6.9909E+000	5.28E-002	-5.0250E+000
		74.97*	3.41	2.1632E+000		2.9990E+000
		84.90*	1.51	4.8063E+000		3.1558E-001
		277.36	6.31	7.3301E-001		-3.8751E-002
		510.77*	22.60	3.1778E-001		1.8294E-001
		583.19*	84.50	5.2804E-002		1.5678E-001
		763.13	1.81	3.3971E+000		-1.0533E-001
		860.56	12.42	5.0372E-001		1.8886E-001
+	Bi-212	39.86	1.06	6.8132E+002	4.63E-001	2.3649E+002
		727.33*	6.74	4.6280E-001		6.1908E-001
		785.37	1.11	4.8209E+000		1.3678E+000
		1620.74	1.51	3.9026E+000		1.9391E+000
		1806.00	0.09	5.1696E+001		-2.1753E+001
+	Pb-212	74.81*	10.40	7.0929E-001	8.09E-002	9.8334E-001
		77.11*	17.50	4.3595E-001		9.2523E-001
		87.30	7.81	1.0056E+000		7.8294E-001
		115.18	0.59	8.8722E+000		6.6494E+000
		238.63*	43.30	8.0864E-002		5.2218E-001
		300.09*	3.28	8.6665E-001		6.5835E-001
+	Bi-214	76.86*	0.43	1.7781E+001	1.13E-001	3.7736E+001
		89.81	0.24	3.1388E+001		1.1374E+001
		386.77	0.30	1.4978E+001		6.2756E-001
		454.77	0.29	1.6195E+001		4.9204E+000
		609.31*	45.49	1.1342E-001		6.7258E-001
		665.45	1.53	3.3657E+000		3.4389E-001
		703.11	0.48	1.1668E+001		-2.7393E+000
		719.86	0.39	1.2768E+001		-5.2985E+000
		768.36*	4.89	7.5809E-001		5.6531E-001
		786.10	0.31	1.7496E+001		1.3067E+001
		806.17	1.26	4.1268E+000		7.1621E-003
		934.06	3.10	1.9788E+000		3.0482E-001
		964.08*	0.36	9.9959E+000		6.5539E+000
		1051.96	0.31	1.9129E+001		7.4329E-002
		1120.29*	14.91	3.9981E-001		7.3071E-001

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GDRY)	Nuclide MDA (pCi/GDRY)	Activity (pCi/GDRY)
+	Bi-214	1133.66	0.25	2.4595E+001	1.13E-001	-6.8453E+000
		1155.19	1.63	4.3505E+000		2.4610E+000
		1207.68	0.45	1.4737E+001		-1.1064E+001
		1238.11*	5.79	8.6655E-001		1.0380E+000
		1280.96	1.43	4.6984E+000		-3.7941E-001
		1377.67	4.00	1.5981E+000		2.0855E-001
		1385.31	0.76	6.8620E+000		-8.8741E+000
		1401.50	1.27	4.2381E+000		-1.6903E+000
		1407.98	2.15	2.6210E+000		-1.7120E-002
		1509.23	2.11	2.7091E+000		1.2062E+000
		1538.50	0.38	1.2895E+001		-3.7740E-001
		1543.32	0.20	2.4602E+001		1.4768E+001
		1583.22	0.69	9.2871E+000		6.7350E+000
		1594.73	0.25	2.4987E+001		-3.4932E+000
		1599.31	0.23	2.2994E+001		-7.3374E+000
		1661.28	1.15	4.7256E+000		-2.0814E+000
		1683.99	0.22	2.1024E+001		-3.1780E+000
		1729.59	2.92	1.9377E+000		1.1975E+000
		1764.49*	15.40	1.7315E-001		9.2139E-001
		1847.42	2.11	2.7538E+000		-5.7772E-001
		1873.16	0.22	1.9215E+001		-1.0021E+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	5.5581E+001	1.10E-001	-1.1810E+001
		74.81*	6.44	1.1373E+000		1.5767E+000
		77.11*	10.80	7.0135E-001		1.4885E+000
		87.30	4.84	1.6110E+000		1.2543E+000
		242.00*	7.43	4.1864E-001		7.3673E-001
		258.87	0.52	7.8344E+000		-3.1045E+000
		274.80	0.47	9.7688E+000		-7.8158E+000
		295.22*	19.30	2.0425E-001		8.1498E-001
		351.93*	37.60	1.0991E-001		7.2536E-001
		462.00*	0.22	1.5468E+001		5.5528E+000
		533.66	0.19	2.5695E+001		2.0598E+001
		785.96	1.07	5.0684E+000		3.7854E+000
		839.04	0.59	1.0257E+001		2.8413E+000
	Ra-224	81.07	0.13	6.4661E+001	7.64E-001	-3.2975E+001
		83.78*	0.22	3.3445E+001		2.1960E+000
		240.99*	4.10	7.6411E-001		1.3447E+000
+	Ra-226	81.07	0.20	4.2691E+001	1.18E+000	-2.1771E+001
		83.78*	0.33	2.1968E+001		1.4424E+000
		94.90	0.15	4.4071E+001		-1.0804E+001
		186.21*	3.59	1.1778E+000		1.4074E+000
	Ac-228	99.50	1.26	4.2715E+000	3.60E-001	1.6701E+000
		129.07	2.50	2.0937E+000		3.6940E-001
		209.25	3.97	1.2099E+000		1.3793E-001
		270.24	3.55	1.2948E+000		2.6357E-001
		328.00	3.04	1.6266E+000		5.6499E-001
		338.32	11.40	5.0665E-001		5.6753E-001
		409.46	2.02	2.3303E+000		2.4262E-001

Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GDRY)	Nuclide MDA (pCi/GDRY)	Activity (pCi/GDRY)
Ac-228	463.00	4.45	1.1532E+000	3.60E-001	4.3269E-001
	755.31	1.03	5.3942E+000		6.9316E-001
	772.29	1.52	4.1979E+000		-1.0351E+000
	794.94	4.31	1.4766E+000		6.3765E-001
	835.70	1.70	3.3665E+000		-5.1339E-001
	911.20	26.20	3.5951E-001		6.4488E-001
	964.79	4.99	1.7221E+000		-2.2677E-001
	968.96	15.90	5.3522E-001		-2.1937E-002
	1588.20	3.06	2.3512E+000		1.2724E+000
	1630.62	1.52	3.2182E+000		-2.0831E+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: N0002-OF-AH02-01-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

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

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GDRY)	Activity Uncertainty
K-40	1.000	1460.82*		10.55	9.27570E+000	4.12874E-001
Tl-208	0.721	72.80	@	2.02		
		74.97*	@	3.41	2.99905E+000	3.57476E-001
		84.90*	@	1.51	3.15581E-001	1.02195E+000
		277.36		6.31		
		510.77*	@	22.60	1.82941E-001	7.03789E-002
		583.19*		84.50	1.56780E-001	1.59407E-002
		763.13	@	1.81		
		860.56		12.42		
Bi-212	0.558	39.86	@	1.06		
		727.33*		6.74	6.19076E-001	1.24192E-001
		785.37		1.11		
		1620.74		1.51		
		1806.00	@	0.09		
Pb-212	0.831	74.81*		10.40	9.83342E-001	1.20594E-001
		77.11*		17.50	9.25225E-001	8.26133E-002
		87.30		7.81		
		115.18	@	0.59		
		238.63*		43.30	5.22179E-001	3.23769E-002
		300.09*		3.28	6.58350E-001	2.01091E-001
Bi-214	0.616	76.86*	@	0.43	3.77365E+001	3.39368E+000
		89.81	@	0.24		
		386.77	@	0.30		
		454.77	@	0.29		
		609.31*		45.49	6.72585E-001	4.32025E-002
		665.45	@	1.53		
		703.11	@	0.48		
		719.86	@	0.39		
		768.36*		4.89	5.65314E-001	1.79615E-001
		786.10	@	0.31		
		806.17	@	1.26		
		934.06		3.10		
		964.08*	@	0.36	6.55389E+000	1.78103E+000
		1051.96	@	0.31		
		1120.29*		14.91	7.30710E-001	1.07664E-001
		1133.66	@	0.25		
		1155.19	@	1.63		
		1207.68	@	0.45		
		1238.11*		5.79	1.03798E+000	2.22624E-001
		1280.96	@	1.43		
		1377.67		4.00		

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GDRY)	Activity Uncertainty
Bi-214	0.616	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	9.21385E-001	9.79075E-002
		1847.42	@	2.11		
		1873.16	@	0.22		
		2118.55	@	1.14		
		2204.21	@	5.08		
Pb-214	0.852	53.28	@	1.20		
		74.81*		6.44	1.57666E+000	1.94837E-001
		77.11*		10.80	1.48849E+000	1.37459E-001
		87.30		4.84		
		242.00*		7.43	7.36730E-001	7.96404E-002
		258.87	@	0.52		
		274.80	@	0.47		
		295.22*		19.30	8.14980E-001	6.71457E-002
		351.93*		37.60	7.25359E-001	4.61404E-002
		462.00*	@	0.22	5.55285E+000	3.39748E+000
		533.66	@	0.19		
		785.96	@	1.07		
		839.04	@	0.59		
Ra-226	0.850	81.07	@	0.20		
		83.78*	@	0.33	1.44245E+000	4.67136E+000
		94.90	@	0.15		
		186.21*		3.59	1.40737E+000	2.78474E-001
Th-234	0.940	63.30*		3.75	1.35720E+000	1.15786E+000
		92.59*		4.33	1.08781E+000	2.98725E-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/GDRY)	Wt mean Activity Uncertainty
	K-40		1.000	9.275702E+000	4.128745E-001
X	Tm-170		0.981		
	Tl-208	@	0.721	1.565270E-001	1.587325E-002
X	Bi-211		0.932		
	Bi-212	@	0.558	6.190759E-001	1.241924E-001
	Pb-212	@	0.831	5.119123E-001	2.870287E-002
	Bi-214	@	0.616	7.176038E-001	3.576953E-002
	Pb-214	@	0.852	7.409342E-001	3.256147E-002
X	Ra-224		0.875		
	Ra-226	@	0.850	1.407369E+000	2.784742E-001
X	Th-228		0.477		
X	Th-231		0.626		
	Th-234	@	0.940	1.104625E+000	2.892530E-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: 9/29/2016 9:35:01 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
	11	338.11	2.1793E-002	14.97	Tol.	Ra-223
	19	910.97 Ac 228	2.5416E-002	10.70	Tol.	Ac-228
m	21	968.56	1.4280E-002	11.35	Sum	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

```
*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************
```

Filename: ERT01,C:\GENIE2K\CAMFILES\SMPN002-OF-AM10-01-01.CNF

Report Generated On	: 9/30/2016 1:16:32 PM
Sample Title	: N002-OF-AM10-01-01
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	: 5.751E+002 GDRY
Sample Taken On	: 8/16/2016 2:35:00 PM
Acquisition Started	: 9/30/2016 11:16:29 AM
Live Time	: 7200.0 seconds
Real Time	: 7202.2 seconds
Dead Time	: 0.03 %

Energy Calibration Used Done On	: 9/30/2016
Efficiency Calibration Used Done On	: 9/10/2016
Efficiency ID	:

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

Detector Name: ERT01
Sample Title: N002-OF-AM10-01-01
Peak Analysis Performed on: 9/30/2016 1:16:33 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	292-	314	299.28	74.84	0.96	2.35E+002	31.08	1.24E+003
m	2	292-	314	308.92	77.25	0.97	4.39E+002	35.26	1.02E+003
M	3	344-	365	349.32	87.35	0.49	4.62E+001	40.21	5.33E+002
m	4	344-	365	358.81	89.73	0.50	4.30E+001	37.42	4.78E+002
	5	735-	751	743.49	185.95	0.84	2.33E+002	37.83	3.83E+002
	6	831-	842	837.17	209.39	0.81	8.63E+001	26.84	2.52E+002
M	7	948-	975	954.01	238.61	1.11	1.18E+003	38.24	2.52E+002
m	8	948-	975	966.65	241.77	1.11	1.98E+002	18.13	2.28E+002
	9	1070-	1087	1080.30	270.20	1.00	1.17E+002	29.53	2.30E+002
	10	1172-	1187	1180.29	295.22	1.24	3.81E+002	30.15	1.76E+002
	11	1192-	1205	1198.81	299.85	0.51	6.03E+001	23.67	1.80E+002
	12	1343-	1358	1352.12	338.20	0.94	2.34E+002	27.49	1.74E+002
	13	1394-	1414	1406.29	351.75	1.19	6.59E+002	36.92	1.93E+002
	14	2028-	2054	2041.07	510.53	1.28	3.26E+002	32.11	1.61E+002
	15	2324-	2338	2330.33	582.89	1.18	4.12E+002	26.94	1.09E+002
	16	2427-	2445	2434.95	609.06	1.47	5.18E+002	29.96	1.12E+002
	17	2731-	2741	2735.89	684.33	0.40	2.20E+001	10.40	3.50E+001
	18	2895-	2916	2906.85	727.10	0.97	1.16E+002	20.86	8.52E+001
	19	3065-	3076	3069.15	767.70	0.73	4.70E+001	12.38	4.20E+001
	20	3170-	3181	3176.69	794.60	0.35	3.31E+001	11.76	4.19E+001
	21	3436-	3446	3440.91	860.69	0.55	3.45E+001	12.21	4.55E+001
	22	3628-	3649	3641.56	910.88	1.49	2.94E+002	23.80	7.01E+001
M	23	3848-	3881	3854.47	964.13	1.51	4.46E+001	9.38	5.33E+001
m	24	3848-	3881	3872.44	968.63	1.51	1.71E+002	14.87	5.41E+001
	25	4468-	4488	4478.14	1120.14	1.27	1.30E+002	17.99	5.29E+001
	26	4940-	4955	4949.27	1237.99	0.99	5.82E+001	15.13	5.58E+001
	27	5501-	5514	5507.03	1377.51	0.31	3.73E+001	9.98	2.27E+001
	28	5827-	5854	5840.37	1460.89	1.80	1.77E+003	44.26	4.13E+001
	29	6345-	6356	6350.40	1588.47	0.28	2.06E+001	6.83	1.04E+001
	30	7045-	7065	7056.47	1765.08	0.75	9.81E+001	11.27	7.94E+000

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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***** 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: N002-OF-AM10-01-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GDRY)	Nuclide MDA (pCi/GDRY)	Activity (pCi/GDRY)
+	K-40	1460.82*	10.55	7.6616E-001	7.66E-001	1.9337E+001
	Co-60	1173.23	99.85	8.0679E-002	7.28E-002	-7.2896E-003
		1332.49	99.98	7.2828E-002		1.7929E-002
>		2505.71	0.10	0.0000E+000		0.0000E+000
	Cs-137	32.06	5.54	6.1552E+003	7.35E-002	9.6927E+002
		661.66	84.99	7.3530E-002		8.5106E-003
+	Tl-208	72.80	2.02	1.1991E+001	6.34E-002	7.8832E-001
		74.97*	3.41	4.3257E+000		4.3458E+000
		84.90	1.51	8.9271E+000		1.3496E+000
		277.36	6.31	9.2087E-001		4.7639E-001
		510.77*	22.60	3.6133E-001		3.9274E-001
		583.19*	84.50	6.3403E-002		2.9588E-001
		763.13	1.81	4.2960E+000		-2.1333E+000
		860.56*	12.42	3.4139E-001		2.2443E-001
+	Bi-212	39.86	1.06	1.3735E+003	9.09E-001	6.4264E+002
		727.33*	6.74	9.0944E-001		1.2276E+000
		785.37	1.11	5.9276E+000		2.4795E+000
		1620.74	1.51	4.2822E+000		2.2636E+000
		1806.00	0.09	5.7920E+001		-1.4781E+001
+	Pb-212	74.81*	10.40	1.4183E+000	9.53E-002	1.4249E+000
		77.11*	17.50	6.9767E-001		1.4392E+000
		87.30*	7.81	8.5455E-001		2.5533E-001
		115.18	0.59	1.0879E+001		8.4343E-001
		238.63*	43.30	9.5320E-002		1.0014E+000
		300.09*	3.28	1.3786E+000		7.7993E-001
+	Bi-214	76.86*	0.43	2.7413E+001	1.24E-001	5.6550E+001
		89.81*	0.24	2.3618E+001		6.9290E+000
		386.77	0.30	1.8583E+001		5.5289E+000
		454.77	0.29	1.8109E+001		1.1548E+000
		609.31*	45.49	1.2437E-001		6.9128E-001
		665.45	1.53	4.0415E+000		1.3061E+000
		703.11	0.48	1.3365E+001		2.4419E+000
		719.86	0.39	1.4955E+001		5.7056E+000
		768.36*	4.89	7.3502E-001		6.8199E-001
		786.10	0.31	2.0196E+001		-3.6151E+000
		806.17	1.26	5.0978E+000		-8.2722E-001
		934.06	3.10	2.0632E+000		6.1287E-002
		964.08*	0.36	1.1800E+001		1.0383E+001
		1051.96	0.31	2.1395E+001		-6.1848E+000
		1120.29*	14.91	4.3036E-001		8.3100E-001

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GDRY)	Nuclide MDA (pCi/GDRY)	Activity (pCi/GDRY)
+	Bi-214	1133.66	0.25	3.3186E+001	1.24E-001	9.9373E+000
		1155.19	1.63	5.2809E+000		1.0668E+000
		1207.68	0.45	2.0274E+001		-5.9591E+000
		1238.11*	5.79	1.1296E+000		1.0361E+000
		1280.96	1.43	5.5514E+000		-2.0190E-001
		1377.67*	4.00	1.1004E+000		1.0416E+000
		1385.31	0.76	8.4256E+000		-4.2117E-001
		1401.50	1.27	4.8814E+000		-5.2930E+000
		1407.98	2.15	3.1638E+000		1.5046E+000
		1509.23	2.11	2.7651E+000		-1.2800E+000
		1538.50	0.38	1.4613E+001		-9.4906E-001
		1543.32	0.20	2.7820E+001		1.8765E-001
		1583.22	0.69	9.6961E+000		-1.0104E+000
		1594.73	0.25	2.7656E+001		3.3351E-001
		1599.31	0.23	2.4677E+001		-1.9589E+001
		1661.28	1.15	4.7501E+000		2.7696E+000
		1683.99	0.22	2.2856E+001		1.7952E+000
		1729.59	2.92	2.1182E+000		4.4277E-001
		1764.49*	15.40	2.5493E-001		7.6971E-001
		1847.42	2.11	2.4483E+000		-2.7989E-001
		1873.16	0.22	2.1862E+001		7.5194E-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	8.1790E+001	1.50E-001	1.4951E+001
		74.81*	6.44	2.1908E+000		2.2010E+000
		77.11*	10.80	1.0813E+000		2.2306E+000
		87.30*	4.84	1.3189E+000		3.9409E-001
		242.00*	7.43	4.9387E-001		9.5751E-001
		258.87	0.52	1.0414E+001		7.1315E-001
		274.80	0.47	1.1987E+001		4.7268E+000
		295.22*	19.30	2.2817E-001		7.9349E-001
		351.93*	37.60	1.5014E-001		7.6784E-001
		462.00	0.22	2.5795E+001		5.8458E+000
		533.66	0.19	2.8585E+001		-3.1247E+000
		785.96	1.07	5.8463E+000		-1.0465E+000
		839.04	0.59	1.2022E+001		5.9637E-001
+	Ra-224	81.07	0.13	1.1190E+002	9.36E-001	-8.0882E+001
		83.78	0.22	6.2475E+001		7.7849E+000
		240.99*	4.10	9.3570E-001		1.8141E+000
+	Ra-226	81.07	0.20	7.1175E+001	1.48E+000	-5.1444E+001
		83.78	0.33	3.9534E+001		4.9263E+000
		94.90	0.15	6.3667E+001		4.0322E+001
		186.21*	3.59	1.4802E+000		1.6071E+000
+	Ac-228	99.50	1.26	6.5116E+000	2.60E-001	3.4686E-001
		129.07	2.50	2.4083E+000		1.2345E+000
		209.25*	3.97	1.0521E+000		7.5773E-001
		270.24*	3.55	1.4709E+000		1.3146E+000
		328.00	3.04	2.0049E+000		4.9556E-001
		338.32*	11.40	4.3286E-001		9.3152E-001
		409.46	2.02	2.9286E+000		-1.5756E+000

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GDRY)	Nuclide MDA (pCi/GDRY)	Activity (pCi/GDRY)
+	Ac-228	463.00	4.45	1.3578E+000	2.60E-001	3.3223E-001
		755.31	1.03	6.5292E+000		-3.0121E+000
		772.29	1.52	4.8072E+000		-3.3089E-001
		794.94*	4.31	8.9016E-001		5.8374E-001
		835.70	1.70	4.4587E+000		1.5082E+000
		911.20*	26.20	2.6019E-001		9.2960E-001
		964.79*	4.99	8.9741E-001		7.8964E-001
		968.96*	15.90	2.8469E-001		9.5526E-001
		1588.20*	3.06	1.1024E+000		8.5842E-001
		1630.62	1.52	3.5405E+000		-1.2154E-003

+ = 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: N002-OF-AM10-01-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

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

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GDRY)	Activity Uncertainty
K-40	0.999	1460.82*		10.55	1.93366E+001	7.09528E-001
Eu-152m	0.998	89.85*		69.90	2.43383E-002	2.12069E-002
Tl-208	0.834	72.80	@	2.02		
		74.97*	@	3.41	4.34580E+000	5.89032E-001
		84.90	@	1.51		
		277.36		6.31		
		510.77*	@	22.60	3.92737E-001	8.31547E-002
		583.19*		84.50	2.95882E-001	2.13052E-002
		763.13	@	1.81		
		860.56*		12.42	2.24427E-001	7.95898E-002
Bi-211	0.921	351.03*		13.00	2.22942E+000	1.45806E-001
Bi-212	0.575	39.86	@	1.06		
		727.33*		6.74	1.22763E+000	2.23905E-001
		785.37		1.11		
		1620.74		1.51		
		1806.00	@	0.09		
Pb-212	0.985	74.81*		10.40	1.42492E+000	1.97460E-001
		77.11*		17.50	1.43921E+000	1.30010E-001
		87.30*		7.81	2.55334E-001	2.22548E-001
		115.18	@	0.59		
		238.63*		43.30	1.00139E+000	4.57915E-002
		300.09*		3.28	7.79928E-001	3.06840E-001
Bi-214	0.674	76.86*	@	0.43	5.65500E+001	5.14427E+000
		89.81*	@	0.24	6.92899E+000	6.04260E+000
		386.77	@	0.30		
		454.77	@	0.29		
		609.31*		45.49	6.91278E-001	4.36311E-002
		665.45	@	1.53		
		703.11	@	0.48		
		719.86	@	0.39		
		768.36*		4.89	6.81989E-001	1.80310E-001
		786.10	@	0.31		
		806.17	@	1.26		
		934.06		3.10		
		964.08*	@	0.36	1.03828E+001	2.22037E+000
		1051.96	@	0.31		
		1120.29*		14.91	8.31003E-001	1.16578E-001
		1133.66	@	0.25		
		1155.19	@	1.63		
		1207.68	@	0.45		
		1238.11*		5.79	1.03605E+000	2.70880E-001

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GDRY)	Activity Uncertainty
Bi-214	0.674	1280.96	@	1.43		
		1377.67*		4.00	1.04160E+000	2.80240E-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	7.69712E-001	9.79820E-002
		1847.42	@	2.11		
		1873.16	@	0.22		
		2118.55	@	1.14		
		2204.21	@	5.08		
Pb-214	0.940	53.28	@	1.20		
		74.81*		6.44	2.20099E+000	3.06836E-001
		77.11*		10.80	2.23058E+000	2.08244E-001
		87.30*		4.84	3.94089E-001	3.43567E-001
		242.00*		7.43	9.57508E-001	9.35452E-002
		258.87	@	0.52		
		274.80	@	0.47		
		295.22*		19.30	7.93487E-001	6.75347E-002
		351.93*		37.60	7.67844E-001	4.96244E-002
		462.00	@	0.22		
		533.66	@	0.19		
		785.96	@	1.07		
		839.04	@	0.59		
Ra-224	0.801	81.07	@	0.13		
		83.78	@	0.22		
		240.99*		4.10	1.81412E+000	1.76578E-001
Ra-226	0.771	81.07	@	0.20		
		83.78	@	0.33		
		94.90	@	0.15		
		186.21*		3.59	1.60708E+000	3.39302E-001
Ac-228	0.618	99.50	@	1.26		
		129.07	@	2.50		
		209.25*		3.97	7.57732E-001	2.38102E-001
		270.24*		3.55	1.31465E+000	3.37177E-001
		328.00		3.04		
		338.32*		11.40	9.31522E-001	1.17232E-001
		409.46	@	2.02		
		463.00		4.45		
		755.31	@	1.03		
		772.29	@	1.52		
		794.94*		4.31	5.83740E-001	2.08901E-001

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GDRY)	Activity Uncertainty
Ac-228	0.618	835.70	@	1.70		
		911.20*		26.20	9.29601E-001	8.44540E-002
		964.79*		4.99	7.89638E-001	1.68990E-001
		968.96*		15.90	9.55259E-001	9.06365E-002
		1588.20*		3.06	8.58421E-001	2.87527E-001
		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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***** INTERFERENCE CORRECTED REPORT *****
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	Nuclide Name		Nuclide Id Confidence	Wt mean Activity (pCi/GDRY)	Wt mean Activity Uncertainty
	K-40		0.999	1.933661E+001	7.095285E-001
X	Cd-109		0.929		
	Eu-152m		0.998	2.178605E-002	2.120625E-002
	Tl-208	@	0.834	2.908513E-001	2.044122E-002
	Bi-211		0.921	1.378382E-001	2.291023E-001
	Bi-212	@	0.575	1.227631E+000	2.239053E-001
	Pb-212	@	0.985	9.472959E-001	4.079530E-002
	Bi-214	@	0.674	7.266196E-001	3.618125E-002
	Pb-214	@	0.940	7.203704E-001	6.188940E-002
	Ra-224	@	0.801	4.492888E-001	2.108073E-001
	Ra-226	@	0.771	1.607081E+000	3.393016E-001
	Ac-228	@	0.618	9.044721E-001	4.604205E-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

********** UNIDENTIFIED PEAKS **********

Peak Locate Performed on: 9/30/2016 1:16:33 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
17	684.33	3.0592E-003	47.23	Sum	

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

Errors quoted at 1.000 sigma