```
*************************************************************************
*****        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\SMP-NFB-A01-S003-1824-01.CNF

Report Generated On	: 5/26/2017 3:45:31 PM
Sample Title	: NFB-A01-S003-1824-01
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	: 9.729E+002 GWET
Sample Taken On	: 5/10/2017 12:01:00 PM
Acquisition Started	: 5/26/2017 1:41:10 PM
Live Time	: 7200.0 seconds
Real Time	: 7458.8 seconds
Dead Time	: 3.47 %

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

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

Detector Name: ERT01
Sample Title: NFB-A01-S003-1824-01
Peak Analysis Performed on: 5/26/2017 3:45:32 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	216-	238	231.28	57.69	0.94	5.68E+003	810.11	1.68E+005
M	2	249-	265	253.78	63.31	0.92	3.25E+003	265.95	8.37E+004
m	3	249-	265	261.29	65.19	0.92	1.03E+003	231.30	8.57E+004
M	4	276-	315	292.35	72.95	1.03	8.35E+003	259.14	1.07E+005
m	5	276-	315	300.13	74.89	1.03	6.40E+004	367.22	1.16E+005
m	6	276-	315	309.15	77.15	1.03	1.01E+005	431.87	1.18E+005
M	7	322-	387	325.89	81.33	1.24	1.40E+003	273.67	1.02E+005
m	8	322-	387	338.28	84.43	1.25	1.89E+004	315.30	1.37E+005
m	9	322-	387	349.61	87.26	1.25	5.42E+004	389.89	1.37E+005
m	10	322-	387	360.54	89.99	1.26	5.25E+004	382.38	1.46E+005
m	11	322-	387	373.83	93.31	1.26	7.09E+004	415.84	1.37E+005
	12	388-	407	398.83	99.56	1.24	1.23E+004	788.87	1.74E+005
M	13	407-	444	422.36	105.44	1.47	2.73E+004	395.36	1.70E+005
m	14	407-	444	435.88	108.82	1.47	1.06E+004	334.99	1.63E+005
	15	456-	468	461.54	115.23	1.07	6.76E+003	564.17	1.18E+005
M	16	506-	533	517.00	129.09	1.03	2.88E+004	367.39	1.40E+005
m	17	506-	533	526.99	131.59	1.03	2.03E+003	273.24	1.39E+005
M	18	558-	591	562.17	140.38	1.08	1.53E+003	279.76	1.06E+005
m	19	558-	591	576.07	143.86	1.08	2.94E+003	297.91	1.35E+005
m	20	558-	591	583.59	145.74	1.09	2.13E+003	287.12	1.35E+005
	21	606-	623	616.77	154.03	1.06	1.16E+004	754.40	1.71E+005
M	22	649-	672	654.27	163.40	1.36	1.34E+003	303.03	1.25E+005
m	23	649-	672	665.60	166.23	1.37	2.15E+003	336.08	1.42E+005
	24	733-	754	744.60	185.98	1.20	3.04E+004	866.88	1.92E+005
	25	762-	774	765.90	191.30	0.66	1.36E+003	540.83	1.11E+005
	26	789-	808	798.38	199.42	0.97	3.71E+003	768.15	1.67E+005
	27	830-	850	837.65	209.23	1.08	6.23E+004	821.38	1.68E+005
	28	856-	876	864.65	215.98	1.07	4.49E+003	765.95	1.60E+005
	29	925-	938	933.75	233.25	0.65	1.09E+003	530.79	1.02E+005
M	30	948-	976	955.02	238.56	1.11	7.30E+005	901.86	9.25E+004
m	31	948-	976	965.20	241.11	1.11	8.20E+004	359.69	7.48E+004
M	32	1005-	1045	1010.88	252.53	1.21	2.96E+003	236.74	6.83E+004
m	33	1005-	1045	1025.39	256.15	1.22	1.36E+003	207.34	7.13E+004
m	34	1005-	1045	1035.26	258.62	1.22	1.94E+003	216.14	7.46E+004
M	35	1072-	1123	1081.34	270.13	1.19	5.22E+004	323.09	6.62E+004
m	36	1072-	1123	1098.81	274.50	1.20	1.06E+003	190.43	6.52E+004
m	37	1072-	1123	1109.91	277.27	1.20	3.06E+004	274.82	6.89E+004
	38	1147-	1164	1152.96	288.03	1.05	4.29E+003	492.59	7.31E+004
	39	1171-	1193	1181.21	295.09	1.13	6.68E+004	660.49	9.47E+004
	40	1193-	1209	1200.89	300.01	1.16	4.73E+004	498.54	6.42E+004
	41	1254-	1263	1258.40	314.38	0.64	1.94E+002	281.79	3.50E+004
	42	1281-	1294	1286.68	321.45	0.96	1.91E+003	369.63	4.88E+004

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	43	1304-	1337	1312.29	327.85	1.18	4.05E+004	289.21	5.13E+004
m	44	1304-	1337	1329.86	332.24	1.18	4.95E+003	185.23	5.03E+004
M	45	1346-	1372	1353.57	338.17	1.17	1.56E+005	445.84	4.80E+004
m	46	1346-	1372	1364.21	340.83	1.17	4.63E+003	176.40	4.57E+004
	47	1400-	1422	1407.98	351.77	1.19	1.28E+005	625.23	6.58E+004
M	48	1541-	1565	1547.39	386.61	1.13	8.68E+002	154.21	3.67E+004
m	49	1541-	1565	1555.84	388.72	1.13	1.22E+003	163.83	3.67E+004
M	50	1603-	1645	1607.69	401.68	1.21	7.98E+002	151.71	3.09E+004
m	51	1603-	1645	1620.35	404.84	1.21	7.03E+002	146.52	3.75E+004
m	52	1603-	1645	1638.07	409.27	1.21	2.29E+004	232.97	3.79E+004
	53	1753-	1771	1761.61	440.15	1.37	1.51E+003	360.09	3.79E+004
	54	1805-	1827	1811.50	452.61	1.28	4.59E+003	421.08	4.44E+004
	55	1840-	1862	1852.19	462.79	1.29	4.80E+004	464.26	4.32E+004
	56	1938-	1960	1947.94	486.71	1.15	1.77E+003	393.81	3.95E+004
	57	2011-	2023	2015.66	503.64	0.89	1.24E+003	246.43	2.26E+004
	58	2027-	2064	2043.10	510.50	1.37	9.64E+004	688.98	6.53E+004
	59	2086-	2099	2094.10	523.24	0.63	6.42E+002	252.92	2.30E+004
M	60	2179-	2205	2186.24	546.27	1.28	1.68E+003	139.18	2.34E+004
m	61	2179-	2205	2198.97	549.45	1.28	1.45E+003	135.44	2.33E+004
	62	2243-	2259	2250.25	562.27	1.31	8.05E+003	299.72	2.60E+004
	63	2273-	2297	2286.29	571.27	2.37	3.05E+003	397.04	3.74E+004
	64	2324-	2355	2332.84	582.91	1.34	2.81E+005	730.09	4.62E+004
	65	2425-	2450	2437.39	609.04	1.38	1.05E+005	497.05	3.35E+004
M	66	2459-	2486	2464.78	615.88	1.09	6.48E+002	115.15	1.64E+004
m	67	2459-	2486	2481.67	620.10	1.10	5.01E+002	110.17	1.52E+004
	68	2555-	2567	2560.48	639.80	0.67	4.35E+002	205.05	1.58E+004
	69	2601-	2611	2606.08	651.20	0.59	3.78E+002	180.31	1.35E+004
	70	2653-	2673	2662.14	665.21	1.52	3.23E+003	310.50	2.56E+004
	71	2740-	2766	2752.84	687.88	1.29	1.03E+003	375.82	3.20E+004
M	72	2802-	2848	2808.97	701.90	1.83	1.81E+003	144.77	2.24E+004
m	73	2802-	2848	2830.56	707.30	1.83	1.68E+003	142.50	2.73E+004
M	74	2870-	2925	2879.52	719.53	1.46	4.63E+002	108.19	2.08E+004
m	75	2870-	2925	2889.06	721.92	1.46	4.03E+002	106.28	1.96E+004
m	76	2870-	2925	2909.34	726.99	1.46	6.41E+004	279.61	1.98E+004
	77	2966-	2978	2970.62	742.30	0.44	3.81E+002	185.88	1.30E+004
	78	3011-	3035	3021.43	755.00	1.52	7.97E+003	327.97	2.41E+004
M	79	3045-	3102	3053.63	763.05	1.49	5.13E+003	124.95	1.58E+004
m	80	3045-	3102	3073.72	768.07	1.50	9.93E+003	145.26	1.61E+004
m	81	3045-	3102	3089.44	772.00	1.50	1.21E+004	153.54	1.56E+004
M	82	3120-	3154	3128.81	781.84	1.47	4.29E+003	114.26	1.34E+004
m	83	3120-	3154	3142.65	785.30	1.48	1.08E+004	147.82	1.39E+004
	84	3169-	3194	3180.00	794.63	1.49	3.36E+004	333.05	1.81E+004
	85	3216-	3241	3224.96	805.86	1.27	2.14E+003	271.09	1.67E+004
M	86	3262-	3373	3268.29	816.70	1.55	2.82E+002	86.16	1.00E+004
m	87	3262-	3373	3284.42	820.73	1.55	2.85E+002	79.71	1.18E+004
m	88	3262-	3373	3300.77	824.81	1.55	3.80E+002	63.74	1.22E+004
m	89	3262-	3373	3322.40	830.22	1.55	5.62E+003	139.70	1.13E+004
m	90	3262-	3373	3343.11	835.39	1.56	1.06E+004	180.87	1.16E+004
m	91	3262-	3373	3361.48	839.99	1.56	7.53E+003	124.18	1.06E+004
	92	3431-	3455	3442.62	860.26	1.52	3.47E+004	298.63	1.32E+004

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
93	3489-	3506	3497.12	873.88	1.87	2.58E+002	175.24	9.34E+003
94	3561-	3584	3574.20	893.15	1.52	2.77E+003	219.56	1.14E+004
95	3603-	3628	3617.14	903.88	1.55	5.09E+003	240.33	1.24E+004
96	3632-	3658	3645.33	910.93	1.56	2.05E+005	511.17	1.29E+004
97	3705-	3717	3710.41	927.19	0.56	1.31E+002	117.13	5.16E+003
98	3727-	3752	3736.88	933.81	1.58	5.24E+003	220.45	1.02E+004
M 99	3767-	3897	3776.92	943.81	1.57	7.02E+002	73.54	7.45E+003
m100	3767-	3897	3792.48	947.70	1.58	8.14E+002	74.09	7.04E+003
m101	3767-	3897	3809.21	951.88	1.58	1.47E+003	94.88	7.38E+003
m102	3767-	3897	3834.88	958.30	1.58	1.96E+003	76.84	7.32E+003
m103	3767-	3897	3859.77	964.52	1.59	3.39E+004	192.71	7.16E+003
m104	3767-	3897	3876.61	968.73	1.59	1.18E+005	360.92	6.69E+003
M105	3897-	3963	3905.51	975.95	1.93	5.54E+002	71.90	6.54E+003
m106	3897-	3963	3931.21	982.37	1.93	5.75E+002	71.00	7.43E+003
m107	3897-	3963	3953.76	988.01	1.93	1.24E+003	83.67	6.78E+003
M108	3994-	4029	4005.02	1000.82	1.70	1.92E+003	84.56	6.70E+003
m109	3994-	4029	4018.39	1004.16	1.70	4.20E+002	62.98	6.10E+003
M110	4125-	4168	4133.84	1033.01	1.53	1.43E+003	77.85	5.54E+003
m111	4125-	4168	4161.01	1039.80	1.53	3.43E+002	61.10	5.35E+003
112	4197-	4224	4209.18	1051.84	1.53	7.31E+002	188.18	7.70E+003
M113	4242-	4290	4261.70	1064.97	1.62	1.77E+003	79.86	5.85E+003
m114	4242-	4290	4281.04	1069.80	1.62	4.64E+002	62.24	5.59E+003
115	4305-	4330	4316.01	1078.54	1.83	3.69E+003	184.27	7.09E+003
116	4369-	4395	4376.93	1093.77	1.85	3.43E+003	190.05	7.41E+003
117	4426-	4456	4443.75	1110.47	1.71	3.03E+003	205.79	8.06E+003
118	4458-	4500	4482.45	1120.14	1.66	2.56E+004	310.91	1.11E+004
119	4530-	4552	4536.41	1133.62	1.05	4.82E+002	151.73	5.80E+003
120	4605-	4634	4622.10	1155.04	2.33	3.76E+003	198.27	7.48E+003
121	4653-	4666	4659.38	1164.36	0.85	2.11E+002	101.96	3.69E+003
122	4722-	4738	4730.15	1182.04	1.89	2.72E+002	113.77	4.05E+003
123	4824-	4842	4832.33	1207.58	1.67	4.90E+002	129.37	4.80E+003
124	4939-	4967	4954.50	1238.11	1.67	8.65E+003	205.98	7.30E+003
125	4973-	5008	4990.14	1247.02	1.90	3.58E+003	234.64	9.34E+003
M126	5115-	5163	5126.13	1281.00	1.79	2.08E+003	81.35	5.44E+003
m127	5115-	5163	5150.54	1287.11	1.79	6.80E+002	62.92	5.54E+003
128	5378-	5399	5391.33	1347.28	0.90	3.49E+002	139.89	5.12E+003
M129	5490-	5525	5499.92	1374.42	1.79	6.97E+002	62.02	5.01E+003
m130	5490-	5525	5513.56	1377.83	1.79	6.43E+003	104.27	5.28E+003
131	5535-	5563	5544.18	1385.48	1.71	1.28E+003	174.69	6.29E+003
M132	5598-	5653	5608.81	1401.64	1.84	1.87E+003	72.10	4.77E+003
m133	5598-	5653	5634.86	1408.15	1.84	3.53E+003	85.80	4.80E+003
134	5655-	5676	5666.22	1415.98	1.08	2.99E+002	128.56	4.32E+003
135	5718-	5739	5729.91	1431.90	0.50	3.47E+002	130.98	4.48E+003
136	5830-	5858	5839.70	1459.34	1.89	4.98E+003	172.71	5.29E+003
M137	5972-	6025	5987.10	1496.18	1.94	5.39E+003	93.43	4.05E+003
m138	5972-	6025	6009.82	1501.86	1.94	2.85E+003	75.15	3.98E+003
M139	6027-	6069	6040.64	1509.56	1.84	2.81E+003	76.04	4.03E+003
m140	6027-	6069	6054.91	1513.12	1.84	2.03E+003	68.50	3.93E+003
M141	6145-	6185	6157.48	1538.76	2.02	7.66E+002	61.85	4.11E+003
m142	6145-	6185	6177.05	1543.65	2.02	5.41E+002	56.11	3.47E+003

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
143	6216-	6245	6231.93	1557.37	1.49	7.93E+002	154.00	4.82E+003
M144	6288-	6344	6296.85	1573.59	1.78	2.56E+002	45.98	2.89E+003
m145	6288-	6344	6325.95	1580.86	1.78	2.96E+003	78.59	3.73E+003
M146	6344-	6408	6356.81	1588.58	1.88	1.75E+004	145.89	4.58E+003
m147	6344-	6408	6374.33	1592.96	1.88	9.70E+003	112.81	3.97E+003
m148	6344-	6408	6400.97	1599.61	1.89	2.28E+002	50.20	3.25E+003
M149	6474-	6539	6487.21	1621.17	1.91	8.50E+003	106.86	3.69E+003
m150	6474-	6539	6504.02	1625.37	1.91	1.34E+003	58.69	3.59E+003
m151	6474-	6539	6526.92	1631.09	1.91	9.06E+003	108.98	3.47E+003
152	6548-	6570	6557.75	1638.79	1.88	2.30E+003	123.70	3.35E+003
M153	6634-	6686	6650.16	1661.89	1.83	1.23E+003	59.78	3.18E+003
m154	6634-	6686	6671.19	1667.15	1.83	1.05E+003	56.29	3.01E+003
M155	6707-	6757	6720.90	1679.57	3.15	5.42E+002	63.06	4.50E+003
m156	6707-	6757	6746.85	1686.05	3.15	6.95E+002	64.71	4.18E+003
157	6807-	6827	6815.53	1703.22	1.01	3.04E+002	101.36	2.75E+003
158	6909-	6940	6923.78	1730.27	1.87	4.23E+003	159.97	4.27E+003
M159	7030-	7078	7038.91	1759.05	1.97	1.28E+002	45.74	2.79E+003
m160	7030-	7078	7063.63	1765.23	1.97	2.07E+004	154.14	3.29E+003
161	7220-	7241	7230.61	1806.96	1.61	5.24E+002	106.76	2.90E+003
162	7289-	7309	7297.81	1823.75	1.51	1.73E+002	100.35	2.73E+003
M163	7353-	7412	7359.17	1839.09	1.93	2.04E+002	19.08	2.63E+003
m164	7353-	7412	7375.52	1843.17	1.93	6.48E+001	18.38	3.60E+003
m165	7353-	7412	7396.04	1848.30	1.94	2.65E+003	36.61	3.37E+003
166	7451-	7472	7461.40	1864.63	0.36	1.89E+002	103.79	2.82E+003
167	7493-	7507	7500.28	1874.35	1.29	1.65E+002	78.97	2.11E+003
168	7541-	7564	7554.80	1887.98	0.56	3.53E+002	116.74	3.31E+003
169	7807-	7832	7817.04	1953.52	0.76	3.61E+002	125.42	3.61E+003
170	8072-	8086	8079.30	2019.06	0.31	1.24E+002	75.87	1.95E+003

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: NFB-A01-S003-1824-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
	K-40	1460.82	10.55	5.2328E+000	5.23E+000	3.1897E+001
	Co-60	1173.23	99.85	4.4215E-001	4.42E-001	3.6167E-001
		1332.49	99.98	4.7648E-001		-7.1967E-002
>		2505.71	0.10	0.0000E+000		0.0000E+000
	Cs-137	32.06	5.54	4.0382E+004	6.71E-001	4.7654E+003
		661.66	84.99	6.7126E-001		1.5401E-001
+	Tl-208	72.80*	2.02	4.0327E+001	9.70E-001	1.5643E+002
		74.97*	3.41	2.2965E+001		6.5455E+002
		84.90*	1.51	4.1736E+001		3.2404E+002
		277.36*	6.31	6.4351E+000		1.1388E+002
		510.77*	22.60	4.1113E+000		1.3815E+002
		583.19*	84.50	9.7045E-001		1.1642E+002
		763.13*	1.81	1.9180E+001		1.1852E+002
		860.56*	12.42	4.0051E+000		1.2781E+002
+	Bi-212	39.86	1.06	7.5616E+003	5.56E+000	-1.5403E+003
		727.33*	6.74	5.5625E+000		3.8454E+002
		785.37*	1.11	2.9985E+001		4.1661E+002
		1620.74*	1.51	1.9482E+001		4.1188E+002
		1806.00*	0.09	4.1298E+002		4.4342E+002
+	Pb-212	74.81*	10.40	7.5299E+000	1.00E+000	2.1462E+002
		77.11*	17.50	4.1448E+000		1.8526E+002
		87.30*	7.81	7.5800E+000		1.6887E+002
		115.18*	0.59	7.9505E+001		2.0699E+002
		238.63*	43.30	1.0026E+000		3.6552E+002
		300.09*	3.28	1.5597E+001		3.5349E+002
+	Bi-214	76.86*	0.43	1.6758E+002	1.37E+000	7.4901E+003
		89.81*	0.24	2.3368E+002		4.8880E+003
		386.77*	0.30	1.1740E+002		8.0685E+001
		454.77	0.29	1.8874E+002		4.4357E+002
		609.31*	45.49	1.3696E+000		8.1481E+001
		665.45*	1.53	3.4833E+001		7.9103E+001
		703.11	0.48	1.2404E+002		-3.8774E+000
		719.86*	0.39	9.5704E+001		4.6498E+001
		768.36*	4.89	7.0835E+000		8.3979E+001
		786.10*	0.31	1.0567E+002		1.4681E+003
		806.17*	1.26	4.2272E+001		7.2567E+001
		934.06*	3.10	1.5024E+001		8.1021E+001
		964.08*	0.36	7.5854E+001		4.5933E+003
		1051.96*	0.31	1.4562E+002		1.2263E+002
		1120.29*	14.91	4.6285E+000		9.5363E+001

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Bi-214	1133.66*	0.25	1.5479E+002	1.37E+000	1.0642E+002
		1155.19*	1.63	3.0624E+001		1.3104E+002
		1207.68*	0.45	7.7874E+001		6.4096E+001
		1238.11*	5.79	8.9069E+000		8.9858E+001
		1280.96*	1.43	2.1060E+001		8.9845E+001
		1377.67*	4.00	7.8308E+000		1.0475E+002
		1385.31*	0.76	6.8972E+001		1.1025E+002
		1401.50*	1.27	2.3735E+001		9.7074E+001
		1407.98*	2.15	1.4105E+001		1.0850E+002
		1509.23*	2.11	1.3781E+001		9.2338E+001
		1538.50*	0.38	7.8990E+001		1.4262E+002
		1543.32*	0.20	1.3689E+002		1.8968E+002
		1583.22	0.69	1.1873E+002		2.0669E+003
		1594.73	0.25	3.5655E+002		5.9809E+003
		1599.31*	0.23	1.1737E+002		7.1008E+001
		1661.28*	1.15	2.3677E+001		7.8151E+001
		1683.99	0.22	2.1191E+002		-2.2616E+001
		1729.59*	2.92	1.7295E+001		1.0734E+002
		1764.49*	15.40	1.8399E+000		1.0002E+002
		1847.42*	2.11	1.3725E+001		9.4568E+001
		1873.16	0.22	2.1235E+002		1.6264E+002
>		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	3.9622E+002	1.66E+000	6.7172E+001
		74.81*	6.44	1.1968E+001		3.4111E+002
		77.11*	10.80	6.6099E+000		2.9544E+002
		87.30*	4.84	1.2038E+001		2.6819E+002
		242.00*	7.43	5.2014E+000		2.3681E+002
		258.87*	0.52	7.6472E+001		8.2295E+001
		274.80*	0.47	8.1579E+001		5.1473E+001
		295.22*	19.30	3.5015E+000		8.2675E+001
		351.93*	37.60	1.6635E+000		8.9199E+001
		462.00*	0.22	2.6100E+002		6.5721E+003
		533.66	0.19	2.9045E+002		1.4271E+002
		785.96*	1.07	3.0614E+001		4.2535E+002
		839.04*	0.59	5.1215E+001		5.6719E+002
+	Ra-224	81.07*	0.13	4.5156E+002	9.58E+000	3.0034E+002
		83.78*	0.22	2.9042E+002		2.2548E+003
		240.99*	4.10	9.5773E+000		4.3603E+002
+	Ra-226	81.07*	0.20	2.9553E+002	2.07E+001	1.9656E+002
		83.78*	0.33	1.8910E+002		1.4682E+003
		94.90	0.15	4.9901E+002		7.1710E+003
		186.21*	3.59	2.0724E+001		1.5914E+002
+	Ac-228	99.50*	1.26	5.8170E+001	1.71E+000	1.9694E+002
		129.07*	2.50	1.7322E+001		2.0291E+002
		209.25*	3.97	1.8564E+001		3.1781E+002
		270.24*	3.55	1.1054E+001		3.4029E+002
		328.00*	3.04	1.2593E+001		3.4168E+002
		338.32*	11.40	3.3029E+000		3.5757E+002
		409.46*	2.02	1.8299E+001		3.2687E+002

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GWET)	Nuclide MDA (pCi/GWET)	Activity (pCi/GWET)
+	Ac-228	463.00*	4.45	1.3170E+001	1.71E+000	3.3163E+002
		755.31*	1.03	5.9268E+001		3.2125E+002
		772.29*	1.52	2.2845E+001		3.3462E+002
		794.94*	4.31	1.2957E+001		3.3556E+002
		835.70*	1.70	1.8671E+001		2.7959E+002
		911.20*	26.20	2.0171E+000		3.7421E+002
		964.79*	4.99	5.6066E+000		3.3950E+002
		968.96*	15.90	1.7075E+000		3.7230E+002
		1588.20*	3.06	1.0599E+001		4.1351E+002
		1630.62*	1.52	1.8834E+001		4.3733E+002
+	Th-228	84.37*	1.26	5.0016E+001	5.00E+001	3.8833E+002
		131.61*	0.13	3.3009E+002		2.7341E+002
		166.41*	0.10	4.3852E+002		3.7985E+002
		215.98*	0.25	2.8755E+002		3.6352E+002
+	Pa-234m	258.23*	0.07	5.4296E+002	3.24E+001	5.8430E+002
		742.81*	0.09	3.7047E+002		1.6362E+002
		766.36	0.32	2.0453E+002		-1.8013E+003
		786.27*	0.05	6.1113E+002		8.4909E+003
		1001.03*	0.85	3.2386E+001		1.1472E+002
		1737.77	0.02	2.2078E+003		5.3686E+002
+	Th-234	63.30*	3.75	3.2969E+001	1.21E+001	5.5676E+001
		92.59*	4.33	1.2112E+001		3.5137E+002
		112.81	0.22	2.6780E+002		-1.2773E+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

****
***** 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: NFB-A01-S003-1824-01
Nuclide Library Used: C:\GENIE2K\CAMFILES\ERT_LIBRARY_LMDA.NLB

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

Nuclide Name	Id Confidence	Energy (keV)		Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Mo-99	0.650	40.58	@	1.02		
		140.51*		89.60	1.71255E+001	3.19123E+000
		181.07		6.01		
		366.42		1.19		
		739.50		12.12		
Ce-139	0.978	165.86*		79.89	5.25770E-001	8.34012E-002
Ce-141	0.978	40.82	@	2.67		
		145.44*		48.29	1.08080E+000	1.48419E-001
Eu-152m	0.997	89.85*		69.90	1.71007E+001	4.89120E-001
Eu-155	0.928	45.30		1.31		
		60.01		1.22		
		86.55*		30.70	4.25520E+001	1.26153E+000
		105.31*		21.10	2.44855E+001	9.67230E-001
Tl-208	0.988	72.80*	@	2.02	1.56428E+002	6.80222E+000
		74.97*	@	3.41	6.54547E+002	2.01000E+001
		84.90*	@	1.51	3.24038E+002	1.05221E+001
		277.36*		6.31	1.13878E+002	4.13950E+000
		510.77*	@	22.60	1.38151E+002	4.52137E+000
		583.19*		84.50	1.16420E+002	3.63951E+000
		763.13*	@	1.81	1.18517E+002	4.10719E+000
		860.56*		12.42	1.27814E+002	3.30775E+000
TL-208e	0.972	1592.53*		99.16	7.09404E+000	4.43073E-001
Bi-211	0.917	351.03*		13.00	2.58347E+002	9.40719E+000
Bi-212	0.960	39.86	@	1.06		
		727.33*		6.74	3.84544E+002	1.20944E+001
		785.37*		1.11	4.16606E+002	1.21498E+001
		1620.74*		1.51	4.11882E+002	1.45520E+001
		1806.00*	@	0.09	4.43418E+002	1.34672E+002
Pb-212	0.999	74.81*		10.40	2.14616E+002	9.04219E+000
		77.11*		17.50	1.85258E+002	7.67981E+000
		87.30*		7.81	1.68869E+002	7.18060E+000
		115.18*	@	0.59	2.06994E+002	1.81163E+001
		238.63*		43.30	3.65521E+002	1.20334E+001
		300.09*		3.28	3.53490E+002	1.24983E+001
Bi-214	0.952	76.86*	@	0.43	7.49006E+003	3.20713E+002
		89.81*	@	0.24	4.88799E+003	2.24259E+002
		386.77*	@	0.30	8.06847E+001	1.46501E+001
		454.77	@	0.29		
		609.31*		45.49	8.14807E+001	2.43627E+000
		665.45*	@	1.53	7.91027E+001	7.91674E+000
		703.11	@	0.48		

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Bi-214	0.952	719.86* @	0.39	4.64977E+001	1.10061E+001
		768.36*	4.89	8.39791E+001	2.41312E+000
		786.10* @	0.31	1.46814E+003	2.40272E+002
		806.17* @	1.26	7.25667E+001	9.37205E+000
		934.06*	3.10	8.10211E+001	3.88723E+000
		964.08* @	0.36	4.59328E+003	1.86495E+002
		1051.96* @	0.31	1.22630E+002	3.19667E+001
		1120.29*	14.91	9.53626E+001	2.59031E+000
		1133.66* @	0.25	1.06418E+002	3.37788E+001
		1155.19* @	1.63	1.31040E+002	7.63653E+000
		1207.68* @	0.45	6.40962E+001	1.71471E+001
		1238.11*	5.79	8.98579E+001	3.34650E+000
		1280.96* @	1.43	8.98449E+001	4.36595E+000
		1377.67*	4.00	1.04745E+002	3.51069E+000
		1385.31* @	0.76	1.10248E+002	1.55766E+001
		1401.50* @	1.27	9.70743E+001	4.72542E+000
		1407.98* @	2.15	1.08501E+002	4.55842E+000
		1509.23* @	2.11	9.23384E+001	3.82840E+000
		1538.50* @	0.38	1.42624E+002	1.31858E+001
		1543.32* @	0.20	1.89675E+002	5.15640E+001
		1583.22 @	0.69		
		1594.73 @	0.25		
		1599.31* @	0.23	7.10082E+001	2.42947E+001
		1661.28* @	1.15	7.81506E+001	4.80791E+000
		1683.99 @	0.22		
		1729.59* @	2.92	1.07343E+002	5.41871E+000
		1764.49*	15.40	1.00022E+002	3.59520E+000
		1847.42* @	2.11	9.45678E+001	4.16344E+000
		1873.16 @	0.22		
		2118.55 @	1.14		
		2204.21 @	5.08		
Pb-214	0.974	53.28 @	1.20		
		74.81*	6.44	3.41106E+002	1.52788E+001
		77.11*	10.80	2.95441E+002	1.40883E+001
		87.30*	4.84	2.68185E+002	1.24830E+001
		242.00*	7.43	2.36807E+002	8.33444E+000
		258.87* @	0.52	8.22947E+001	9.71138E+000
		274.80* @	0.47	5.14733E+001	9.45715E+000
		295.22*	19.30	8.26748E+001	2.93105E+000
		351.93*	37.60	8.91986E+001	3.12256E+000
		462.00* @	0.22	6.57212E+003	3.49315E+002
		533.66 @	0.19		
		785.96* @	1.07	4.25348E+002	3.39196E+001
		839.04* @	0.59	5.67192E+002	1.88338E+001
Rn-220	0.988	549.73*	0.11	4.30505E+002	7.69132E+001
Ra-223	0.590	81.07*	15.30	2.53440E+000	5.00511E-001
		83.78*	25.40	1.89854E+001	7.20922E-001
		94.90	11.50		
		122.32 @	1.21		
		144.24*	3.27	1.55594E+001	1.68677E+000

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (pCi/GWET)	Activity Uncertainty
Ra-223	0.590	154.21*	5.70	3.58740E+001	2.73640E+000
		158.63 @	0.69		
		179.54 @	0.15		
		269.46*	13.90	8.56532E+001	3.73106E+000
		288.18* @	0.16	6.33441E+002	7.80962E+001
		323.87	3.99		
		328.38* @	0.21	4.89808E+003	2.49331E+002
		338.32*	2.84	1.41458E+003	5.82718E+001
		342.87 @	0.22		
		371.68 @	0.49		
		445.03 @	1.29		
Ra-224	0.994	81.07* @	0.13	3.00341E+002	6.04111E+001
		83.78* @	0.22	2.25483E+003	1.10775E+002
		240.99*	4.10	4.36033E+002	1.49034E+001
Ra-226	0.933	81.07* @	0.20	1.96562E+002	3.94418E+001
		83.78* @	0.33	1.46818E+003	7.18193E+001
		94.90 @	0.15		
		186.21*	3.59	1.59137E+002	7.05746E+000
Ac-228	0.991	99.50* @	1.26	1.96939E+002	1.48670E+001
		129.07* @	2.50	2.02908E+002	7.87432E+000
		209.25*	3.97	3.17805E+002	1.48719E+001
		270.24*	3.55	3.40288E+002	1.46871E+001
		328.00*	3.04	3.41676E+002	1.68614E+001
		338.32*	11.40	3.57567E+002	1.72248E+001
		409.46* @	2.02	3.26868E+002	1.49251E+001
		463.00*	4.45	3.31630E+002	2.11707E+001
		755.31* @	1.03	3.21254E+002	1.98508E+001
		772.29* @	1.52	3.34621E+002	1.61073E+001
		794.94*	4.31	3.35560E+002	1.39474E+001
		835.70* @	1.70	2.79592E+002	1.40593E+001
		911.20*	26.20	3.74211E+002	1.42871E+001
		964.79*	4.99	3.39504E+002	1.40652E+001
		968.96*	15.90	3.72299E+002	1.45267E+001
		1588.20*	3.06	4.13515E+002	1.97054E+001
		1630.62* @	1.52	4.37331E+002	2.14745E+001
Th-228	0.999	84.37*	1.26	3.88331E+002	1.40357E+001
		131.61* @	0.13	2.73407E+002	3.75520E+001
		166.41* @	0.10	3.79855E+002	6.05055E+001
		215.98*	0.25	3.63519E+002	6.31889E+001
Pa-234m	0.585	258.23* @	0.07	5.84304E+002	6.81473E+001
		742.81* @	0.09	1.63621E+002	8.01392E+001
		766.36	0.32		
		786.27* @	0.05	8.49092E+003	2.60316E+002
		1001.03*	0.85	1.14719E+002	5.81636E+000
		1737.77 @	0.02		
Th-234	0.901	63.30*	3.75	5.56765E+001	5.03754E+000
		92.59*	4.33	3.51365E+002	1.79402E+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
X	Mn-54		0.952		
	Mo-99	@	0.650	1.712549E+001	3.191232E+000
X	Cd-109		0.909		
	Ce-139		0.978	3.165549E-001	8.610932E-002
	Ce-141	@	0.978	1.080800E+000	1.484194E-001
	Eu-152m		0.997	1.678601E+001	4.665905E-001
	Eu-155		0.928	1.820740E+001	6.147867E-001
X	Tm-170		0.995		
	Tl-208	@	0.988	1.200624E+002	1.985640E+000
	TL-208e		0.972	7.094039E+000	4.430730E-001
	Bi-211		0.917	7.024842E+001	1.163360E+001
	Bi-212	@	0.960	3.730740E+002	6.446778E+000
	Pb-212	@	0.999	1.341298E+002	3.435664E+000
	Bi-214	@	0.952	8.993572E+001	1.080448E+000
	Pb-214	@	0.974	6.494412E+001	2.698880E+000
	Rn-220		0.988	4.305049E+002	7.691319E+001
	Ra-223	@	0.590	4.807157E-001	4.769933E-001
	Ra-224	@	0.994	2.987240E+002	1.471990E+001
	Ra-226	@	0.933	1.531619E+002	6.524246E+000
	Ac-228	@	0.991	3.511710E+002	3.113557E+000
	Th-228	@	0.999	1.511526E+002	1.547970E+001
X	Th-231		0.994		
	Pa-234m	@	0.585	1.141044E+002	5.713417E+000
	Th-234	@	0.901	7.728672E+001	4.849966E+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: 5/26/2017 3:45:31 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
1	57.69	7.8953E-001	14.25	Tol.	Np-239
m 3	65.19	1.4241E-001	22.56	Tol.	Se-75 Ta-182
m 14	108.82	1.4688E+000	3.17	Tol.	Cs-136 Yb-169
M 22	163.40	1.8542E-001	22.70	Sum	
25	191.30	1.8937E-001	39.67		
26	199.42	5.1482E-001	20.72	Sum	
29	233.25	1.5190E-001	48.53	Sum	
M 32	252.53	4.1072E-001	8.01	Sum	
m 33	256.15	1.8849E-001	15.28	Sum	
41	314.38	2.6883E-002	145.59	Sum	
42	321.45	2.6533E-001	19.35	Sum	
m 44	332.24	6.8794E-001	3.74	Sum	
m 46	340.83	6.4347E-001	3.81	Sum	
m 49	388.72	1.6976E-001	13.40	Sum	
M 50	401.68	1.1088E-001	19.00	Sum	
m 51	404.84	9.7571E-002	20.86	Sum	
53	440.15	2.1037E-001	23.77	Sum	
54	452.61	6.3708E-001	9.18	Sum	
56	486.71	2.4610E-001	22.23	D-Esc.	
57	503.64	1.7219E-001	19.88	Sum	
59	523.24	8.9166E-002	39.40	Sum	
M 60	546.27	2.3359E-001	8.28	Sum	
62	562.27	1.1176E+000	3.72	Sum	
63	571.27	4.2359E-001	13.02	D-Esc.	
M 66	615.88	9.0009E-002	17.77	Sum	
m 67	620.10	6.9628E-002	21.98	Tol.	Ag-110m Bi-206
68	639.80	6.0461E-002	47.10	D-Esc.	
69	651.20	5.2466E-002	47.73	Sum	
71	687.88	1.4350E-001	36.37	Sum	
M 72	701.90	2.5169E-001	7.99	Sum	
m 73	707.30	2.3317E-001	8.49	D-Esc.	
m 75	721.92	5.5948E-002	26.38	Sum	
M 82	781.84	5.9625E-001	2.66		
M 86	816.70	3.9218E-002	30.51	Sum	
m 87	820.73	3.9606E-002	27.95	Sum	
m 88	824.81	5.2817E-002	16.76	Sum	
m 89	830.22	7.7989E-001	2.49	Sum	
93	873.88	3.5853E-002	67.89	S-Esc.	
94	893.15	3.8473E-001	7.93	Sum	
95	903.88	7.0686E-001	4.72	Sum	
97	927.19	1.8195E-002	89.41	Sum	

Peak No.	Energy (keV)	Peak Size in Counts per Second	Peak CPS % Uncertainty	Peak Type	Tol. Nuclide
M 99	943.81	9.7507E-002	10.47	Sum	
m100	947.70	1.1305E-001	9.10	Sum	
m101	951.88	2.0358E-001	6.47	Sum	
m102	958.30	2.7256E-001	3.92	Sum	
M105	975.95	7.6881E-002	12.99	Sum	
m106	982.37	7.9792E-002	12.36		
m107	988.01	1.7166E-001	6.77	Sum	
m109	1004.16	5.8381E-002	14.98	Sum	
M110	1033.01	1.9818E-001	5.46	S-Esc.	
m111	1039.80	4.7610E-002	17.82	Sum	
M113	1064.97	2.4647E-001	4.50	Sum	
m114	1069.80	6.4498E-002	13.40	Sum	
115	1078.54	5.1295E-001	4.99	S-Esc.	
116	1093.77	4.7575E-001	5.55	Sum	
117	1110.47	4.2107E-001	6.79	S-Esc.	
121	1164.36	2.9236E-002	48.43	Sum	
122	1182.04	3.7807E-002	41.80	Sum	
125	1247.02	4.9750E-001	6.55	Sum	
m127	1287.11	9.4461E-002	9.25	Sum	
128	1347.28	4.8422E-002	40.12	Sum	
M129	1374.42	9.6794E-002	8.90	Sum	
134	1415.98	4.1589E-002	42.93	Sum	
135	1431.90	4.8152E-002	37.78	Sum	
136	1459.34	6.9199E-001	3.47	Sum	
M137	1496.18	7.4929E-001	1.73	Sum	
m138	1501.86	3.9645E-001	2.63	Sum	
m140	1513.12	2.8255E-001	3.37	Sum	
143	1557.37	1.1010E-001	19.43	Sum	
M144	1573.59	3.5504E-002	17.99	Sum	
m145	1580.86	4.1155E-001	2.65	Sum	
m150	1625.37	1.8638E-001	4.37	Sum	
152	1638.79	3.1950E-001	5.38	Sum	
m154	1667.15	1.4595E-001	5.36	Sum	
M155	1679.57	7.5306E-002	11.63	Sum	
m156	1686.05	9.6540E-002	9.31	Sum	
157	1703.22	4.2225E-002	33.34	Sum	
M159	1759.05	1.7753E-002	35.79	Sum	
162	1823.75	2.4040E-002	57.97	Sum	
M163	1839.09	2.8386E-002	9.34	Sum	
m164	1843.17	8.9970E-003	28.37	Sum	
166	1864.63	2.6281E-002	54.85	Sum	
167	1874.35	2.2960E-002	47.77	Sum	
168	1887.98	4.9016E-002	33.08	Sum	
169	1953.52	5.0200E-002	34.70	Sum	
170	2019.06	1.7168E-002	61.37	Sum	

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

Errors quoted at 1.000 sigma