

### Health Physics Sample Records

Sample ID: 142506

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 14060614BD 06 NORTH LAYDOWN # 11

#### Common

Resp Org: P4000 - PROJECT MANAGEMEN

Cross Ref Sample ID:

Priority: N

Contact: COOPER, TERRY L

Survey No:

Reference ID:

Accounting Subcode:

Unknown Mat: NO

Hazardous Mat: NO

Comments: COUNT TO MDA

Reviewed: DYNES, WILLIAM J

Date: 06/09/14 08:44

Comments: COUNT TO MDA

#### Origin

Mat. Size/Volume: 1979 GRAMS

Docmnt/MO/Act #:

Proposed Ship Date: 00/00/00 00:00

Description: NORTH LAYDOWN #11

#### Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 06/06/14 10:25

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 1979 GRAMS

Instructions: COUNT TO MDA

Comments: COUNT TO MDA

#### RLSSS

Exempt: No

Evaluated: No

Chem Notification: No

State Permit: No

Offsite Analysis: No

Effluent Permit: No

Container Surveyed: No

Cleared For Release: Yes

Container Evaluated: Yes

Form 212 Ready:

#### Location

Unit: NON-UNIT RE Area: MS

Elev: 100 Room:

Depth: (in.) Equip ID:

Stored By: ,

Date: 00/00/00 00:00

Sample Loc:

Other: COUNT TO MDA

Material Loc:

## Health Physics Sample Records

Sample ID: **142506**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 14060614BD 06 NORTH LAYDOWN # 11

### Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
C_1L_marinelli_sand_	30419	1979	GR		.000		NEEBE, DAVID J	06/09/14 20:18		

  

Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments	Mod Id	Mod Date
0	K-40	9.533E-6	1.112E-6	┌	83.626%	40			
0	TL-208	3.351E-7	8.66E-8	┌	2.940%	208			
0	PB-212	4.512E-7	1.015E-7	┌	3.958%	212			
0	PB-214	5.505E-7	1.871E-7	┌	4.829%	214			
0	AC-228	5.297E-7	1.31E-7	┌	4.647%	228			
0	BE-7	7.4794E-7		┐	0.000%	7			
0	MN-54	9.9773E-8		┐	0.000%	54			
0	MN-56	9.5349E-8		┐	0.000%	56			
0	CO-57	8.4073E-8		┐	0.000%	57			
0	CO-58	7.4561E-8		┐	0.000%	58			
0	CO-60	3.6173E-8		┐	0.000%	60			
0	SB-124	1.8626E-8		┐	0.000%	124			
0	SB-125	2.0504E-7		┐	0.000%	125			
0	CS-134	8.5147E-8		┐	0.000%	134			
0	CS-137	8.0139E-8		┐	0.000%	137			

### Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/11/14 08:03

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

Health Physics Sample Records

Sample ID: 142506

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 14060614BD 06 NORTH LAYDOWN # 11

Review/Approve

HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/11/14 08:03

Comments: the 345 keV peak is not associated with any plant-produced radionuclide

Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

Final Approval

Approved: COOPER, TERRY L

Date: 06/11/14 08:03

Comments:

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*****
*          SONGS                      HEALTH PHYSICS REPORT          9-JUN-2014 20:11  *
*-----*
*          >>>> SAMPLE PARAMETERS <<<<<          *
*
* Title      : 14060614BD 06 NORTH LAYDOWN # 11          *
*
* ID         : 30419                      Acquisition date: 9-JUN-2014 20:08:35. *
* Start Time: 9-JUN-2014 20:08:00.          Counting System   : U2GSP          *
* Stop Time  : 9-JUN-2014 20:08:00.          IHPS Sample Number: 142506         *
* Quantity   : 1.97900E+03 GR                Analysis Library  : HP_NATURAL         *
* Geometry   : C_1L_marinelli_sand_1         Operator: DAVID NEEBE          *
*-----*
*          >>>> C #41-TP11750A PARAMETERS <<<<<          *
*
* Elapsed Live Time : 0 00:03:00.42          Calibration       : 9-JUN-2014 19:38: *
* Elapsed Real Time : 0 00:03:00.47          Energy Offset    : -1.08890E-01         *
* Deadtime          : 0.0%                   Energy Slope     : 4.99807E-01         *
* Activity Mult Factor: 1.00000E+00          Energy Tolerance: 1.00000          *
* Half Life Ratio   : 8.00000                Sensitivity      : 5.00000          *
*
*****

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Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
1	238.75	53	22	1.20	477.87	472	11	22.5	4.24E+00	PB-212
1	241.82	17	4	1.25	484.02	482	5	28.0	1.86E-01	PB-214
1	295.64	25	9	1.98	591.69	585	13	34.0	1.15E+00	PB-214
1	337.98	28	2	1.73	676.39	672	8	20.6	7.27E-01	AC-228
1	345.65	15	2	2.28	691.74	688	8	28.2	7.51E-01	
1	351.86	48	0	1.46	704.16	698	11	15.0	7.95E-01	PB-214
1	582.87	28	7	3.29	1166.26	1163	12	25.8	1.80E+00	TL-208
1	911.15	15	0	1.84	1822.85	1818	8	24.7	2.99E-01	AC-228
1	1460.83	75	0	1.83	2922.06	2916	12	11.7	5.58E-01	K-40

Summary of Nuclide Activity  
Sample ID : 30419

Page : 2  
Acquisition date : 9-JUN-2014 20:08:35

Total number of lines in spectrum 9  
Number of unidentified lines 1  
Number of lines tentatively identified by NID 8 88.89%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected uCi/GR	Decay Corr uCi/GR	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	9.533E-06	9.533E-06	1.112E-06	11.67	A
TL-208	3.05M	1.58	2.121E-07	3.351E-07	0.866E-07	25.85	A
PB-212	10.64H	1.00	4.501E-07	4.512E-07	1.015E-07	22.49	A
PB-214	26.80M	1.06	5.215E-07	5.505E-07	1.871E-07	33.99	A
AC-228	6.13H	1.00	5.276E-07	5.297E-07	1.310E-07	24.73	A
			-----	-----			
		Total Activity :	1.124E-05	1.140E-05			

Grand Total Activity : 1.124E-05 1.140E-05

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : 30419

Page : 3  
Acquisition date : 9-JUN-2014 20:08:35

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	345.65	15	2	2.28	691.74	688	8	8.33E-02	28.2	1.70E+00	

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30419

Page : 4  
Acquisition date : 9-JUN-2014 20:08:35

No interference correction performed

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected Decay Corr		1-Sigma %Error
					uCi/GR	uCi/GR	
K-40	1460.83	75	10.67*	5.560E-01	9.533E-06	9.533E-06	11.67
TL-208	72.80	-----	2.14	1.486E+00	-----	Line Not Found	-----
	74.97	-----	3.60	1.577E+00	-----	Line Not Found	-----
	84.79	-----	1.27	1.917E+00	-----	Line Not Found	-----
	252.45	-----	0.80	2.004E+00	-----	Line Not Found	-----
	277.28	-----	6.80	1.917E+00	-----	Line Not Found	-----
	510.61	-----	21.60	1.298E+00	-----	Line Not Found	-----
	583.02	28	86.00*	1.158E+00	2.121E-07	3.351E-07	25.85
	763.06	-----	1.64	8.934E-01	-----	Line Not Found	-----
PB-212	860.30	-----	12.00	7.922E-01	-----	Line Not Found	-----
	74.81	-----	10.50	1.570E+00	-----	Line Not Found	-----
	77.11	-----	17.70	1.661E+00	-----	Line Not Found	-----
	87.19	-----	6.27	1.983E+00	-----	Line Not Found	-----
	90.13	-----	1.86	2.055E+00	-----	Line Not Found	-----
	115.12	-----	0.59	2.376E+00	-----	Line Not Found	-----
	238.58	53	43.60*	2.055E+00	4.501E-07	4.512E-07	22.49
	300.03	-----	3.34	1.843E+00	-----	Line Not Found	-----
PB-214	53.17	-----	1.10	5.203E-01	-----	Line Not Found	-----
	74.81	-----	6.52	1.570E+00	-----	Line Not Found	-----
	77.11	-----	11.00	1.661E+00	-----	Line Not Found	-----
	87.19	-----	3.88	1.983E+00	-----	Line Not Found	-----
	90.13	-----	1.15	2.055E+00	-----	Line Not Found	-----
	241.92	17	7.46	2.043E+00	8.274E-07	8.734E-07	27.95
	258.94	-----	0.55	1.981E+00	-----	Line Not Found	-----
	295.09	25	19.20*	1.857E+00	5.215E-07	5.505E-07	33.99
AC-228	351.87	48	37.10	1.686E+00	5.800E-07	6.123E-07	15.04
	785.83	-----	1.09	8.674E-01	-----	Line Not Found	-----
	839.00	-----	0.59	8.122E-01	-----	Line Not Found	-----
	89.96	-----	3.40	2.051E+00	-----	Line Not Found	-----
	93.35	-----	5.60	2.124E+00	-----	Line Not Found	-----
	99.55	-----	1.30	2.229E+00	-----	Line Not Found	-----
	105.36	-----	2.00	2.301E+00	-----	Line Not Found	-----
	108.99	-----	0.67	2.335E+00	-----	Line Not Found	-----
	129.03	-----	2.90	2.414E+00	-----	Line Not Found	-----
	153.89	-----	0.84	2.377E+00	-----	Line Not Found	-----
	209.39	-----	4.10	2.168E+00	-----	Line Not Found	-----
	216.24	-----	0.80	2.141E+00	-----	Line Not Found	-----
	270.26	-----	3.80	1.941E+00	-----	Line Not Found	-----
	328.07	-----	3.50	1.756E+00	-----	Line Not Found	-----
	338.42	28	12.40	1.726E+00	1.002E-06	1.006E-06	20.58
	340.94	-----	0.52	1.718E+00	-----	Line Not Found	-----
409.62	-----	2.20	1.531E+00	-----	Line Not Found	-----	
463.10	-----	4.60	1.401E+00	-----	Line Not Found	-----	
562.65	-----	1.01	1.195E+00	-----	Line Not Found	-----	
581.52	-----	3.00	1.160E+00	-----	Line Not Found	-----	
726.63	-----	0.87	9.382E-01	-----	Line Not Found	-----	
755.28	-----	1.32	9.027E-01	-----	Line Not Found	-----	
772.28	-----	1.09	8.827E-01	-----	Line Not Found	-----	
782.12	-----	0.59	8.716E-01	-----	Line Not Found	-----	



Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected Decay Corr		1-Sigma %Error
					uCi/GR	uCi/GR	
	794.79	-----	4.60	8.576E-01	-----	Line Not Found	-----
	830.59	-----	0.63	8.205E-01	-----	Line Not Found	-----
	835.60	-----	1.71	8.155E-01	-----	Line Not Found	-----
	840.44	-----	0.94	8.108E-01	-----	Line Not Found	-----
	904.29	-----	0.89	7.542E-01	-----	Line Not Found	-----
	911.16	15	29.00*	7.487E-01	5.276E-07	5.297E-07	24.73
	964.64	-----	5.80	7.091E-01	-----	Line Not Found	-----
	968.97	-----	17.40	7.061E-01	-----	Line Not Found	-----
	1246.60	-----	0.57	5.825E-01	-----	Line Not Found	-----
	1459.19	-----	1.06	5.560E-01	-----	Line Not Found	-----
	1496.00	-----	1.05	5.563E-01	-----	Line Not Found	-----
	1501.44	-----	0.58	5.565E-01	-----	Line Not Found	-----
	1580.30	-----	0.71	5.624E-01	-----	Line Not Found	-----
	1588.23	-----	3.60	5.634E-01	-----	Line Not Found	-----
	1630.47	-----	1.95	5.696E-01	-----	Line Not Found	-----
	1638.10	-----	0.54	5.709E-01	-----	Line Not Found	-----

Flag: "\*" = Keyline

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	6.	477.61	7.4794E-07
MN-54	3.	834.83	9.9773E-08
MN-56	2.	846.81	9.5349E-08
CO-57	19.	122.06	8.4073E-08
CO-58	1.	810.79	7.4561E-08
CO-60	0.	1332.50	3.6173E-08
SB-124	0.	602.73	1.8626E-08
SB-125	4.	427.88	2.0504E-07
CS-134	4.	604.71	8.5147E-08
CS-137	2.	661.66	8.0139E-08