

Health Physics Sample Records

Sample ID: 142491

Type: RLSSS      Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140605BD02 SOUTH LAY DOWN # 3

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: 06/06/14 07:22

Comments:

Origin

Mat. Size/Volume: 1918 GRAMS

Docmnt/MO/Act #:

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

Description: SOUTH LAY DOWN # 3

Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 06/05/14 13:20

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 1918 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

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Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140605BD02 SOUTH LAY DOWN # 3

### Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
C_1L_marinelli_sand_	30383	1918	GR		.000		LYLE, OWEN M	06/06/14 14:03		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments	Mod Id	Mod Date	
0 K-40	NT	0.00001389	1.37E-6	<input type="checkbox"/>	74.332%	40				
0 TL-208	NT	1.898E-7	6.91E-8	<input type="checkbox"/>	1.016%	208				
0 PB-212	NT	5.796E-7	9.27E-8	<input type="checkbox"/>	3.102%	212				
0 BI-214	NT	4.617E-7	8.9E-8	<input type="checkbox"/>	2.471%	214				
0 PB-214	NT	5.666E-7	1.719E-7	<input type="checkbox"/>	3.032%	214				
0 RA-226	NT	2.824E-6	1.024E-6	<input type="checkbox"/>	15.113%	226				
0 U-235	NT	1.748E-7	6.34E-8	<input type="checkbox"/>	0.935%	235				
0 BE-7	AP	4.5886E-7		<input checked="" type="checkbox"/>	0.000%	7				
0 MN-54	AP	1.4529E-7		<input checked="" type="checkbox"/>	0.000%	54				
0 MN-56	AP	9.4588E-8		<input checked="" type="checkbox"/>	0.000%	56				
0 CO-57	AP	7.4995E-8		<input checked="" type="checkbox"/>	0.000%	57				
0 CO-58	AP	1.0045E-7		<input checked="" type="checkbox"/>	0.000%	58				
0 CO-60	AP	1.1751E-7		<input checked="" type="checkbox"/>	0.000%	60				
0 SB-124	AP	6.138E-8		<input checked="" type="checkbox"/>	0.000%	124				
0 SB-125	FP	2.1472E-7		<input checked="" type="checkbox"/>	0.000%	125				
0 CS-134	FP	9.5631E-8		<input checked="" type="checkbox"/>	0.000%	134				
0 CS-137	FP	8.9946E-8		<input checked="" type="checkbox"/>	0.000%	137				

### Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/11/14 06:26

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

## Health Physics Sample Records

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Sample ID: 142491

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140605BD02 SOUTH LAY DOWN # 3

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### Review/Approve

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#### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/11/14 06:38

Comments: U-235 is likely a mis-ID off the Ra-226 energy peak; the 338 keV peak is Ac-228

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#### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

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#### Final Approval

Approved: COOPER, TERRY L

Date: 06/11/14 06:38

Comments:

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*****
*          SONGS                HEALTH PHYSICS REPORT                6-JUN-2014 13:58 *
*-----*
*                >>>> SAMPLE PARAMETERS <<<<<                *
*
* Title          : 140605BD02 SOUTH LAY DOWN # 3                *
*
* ID             : 30383                Acquisition date: 6-JUN-2014 13:55:49. *
* Start Time:    : 6-JUN-2014 13:55:00.                *
* Stop Time:     : 6-JUN-2014 13:55:00.                Counting System : U2GSP *
* Quantity      : 1.91800E+03 GR                IHPS Sample Number: 142491 *
* Geometry      : C_1L_marinelli_sand_1        Analysis Library : HP_NATURAL *
*               :                               Operator: OWEN LYLE *
*-----*
*                >>>> C #41-TP11750A PARAMETERS <<<<<                *
*
* Elapsed Live Time : 0 00:03:00.42 Calibration : 5-JUN-2014 19:42: *
* Elapsed Real Time : 0 00:03:00.46 Energy Offset : -1.03481E-01 *
* Deadtime          : 0.0% Energy Slope : 4.99812E-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	186.10	27	20	1.43	372.54	368	9	36.3	1.28E+00	U-235 RA-226
1	238.63	66	18	1.15	477.62	472	9	16.0	1.99E+00	PB-212
1	241.80	24	10	1.33	483.97	482	5	28.5	1.84E+00	PB-214
1	295.11	24	8	1.92	590.61	585	11	30.3	3.34E-01	PB-214
1	338.28	29	11	2.13	676.97	671	11	28.7	4.26E-01	
1	352.00	38	6	1.23	704.43	700	8	19.5	6.69E-01	PB-214
1	583.28	15	6	2.18	1167.08	1163	8	36.4	7.11E-01	TL-208
1	609.49	28	0	1.94	1219.50	1215	8	19.3	1.50E+00	BI-214
1	1460.84	106	0	2.12	2922.19	2914	14	9.8	9.19E-01	K-40

Summary of Nuclide Activity  
Sample ID : 30383

Page : 2  
Acquisition date : 6-JUN-2014 13:55:49

Total number of lines in spectrum 9  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 9 100.00%

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	1.389E-05	1.389E-05	0.137E-05	9.85	A
TL-208	3.05M	1.66	1.141E-07	1.898E-07	0.691E-07	36.39	A
PB-212	10.64H	1.00	5.781E-07	5.796E-07	0.927E-07	15.99	A
BI-214	19.90M	1.08	4.259E-07	4.617E-07	0.890E-07	19.27	A
PB-214	26.80M	1.06	5.336E-07	5.666E-07	1.719E-07	30.33	A
RA-226	1600.00Y	1.00	2.824E-06	2.824E-06	1.024E-06	36.26	A
U-235	7.04E+08Y	1.00	1.748E-07	1.748E-07	0.634E-07	36.26	A
Total Activity :			1.854E-05	1.869E-05			

Grand Total Activity : 1.854E-05 1.869E-05

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

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

Unidentified Energy Lines  
Sample ID : 30383

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Acquisition date : 6-JUN-2014 13:55:49

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	338.28	29	11	2.13	676.97	671	11	1.59E-01	28.7	1.73E+00	T

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30383

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Acquisition date : 6-JUN-2014 13:55:49

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	106	10.67*	5.560E-01	1.389E-05	1.389E-05	9.85
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	15	86.00*	1.157E+00	1.141E-07	1.898E-07	36.39
	763.06	-----	1.64	8.934E-01	-----	Line Not Found	-----
	860.30	-----	12.00	7.922E-01	-----	Line Not Found	-----
	PB-212	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		66	43.60*	2.055E+00	5.781E-07	5.796E-07	15.99
300.03		-----	3.34	1.843E+00	-----	Line Not Found	-----
BI-214		76.86	-----	0.58	1.651E+00	-----	Line Not Found
	79.29	-----	0.97	1.741E+00	-----	Line Not Found	-----
	609.31	28	46.10*	1.112E+00	4.259E-07	4.617E-07	19.27
	665.44	-----	1.56	1.023E+00	-----	Line Not Found	-----
	768.35	-----	4.88	8.873E-01	-----	Line Not Found	-----
	806.16	-----	1.23	8.454E-01	-----	Line Not Found	-----
	934.04	-----	3.16	7.310E-01	-----	Line Not Found	-----
	1120.27	-----	15.00	6.242E-01	-----	Line Not Found	-----
	1155.18	-----	1.69	6.105E-01	-----	Line Not Found	-----
	1238.11	-----	5.92	5.846E-01	-----	Line Not Found	-----
	1280.95	-----	1.47	5.747E-01	-----	Line Not Found	-----
	1377.66	-----	4.02	5.602E-01	-----	Line Not Found	-----
	1385.30	-----	0.78	5.595E-01	-----	Line Not Found	-----
	1401.48	-----	1.39	5.583E-01	-----	Line Not Found	-----
	1407.97	-----	2.48	5.578E-01	-----	Line Not Found	-----
	1509.22	-----	2.19	5.568E-01	-----	Line Not Found	-----
	1583.22	-----	0.72	5.628E-01	-----	Line Not Found	-----
	1661.26	-----	1.15	5.753E-01	-----	Line Not Found	-----
PB-214	1729.58	-----	3.05	5.918E-01	-----	Line Not Found	-----
	1764.49	-----	15.90	6.023E-01	-----	Line Not Found	-----
	1847.41	-----	2.12	6.331E-01	-----	Line Not Found	-----
	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	24	7.46	2.043E+00	1.248E-06	1.325E-06	28.46
	258.94	-----	0.55	1.981E+00	-----	Line Not Found	-----
	295.09	24	19.20*	1.858E+00	5.336E-07	5.666E-07	30.33
	351.87	38	37.10	1.686E+00	4.758E-07	5.052E-07	19.47
785.83	-----	1.09	8.674E-01	-----	Line Not Found	-----	
839.00	-----	0.59	8.122E-01	-----	Line Not Found	-----	



Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected Decay Corr		1-Sigma
					uCi/GR	uCi/GR	
RA-226	81.07	-----	0.18	1.802E+00	-----	Line Not Found	-----
	186.11	27	3.28*	2.261E+00	2.824E-06	2.824E-06	36.26
U-235	89.96	-----	3.36	2.051E+00	-----	Line Not Found	-----
	93.35	-----	5.50	2.124E+00	-----	Line Not Found	-----
	105.36	-----	1.98	2.301E+00	-----	Line Not Found	-----
	109.18	-----	1.50	2.336E+00	-----	Line Not Found	-----
	143.79	-----	10.50	2.402E+00	-----	Line Not Found	-----
	163.38	-----	4.70	2.347E+00	-----	Line Not Found	-----
	185.74	27	53.00*	2.261E+00	1.748E-07	1.748E-07	36.26
	194.96	-----	0.59	2.226E+00	-----	Line Not Found	-----
	202.13	-----	1.00	2.197E+00	-----	Line Not Found	-----
	205.33	-----	4.70	2.184E+00	-----	Line Not Found	-----

Flag: "\*" = Keyline

Minimum Detectable Activity Report  
Sample ID : 30383

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Acquisition date : 6-JUN-2014 13:55:49

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	1.	477.61	4.5886E-07
MN-54	7.	834.83	1.4529E-07
MN-56	2.	846.81	9.4588E-08
CO-57	13.	122.06	7.4995E-08
CO-58	3.	810.79	1.0045E-07
CO-60	2.	1332.50	1.1751E-07
SB-124	2.	602.73	6.1380E-08
SB-125	4.	427.88	2.1472E-07
CS-134	5.	604.71	9.5631E-08
CS-137	3.	661.66	8.9946E-08