

### Health Physics Sample Records

Sample ID: 142493

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140605BD04 SOUTH LAY DOWN # 8

#### 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 07:36

Comments:

#### Origin

Mat. Size/Volume: 1850 GRAMS

Docmnt/MO/Act #:

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

Description: SOUTH LAY DOWN # 8

#### Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 06/05/14 09:47

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 1850 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: **142493**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140605BD04 SOUTH LAY DOWN # 8

**Analysis**

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
A_1L_marinelli_sand_	30385	1850	GR		.000		NEEBE, DAVID J	06/06/14 20:43		

Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments	Mod Id	Mod Date
0	K-40	NT	9.897E-6	1.212E-6	<input type="checkbox"/>	73.052%	40		
0	TL-208	NT	2.436E-7	5.95E-8	<input type="checkbox"/>	1.798%	208		
0	PB-212	NT	5.793E-7	8.69E-8	<input type="checkbox"/>	4.276%	212		
0	BI-214	NT	6.47E-7	1.01E-7	<input type="checkbox"/>	4.776%	214		
0	PB-214	NT	6.559E-7	1.783E-7	<input type="checkbox"/>	4.841%	214		
0	RA-224	NT	1.525E-6	6.38E-7	<input type="checkbox"/>	11.256%	224		
0	BE-7	AP	7.0085E-7		<input checked="" type="checkbox"/>	0.000%	7		
0	MN-54	AP	1.326E-7		<input checked="" type="checkbox"/>	0.000%	54		
0	MN-56	AP	7.7105E-8		<input checked="" type="checkbox"/>	0.000%	56		
0	CO-57	AP	6.767E-8		<input checked="" type="checkbox"/>	0.000%	57		
0	CO-58	AP	9.1689E-8		<input checked="" type="checkbox"/>	0.000%	58		
0	CO-60	AP	1.364E-7		<input checked="" type="checkbox"/>	0.000%	60		
0	SB-124	AP	7.0967E-8		<input checked="" type="checkbox"/>	0.000%	124		
0	SB-125	FP	2.7702E-7		<input checked="" type="checkbox"/>	0.000%	125		
0	CS-134	FP	1.0713E-7		<input checked="" type="checkbox"/>	0.000%	134		
0	CS-137	FP	4.3871E-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 06:41

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

Health Physics Sample Records

Sample ID: 142493

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140605BD04 SOUTH LAY DOWN # 8

**Review/Approve**

**HP Eng Review**

Reviewed: COOPER, TERRY L

Date: 06/11/14 06:43

Comments: 338 keV peak to Ac-228; the FWHM for the 382 keV peak is > 3.0

**Disposition**

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

**Final Approval**

Approved: COOPER, TERRY L

Date: 06/11/14 06:43

Comments:

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*****
*          SONGS                      HEALTH PHYSICS REPORT          6-JUN-2014 20:40 *
*-----*
*                >>>> SAMPLE PARAMETERS <<<<<                *
*
* Title       : 140605BD04 SOUTH LAY DOWN # 8                    *
*
* ID          : 30385                      Acquisition date: 6-JUN-2014 20:37:52. *
* Start Time : 6-JUN-2014 20:37:00.                    *
* Stop Time  : 6-JUN-2014 20:37:00.                    Counting System : U2GSP *
* Quantity   : 1.85000E+03 GR                      IHPS Sample Number: 142493 *
* Geometry   : A_1L_marinelli_sand_1                Analysis Library : HP_NATURAL *
*                               Operator: DAVID NEEBE *
*-----*
*                >>>> A #41-TP11679B . PARAMETERS <<<<<                *
*
* Elapsed Live Time : 0 00:03:00.40 Calibration : 6-JUN-2014 20:05: *
* Elapsed Real Time : 0 00:03:00.46 Energy Offset : 2.54391E-01 *
* Deadtime          : 0.0% Energy Slope : 4.99481E-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	76.98	32	30	1.29	153.62	151	6	31.7	1.75E+00	BI-214 PB-212 PB-214
1	238.55	65	11	1.15	477.08	472	17	15.0	5.58E-01	PB-212
1	241.57	15	8	1.15	483.13	472	17	41.8		RA-224 PB-214
1	295.08	27	9	1.46	590.26	585	9	27.2	2.73E-01	PB-214
1	337.87	23	7	2.65	675.93	672	11	29.1	5.39E-01	
1	351.83	59	0	1.46	703.86	700	8	13.0	4.43E-01	PB-214
1	382.41	18	2	3.44	765.10	760	8	24.5	1.61E+00	
1	582.97	17	0	1.39	1166.63	1162	8	24.4	6.41E-01	TL-208
1	609.22	37	0	2.16	1219.18	1214	9	15.6	5.91E-01	BI-214
1	1460.90	69	0	1.74	2924.17	2919	11	12.2	6.32E-01	K-40

Summary of Nuclide Activity  
Sample ID : 30385

Page : 2  
Acquisition date : 6-JUN-2014 20:37:52

Total number of lines in spectrum 10  
Number of unidentified lines 1  
Number of lines tentatively identified by NID 9 90.00%

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	9.897E-06	9.897E-06	1.212E-06	12.24	A
TL-208	3.05M	1.68	1.450E-07	2.436E-07	0.595E-07	24.43	A
PB-212	10.64H	1.00	5.778E-07	5.793E-07	0.869E-07	15.00	A
BI-214	19.90M	1.09	5.960E-07	6.470E-07	1.010E-07	15.62	A
PB-214	26.80M	1.06	6.170E-07	6.559E-07	1.783E-07	27.18	A
RA-224	3.66D	1.00	1.525E-06	1.525E-06	0.638E-06	41.83	A
Total Activity :			1.336E-05	1.355E-05			

Grand Total Activity : 1.336E-05 1.355E-05

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

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

Unidentified Energy Lines  
Sample ID : 30385

Page : 3  
Acquisition date : 6-JUN-2014 20:37:52

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	337.87	23	7	2.65	675.93	672	11	1.30E-01	29.1	1.71E+00	T
1	382.41	18	2	3.44	765.10	760	8	9.87E-02	24.5	1.57E+00	

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30385

Page : 4  
Acquisition date : 6-JUN-2014 20:37:52

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	69	10.67*	5.314E-01	9.897E-06	9.897E-06	12.24
TL-208	72.80	-----	2.14	1.594E+00	-----	Line Not Found	-----
	74.97	-----	3.60	1.692E+00	-----	Line Not Found	-----
	84.79	-----	1.27	2.058E+00	-----	Line Not Found	-----
	252.45	-----	0.80	2.021E+00	-----	Line Not Found	-----
	277.28	-----	6.80	1.920E+00	-----	Line Not Found	-----
	510.61	-----	21.60	1.265E+00	-----	Line Not Found	-----
	583.02	17	86.00*	1.128E+00	1.450E-07	2.436E-07	24.43
	763.06	-----	1.64	8.744E-01	-----	Line Not Found	-----
	860.30	-----	12.00	7.770E-01	-----	Line Not Found	-----
	PB-212	74.81	-----	10.50	1.685E+00	-----	Line Not Found
77.11		32	17.70	1.777E+00	8.352E-07	8.374E-07	31.73
87.19		-----	6.27	2.129E+00	-----	Line Not Found	-----
90.13		-----	1.86	2.206E+00	-----	Line Not Found	-----
115.12		-----	0.59	2.535E+00	-----	Line Not Found	-----
238.58		65	43.60*	2.082E+00	5.778E-07	5.793E-07	15.00
300.03		-----	3.34	1.834E+00	-----	Line Not Found	-----
BI-214	76.86	32	0.58	1.777E+00	2.549E-05	2.767E-05	31.73
	79.29	-----	0.97	1.869E+00	-----	Line Not Found	-----
	609.31	37	46.10*	1.084E+00	5.960E-07	6.470E-07	15.62
	665.44	-----	1.56	9.985E-01	-----	Line Not Found	-----
	768.35	-----	4.88	8.685E-01	-----	Line Not Found	-----
	806.16	-----	1.23	8.283E-01	-----	Line Not Found	-----
	934.04	-----	3.16	7.177E-01	-----	Line Not Found	-----
	1120.27	-----	15.00	6.114E-01	-----	Line Not Found	-----
	1155.18	-----	1.69	5.973E-01	-----	Line Not Found	-----
	1238.11	-----	5.92	5.697E-01	-----	Line Not Found	-----
	1280.95	-----	1.47	5.585E-01	-----	Line Not Found	-----
	1377.66	-----	4.02	5.401E-01	-----	Line Not Found	-----
	1385.30	-----	0.78	5.391E-01	-----	Line Not Found	-----
	1401.48	-----	1.39	5.370E-01	-----	Line Not Found	-----
	1407.97	-----	2.48	5.362E-01	-----	Line Not Found	-----
	1509.22	-----	2.19	5.292E-01	-----	Line Not Found	-----
	1583.22	-----	0.72	5.296E-01	-----	Line Not Found	-----
	1661.26	-----	1.15	5.351E-01	-----	Line Not Found	-----
PB-214	1729.58	-----	3.05	5.442E-01	-----	Line Not Found	-----
	1764.49	-----	15.90	5.503E-01	-----	Line Not Found	-----
	1847.41	-----	2.12	5.694E-01	-----	Line Not Found	-----
	53.17	-----	1.10	5.543E-01	-----	Line Not Found	-----
	74.81	-----	6.52	1.685E+00	-----	Line Not Found	-----
	77.11	32	11.00	1.777E+00	1.344E-06	1.429E-06	31.73
	87.19	-----	3.88	2.129E+00	-----	Line Not Found	-----
	90.13	-----	1.15	2.206E+00	-----	Line Not Found	-----
	241.92	15	7.46	2.069E+00	7.971E-07	8.473E-07	41.83
	258.94	-----	0.55	1.994E+00	-----	Line Not Found	-----
	295.09	27	19.20*	1.852E+00	6.170E-07	6.559E-07	27.18
	351.87	59	37.10	1.662E+00	7.809E-07	8.301E-07	13.03
785.83	-----	1.09	8.495E-01	-----	Line Not Found	-----	
839.00	-----	0.59	7.964E-01	-----	Line Not Found	-----	

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/GR	Decay Corr uCi/GR	1-Sigma %Error
RA-224	83.79	-----	0.20	2.027E+00	-----	Line Not Found	-----
	240.76	15	3.90*	2.069E+00	1.525E-06	1.525E-06	41.83

Flag: "\*" = Keyline

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	4.	477.61	7.0085E-07
MN-54	5.	834.83	1.3260E-07
MN-56	1.	846.81	7.7105E-08
CO-57	11.	122.06	6.7670E-08
CO-58	2.	810.79	9.1689E-08
CO-60	2.	1332.50	1.3640E-07
SB-124	2.	602.73	7.0967E-08
SB-125	7.	427.88	2.7702E-07
CS-134	6.	604.71	1.0713E-07
CS-137	0.	661.66	4.3871E-08