

## Health Physics Sample Records

**Sample ID:** 142494

**Type:** RLSSS

**Type Detail:** SAND

**Status:** APPROVED

**Rasterized:** ☒

**Description:** 140605BD05 SOUTH LAY DOWN # 10

### 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 07:42

**Comments:**

### Origin

**Mat. Size/Volume:** 1965 GRAMS

**Docmnt/MO/Act #:**

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

**Description:** SOUTH LAY DOWN # 10

### Collection

**Sample Tech:** DYNES, WILLIAM J

**Sample Date:** 06/05/14 09:30

**Count Time:** 900 (secs.)

**Tritium Req:** No

**Sample Size/Volume:** 1965 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:** No

**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: 142494

Type: RLSSS


















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Status: APPROVED

Rasterized: 

Description: 140605BD05 SOUTH LAY DOWN # 10

## Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
A_1L_marinelli_sand_	30391	1965 GR			.000		NEEBE, DAVID J	06/06/14 20:58		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments		Mod Id	Mod Date
0 K-40	NT	0.00001203	1.29E-6		73.021%	40				
0 TL-208	NT	2.945E-7	6.29E-8		1.788%	208				
0 PB-212	NT	4.91E-7	1.023E-7		2.980%	212				
0 BI-214	NT	4.116E-7	1.004E-7		2.498%	214				
0 PB-214	NT	5.792E-7	1.024E-7		3.516%	214				
0 RA-226	NT	2.513E-6	5.71E-7		15.254%	226				
0 U-235	NT	1.555E-7	3.53E-8		0.944%	235				
0 BE-7	AP	6.4191E-7			0.000%	7				
0 MN-54	AP	1.3763E-7			0.000%	54				
0 MN-56	AP	7.2531E-8			0.000%	56				
0 CO-57	AP	6.9045E-8			0.000%	57				
0 CO-58	AP	8.6299E-8			0.000%	58				
0 CO-60	AP	1.1988E-7			0.000%	60				
0 SB-124	AP	9.9677E-8			0.000%	124				
0 SB-125	FP	1.9237E-7			0.000%	125				
0 CS-134	FP	9.4504E-8			0.000%	134				
0 CS-137	FP	1.0511E-7			0.000%	137				

## Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/11/14 06:44

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

## Health Physics Sample Records

Sample ID: **142494**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140605BD05 SOUTH LAY DOWN # 10

**Review/Approve**

### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/11/14 06:47

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

### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

### Final Approval

Approved: COOPER, TERRY L

Date: 06/11/14 06:48

Comments:

```

*****
*          SONGS                      HEALTH PHYSICS REPORT          6-JUN-2014 20:54      *
*-----*
*          >>>> SAMPLE   PARAMETERS <<<<<          *
*-----*
* Title      : 140605BD05 SOUTH LAY DOWN # 10          *
* ID         : 30391          Acquisition date: 6-JUN-2014 20:51:44. *
* Start Time: 6-JUN-2014 20:51:00.          *
* Stop Time : 6-JUN-2014 20:51:00.          Counting System   : U2GSP          *
* Quantity  : 1.96500E+03 GR          IHPS Sample Number: 142494          *
* Geometry  : A_1L_marinelli_sand_1          Analysis Library : HP_NATURAL          *
*          Operator: DAVID NEEBE          *
*-----*
*          >>>> A #41-TP11679B   PARAMETERS <<<<<          *
*-----*
* Elapsed Live Time : 0 00:03:00.45          Calibration      : 6-JUN-2014 20:05:          *
* Elapsed Real Time  : 0 00:03:00.50          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	77.32	33	38	1.35	154.30	151	8	37.3	2.29E+00	BI-214 PB-212 PB-214
1	185.55	25	4	1.71	370.98	368	7	22.7	6.73E-01	U-235 RA-226
1	238.44	58	28	1.08	476.86	473	9	20.8	2.38E+00	PB-212
1	338.15	17	0	1.46	676.49	671	10	27.7	7.84E-01	
1	352.03	44	4	1.17	704.27	699	9	17.7	6.52E-01	PB-214
1	583.53	23	0	1.85	1167.75	1163	10	21.4	4.82E-01	TL-208
1	609.53	25	2	1.28	1219.80	1215	9	24.4	1.87E+00	BI-214
1	1461.00	89	0	1.99	2924.37	2919	11	10.7	8.78E-01	K-40

Summary of Nuclide Activity  
Sample ID : 30391

Page : 2  
Acquisition date : 6-JUN-2014 20:51:44

Total number of lines in spectrum 8  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 8 100.00%

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	1.203E-05	1.203E-05	0.129E-05	10.72	A
TL-208	3.05M	1.63	1.804E-07	2.945E-07	0.629E-07	21.35	A
PB-212	10.64H	1.00	4.898E-07	4.910E-07	1.023E-07	20.83	A
BI-214	19.90M	1.08	3.808E-07	4.116E-07	1.004E-07	24.39	A
PB-214	26.80M	1.06	5.466E-07	5.792E-07	1.024E-07	17.68	KA
RA-226	1600.00Y	1.00	2.513E-06	2.513E-06	0.571E-06	22.73	A
U-235	7.04E+08Y	1.00	1.555E-07	1.555E-07	0.353E-07	22.73	A
Total Activity :			1.630E-05	1.647E-05			

Grand Total Activity : 1.630E-05 1.647E-05

Flags: "K" = Keyline not found "M" = Manually accepted  
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : 30391

Page : 3  
Acquisition date : 6-JUN-2014 20:51:44

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	338.15	17	0	1.46	676.49	671	10	9.39E-02	27.7	1.70E+00	T

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30391

Page : 4  
Acquisition date : 6-JUN-2014 20:51:44

No interference correction performed

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/GR	Decay Corr uCi/GR	1-Sigma %Error
K-40	1460.83	89	10.67*	5.314E-01	1.203E-05	1.203E-05	10.72
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	23	86.00*	1.127E+00	1.804E-07	2.945E-07	21.35
	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	33	17.70	1.791E+00	8.046E-07	8.065E-07	37.32
	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	58	43.60*	2.083E+00	4.898E-07	4.910E-07	20.83
	300.03	-----	3.34	1.834E+00	-----	Line Not Found	-----
BI-214	76.86	33	0.58	1.791E+00	2.455E-05	2.654E-05	37.32
	79.29	-----	0.97	1.869E+00	-----	Line Not Found	-----
	609.31	25	46.10*	1.084E+00	3.808E-07	4.116E-07	24.39
	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	-----
	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	-----
PB-214	53.17	-----	1.10	5.543E-01	-----	Line Not Found	-----
	74.81	-----	6.52	1.685E+00	-----	Line Not Found	-----
	77.11	33	11.00	1.791E+00	1.295E-06	1.372E-06	37.32
	87.19	-----	3.88	2.129E+00	-----	Line Not Found	-----
	90.13	-----	1.15	2.206E+00	-----	Line Not Found	-----
	241.92	-----	7.46	2.067E+00	-----	Line Not Found	-----
	258.94	-----	0.55	1.994E+00	-----	Line Not Found	-----
	295.09	-----	19.20*	1.852E+00	-----	Line Not Found	-----
	351.87	44	37.10	1.662E+00	5.466E-07	5.792E-07	17.68
	785.83	-----	1.09	8.495E-01	-----	Line Not Found	-----
	839.00	-----	0.59	7.964E-01	-----	Line Not Found	-----



Nuclide Line Activity Report (continued)  
Sample ID : 30391

Page : 6  
Acquisition date : 6-JUN-2014 20:51:44

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/GR	Decay Corr uCi/GR	1-Sigma %Error
RA-226	81.07	-----	0.18	1.934E+00	-----	Line Not Found	-----
	186.11	25	3.28*	2.342E+00	2.513E-06	2.513E-06	22.73
U-235	89.96	-----	3.36	2.201E+00	-----	Line Not Found	-----
	93.35	-----	5.50	2.279E+00	-----	Line Not Found	-----
	105.36	-----	1.98	2.463E+00	-----	Line Not Found	-----
	109.18	-----	1.50	2.498E+00	-----	Line Not Found	-----
	143.79	-----	10.50	2.533E+00	-----	Line Not Found	-----
	163.38	-----	4.70	2.453E+00	-----	Line Not Found	-----
	185.74	25	53.00*	2.342E+00	1.555E-07	1.555E-07	22.73
	194.96	-----	0.59	2.294E+00	-----	Line Not Found	-----
	202.13	-----	1.00	2.257E+00	-----	Line Not Found	-----
	205.33	-----	4.70	2.241E+00	-----	Line Not Found	-----

Flag: "\*" = Keyline

Minimum Detectable Activity Report  
Sample ID : 30391

Page : 7  
Acquisition date : 6-JUN-2014 20:51:44

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	4.	477.61	6.4191E-07
MN-54	6.	834.83	1.3763E-07
MN-56	1.	846.81	7.2531E-08
CO-57	14.	122.06	6.9045E-08
CO-58	2.	810.79	8.6299E-08
CO-60	2.	1173.24	1.1988E-07
SB-124	6.	602.73	9.9677E-08
SB-125	3.	427.88	1.9237E-07
CS-134	5.	604.71	9.4504E-08
CS-137	4.	661.66	1.0511E-07