

# Health Physics Sample Records

Sample ID: 142522

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: ☒

Description: 140528BD 03 STAR YARD # 3-20

## Common

Resp Org: P4000 - PROJECT MANAGEMEN

Cross Ref Sample ID:

Priority: N

Contact: COOPER, TERRY L

Survey No:

Reference ID: 142432

Accounting Subcode:

Unknown Mat: NO

Hazardous Mat: NO

Comments: COUNT TO MDA

Reviewed: DYNES, WILLIAM J

Date: 06/11/14 10:33

Comments: COUNT TO MDA

## Origin

Mat. Size/Volume: 1816 GRAMS

Docmnt/MO/Act #:

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

Description: STAR YARD # 3

## Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 05/23/14 12:48

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 1816 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:


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











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Status: APPROVED

Rasterized: 

Description: 140528BD 03 STAR YARD # 3-20

## Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
A_1L_marinelli_sand_	1015	1000 gr			.000		DYNES, WILLIAM J	06/11/14 14:03		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments		Mod Id	Mod Date
0 BE-7	AP	1.393E-6	4.11E-7		7.760%	7				
0 K-40	NT	0.0000109	1.22E-6		60.722%	40				
0 TL-208	NT	4.929E-7	1.119E-7		2.746%	208				
0 PB-212	NT	6.869E-7	1.014E-7		3.827%	212				
0 BI-214	NT	6.623E-7	1.248E-7		3.690%	214				
0 PB-214	NT	4.85E-7	2.183E-7		2.702%	214				
0 RA-226	NT	2.663E-6	8.27E-7		14.835%	226				
0 AC-228	NT	5.029E-7	3.466E-7		2.802%	228				
0 U-235	NT	1.648E-7	5.55E-8		0.918%	235				
0 MN-54	AP	7.4934E-8			0.000%	54				
0 MN-56	AP	2.2478E-8			0.000%	56				
0 CO-57	AP	7.6585E-8			0.000%	57				
0 CO-58	AP	1.0182E-7			0.000%	58				
0 CO-60	AP	1.1046E-7			0.000%	60				
0 SB-124	AP	7.1267E-8			0.000%	124				
0 SB-125	FP	1.8533E-7			0.000%	125				
0 CS-134	FP	1.1345E-7			0.000%	134				
0 CS-137	FP	1.7609E-7			0.000%	137				

## Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/17/14 13:53

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments: This is a replacement for ID# 142432 that had error in description (2-20 vs: 3-20)

## Health Physics Sample Records

Sample ID: 142522

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140528BD 03 STAR YARD # 3-20

Review/Approve

### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/17/14 13:54

Comments: U-235 likely mis-ID'd off Ra-226 energy peak. Be-7 is a natural product coming from cosmic ray interaction.

### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

### Final Approval

Approved: COOPER, TERRY L

Date: 06/17/14 13:54

Comments:

```

*****
*          SONGS                      HEALTH PHYSICS REPORT          11-JUN-2014 10:54      *
*-----*
*          >>>> SAMPLE  PARAMETERS <<<<          *
*-----*
* Title      : 140528BD 03 STAR YARD # 3-20          *
* ID         : 1013                      Acquisition date: 11-JUN-2014 10:51:47 *
* Start Time: 11-JUN-2014 10:51:00          *
* Stop Time : 11-JUN-2014 10:51:00          Counting System : U1GSP          *
* Quantity  : 1.81600E+03 GR              IHPS Sample Number: 142522          *
* Geometry  : A_1L_marinelli_sand_1        Analysis Library : HP_NATURAL          *
*          Operator: BILL DYNES          *
*-----*
*          >>>> A -1922924  PARAMETERS <<<<          *
*-----*
* Elapsed Live Time : 0 00:03:00.29      Calibration      : 11-JUN-2014 09:11      *
* Elapsed Real Time : 0 00:03:00.36      Energy Offset   : -1.07429E-01          *
* Deadtime          : 0.0%                Energy Slope    : 4.99821E-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	239.07	54	23	1.59	478.50	472	15	24.7	2.91E+00	PB-212
1	295.04	17	13	1.96	590.47	585	10	43.2	2.50E+00	PB-214
1	338.58	25	5	3.64	677.58	672	9	22.7	7.39E-01	
1	352.00	34	6	2.60	704.42	697	11	21.1	1.12E+00	PB-214
1	583.53	15	4	1.68	1167.57	1163	8	34.0	1.93E-01	TL-208
1	609.39	21	2	1.91	1219.29	1214	10	25.9	5.44E-01	BI-214
1	1460.69	57	0	2.11	2921.85	2916	11	13.1	4.46E-01	K-40

Summary of Nuclide Activity  
Sample ID : 1013

Page : 2  
Acquisition date : 11-JUN-2014 10:51:47

Total number of lines in spectrum 7  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 7 100.00%

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	9.827E-06	9.827E-06	1.338E-06	13.62	A
TL-208	3.05M	1.65	1.421E-07	2.342E-07	0.807E-07	34.44	A
PB-212	10.64H	1.00	5.245E-07	5.258E-07	1.318E-07	25.07	A
BI-214	19.90M	1.08	3.845E-07	4.162E-07	1.093E-07	26.25	A
PB-214	26.80M	1.06	4.355E-07	4.620E-07	2.005E-07	43.41	A
Total Activity :			1.131E-05	1.147E-05			

Grand Total Activity : 1.131E-05 1.147E-05

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

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

Unidentified Energy Lines  
Sample ID : 1013

Page : 3  
Acquisition date : 11-JUN-2014 10:51:47

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	338.58	25	5	3.64	677.58	672	9	1.39E-01	22.7	1.56E+00	T

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 1013

Page : 4  
Acquisition date : 11-JUN-2014 10:51:47

No interference correction performed

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected	Decay Corr	1-Sigma
					uCi/GR	uCi/GR	%Error
K-40	1460.83	57	10.67*	4.483E-01	9.827E-06	9.827E-06	13.62
TL-208	72.80	-----	2.14	1.155E+00	-----	Line Not Found	-----
	74.97	-----	3.60	1.239E+00	-----	Line Not Found	-----
	84.79	-----	1.27	1.578E+00	-----	Line Not Found	-----
	252.45	-----	0.80	1.887E+00	-----	Line Not Found	-----
	277.28	-----	6.80	1.783E+00	-----	Line Not Found	-----
	510.61	-----	21.60	1.121E+00	-----	Line Not Found	-----
	583.02	15	86.00*	9.946E-01	1.421E-07	2.342E-07	34.44
	763.06	-----	1.64	7.714E-01	-----	Line Not Found	-----
	860.30	-----	12.00	6.870E-01	-----	Line Not Found	-----
PB-212	74.81	-----	10.50	1.233E+00	-----	Line Not Found	-----
	77.11	-----	17.70	1.319E+00	-----	Line Not Found	-----
	87.19	-----	6.27	1.650E+00	-----	Line Not Found	-----
	90.13	-----	1.86	1.730E+00	-----	Line Not Found	-----
	115.12	-----	0.59	2.162E+00	-----	Line Not Found	-----
	238.58	54	43.60*	1.946E+00	5.245E-07	5.258E-07	25.07
	300.03	-----	3.34	1.694E+00	-----	Line Not Found	-----
BI-214	76.86	-----	0.58	1.310E+00	-----	Line Not Found	-----
	79.29	-----	0.97	1.397E+00	-----	Line Not Found	-----
	609.31	21	46.10*	9.556E-01	3.845E-07	4.162E-07	26.25
	665.44	-----	1.56	8.797E-01	-----	Line Not Found	-----
	768.35	-----	4.88	7.663E-01	-----	Line Not Found	-----
	806.16	-----	1.23	7.315E-01	-----	Line Not Found	-----
	934.04	-----	3.16	6.352E-01	-----	Line Not Found	-----
	1120.27	-----	15.00	5.391E-01	-----	Line Not Found	-----
	1155.18	-----	1.69	5.255E-01	-----	Line Not Found	-----
	1238.11	-----	5.92	4.976E-01	-----	Line Not Found	-----
	1280.95	-----	1.47	4.855E-01	-----	Line Not Found	-----
	1377.66	-----	4.02	4.629E-01	-----	Line Not Found	-----
	1385.30	-----	0.78	4.614E-01	-----	Line Not Found	-----
	1401.48	-----	1.39	4.583E-01	-----	Line Not Found	-----
	1407.97	-----	2.48	4.571E-01	-----	Line Not Found	-----
	1509.22	-----	2.19	4.415E-01	-----	Line Not Found	-----
	1583.22	-----	0.72	4.336E-01	-----	Line Not Found	-----
	1661.26	-----	1.15	4.280E-01	-----	Line Not Found	-----
	1729.58	-----	3.05	4.255E-01	-----	Line Not Found	-----
	1764.49	-----	15.90	4.249E-01	-----	Line Not Found	-----
	1847.41	-----	2.12	4.256E-01	-----	Line Not Found	-----
PB-214	53.17	-----	1.10	3.707E-01	-----	Line Not Found	-----
	74.81	-----	6.52	1.233E+00	-----	Line Not Found	-----
	77.11	-----	11.00	1.319E+00	-----	Line Not Found	-----
	87.19	-----	3.88	1.650E+00	-----	Line Not Found	-----
	90.13	-----	1.15	1.730E+00	-----	Line Not Found	-----
	241.92	-----	7.46	1.933E+00	-----	Line Not Found	-----
	258.94	-----	0.55	1.859E+00	-----	Line Not Found	-----
	295.09	17	19.20*	1.713E+00	4.355E-07	4.620E-07	43.41
	351.87	34	37.10	1.514E+00	5.067E-07	5.375E-07	21.59
	785.83	-----	1.09	7.498E-01	-----	Line Not Found	-----
	839.00	-----	0.59	7.038E-01	-----	Line Not Found	-----



Nuclide Line Activity Report (continued)  
Sample ID : 1013

Page : 6  
Acquisition date : 11-JUN-2014 10:51:47

Flag: "\*" = Keyline

Minimum Detectable Activity Report  
Sample ID : 1013

Page : 7  
Acquisition date : 11-JUN-2014 10:51:47

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	2.	477.61	6.2063E-07
MN-54	3.	834.83	1.2560E-07
MN-56	3.	846.81	1.3004E-07
CO-57	14.	122.06	8.6879E-08
CO-58	2.	810.79	1.0032E-07
CO-60	0.	1332.50	4.7212E-08
SB-124	3.	602.73	9.0270E-08
SB-125	6.	427.88	2.9730E-07
CS-134	2.	604.71	8.1541E-08
CS-137	1.	661.66	6.8019E-08