

# 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:


# Health Physics Sample Records

Sample ID: 142522

Type: RLSSS



















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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 14:00  *
*-----*
*          >>>> SAMPLE  PARAMETERS <<<<<          *
*
* Title      :          *
*
* ID         : 1015      Acquisition date: 11-JUN-2014 13:52:23 *
* Start Time: 11-JUN-2014 13:52:00      *
* Stop Time : 11-JUN-2014 13:52:00      Counting System   : U1GSP      *
* Quantity  : 1.00000E+03 gr      IHPS Sample Number: 142477      *
* Geometry  : A_1L_marinelli_sand_1      Analysis Library  : HP_NATURAL      *
*          Operator: BILL DYNES          *
*-----*
*          >>>> A -1922924  PARAMETERS <<<<<          *
*
* Elapsed Live Time : 0 00:08:00.44      Calibration       : 11-JUN-2014 09:11      *
* Elapsed Real Time : 0 00:08:00.56      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	77.44	39	57	1.21	155.14	152	7	36.4	2.12E+00	BI-214 PB-212 PB-214
1	185.95	34	19	1.73	372.24	366	10	30.9	9.64E-01	U-235 RA-226
1	209.55	31	11	2.26	419.46	414	11	27.8	8.38E-01	AC-228
1	238.66	103	35	1.01	477.69	473	9	14.1	1.73E+00	PB-212
1	295.20	25	24	1.75	590.80	583	12	44.8	1.59E+00	PB-214
1	338.64	17	26	1.13	677.69	672	14	66.3	2.17E+00	AC-228
1	351.94	60	2	1.34	704.30	700	9	14.1	1.41E+00	PB-214
1	477.68	31	12	2.18	955.83	949	12	28.9	7.81E-01	BE-7
1	511.07	32	0	2.96	1022.62	1017	14	18.4	5.39E-01	TL-208
1	583.46	32	5	1.41	1167.44	1163	9	22.0	1.02E+00	TL-208
1	609.38	45	7	1.59	1219.28	1215	9	18.4	1.33E+00	BI-214
1	1460.58	93	0	1.97	2921.64	2914	14	10.6	7.26E-01	K-40

Summary of Nuclide Activity  
Sample ID : 1015

Page : 2  
Acquisition date : 11-JUN-2014 13:52:23

Total number of lines in spectrum 12  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 12 100.00%

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected uCi/gr	Decay Corr uCi/gr	Decay Corr 1-Sigma Error	1-Sigma %Error	Flags
BE-7	53.29D	1.00	1.393E-06	1.393E-06	0.411E-06	29.51	A
Total Activity :			1.393E-06	1.393E-06			

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	1.090E-05	1.090E-05	0.122E-05	11.16	A
TL-208	3.05M	2.37	2.078E-07	4.929E-07	1.119E-07	22.70	A
PB-212	10.64H	1.00	6.837E-07	6.869E-07	1.014E-07	14.76	A
BI-214	19.90M	1.16	5.701E-07	6.623E-07	1.248E-07	18.85	A
PB-214	26.80M	1.12	4.337E-07	4.850E-07	2.183E-07	45.00	A
RA-226	1600.00Y	1.00	2.663E-06	2.663E-06	0.827E-06	31.05	A
AC-228	6.13H	1.01	4.988E-07	5.029E-07	3.466E-07	68.91	KA
U-235	7.04E+08Y	1.00	1.648E-07	1.648E-07	0.555E-07	33.67	A
Total Activity :			1.612E-05	1.656E-05			

Grand Total Activity : 1.752E-05 1.795E-05

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

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

Unidentified Energy Lines  
Sample ID : 1015

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Acquisition date : 11-JUN-2014 13:52:23

None

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 1015

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Acquisition date : 11-JUN-2014 13:52:23

No interference correction performed

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/gr	Decay Corr uCi/gr	1-Sigma %Error
BE-7	477.61	31	10.39*	1.188E+00	1.393E-06	1.393E-06	29.51

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/gr	Decay Corr uCi/gr	1-Sigma %Error
K-40	1460.83	93	10.67*	4.483E-01	1.090E-05	1.090E-05	11.16
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	32	21.60	1.120E+00	7.384E-07	1.752E-06	19.57
	583.02	32	86.00*	9.947E-01	2.078E-07	4.929E-07	22.70
	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	39	17.70	1.331E+00	9.315E-07	9.359E-07	36.66
	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	103	43.60*	1.948E+00	6.837E-07	6.869E-07	14.76
	300.03	-----	3.34	1.694E+00	-----	Line Not Found	-----
BI-214	76.86	39	0.58	1.331E+00	2.843E-05	3.302E-05	36.87
	79.29	-----	0.97	1.397E+00	-----	Line Not Found	-----
	609.31	45	46.10*	9.556E-01	5.701E-07	6.623E-07	18.85
	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	39	11.00	1.331E+00	1.499E-06	1.676E-06	36.69
	87.19	-----	3.88	1.650E+00	-----	Line Not Found	-----
	90.13	-----	1.15	1.730E+00	-----	Line Not Found	-----



Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected Decay Corr		1-Sigma
					uCi/gr	uCi/gr	%Error
RA-226	241.92	-----	7.46	1.933E+00	-----	Line Not Found	-----
	258.94	-----	0.55	1.859E+00	-----	Line Not Found	-----
	295.09	25	19.20*	1.713E+00	4.337E-07	4.850E-07	45.00
	351.87	60	37.10	1.515E+00	6.045E-07	6.760E-07	14.74
	785.83	-----	1.09	7.498E-01	-----	Line Not Found	-----
	839.00	-----	0.59	7.038E-01	-----	Line Not Found	-----
	81.07	-----	0.18	1.459E+00	-----	Line Not Found	-----
	186.11	34	3.28*	2.180E+00	2.663E-06	2.663E-06	31.05
	89.96	-----	3.40	1.726E+00	-----	Line Not Found	-----
	93.35	-----	5.60	1.811E+00	-----	Line Not Found	-----
AC-228	99.55	-----	1.30	1.943E+00	-----	Line Not Found	-----
	105.36	-----	2.00	2.042E+00	-----	Line Not Found	-----
	108.99	-----	0.67	2.093E+00	-----	Line Not Found	-----
	129.03	-----	2.90	2.254E+00	-----	Line Not Found	-----
	153.89	-----	0.84	2.276E+00	-----	Line Not Found	-----
	209.39	31	4.10	2.078E+00	2.032E-06	2.049E-06	34.10
	216.24	-----	0.80	2.048E+00	-----	Line Not Found	-----
	270.26	-----	3.80	1.812E+00	-----	Line Not Found	-----
	328.07	-----	3.50	1.593E+00	-----	Line Not Found	-----
	338.42	17	12.40	1.558E+00	4.988E-07	5.029E-07	68.91
	340.94	-----	0.52	1.550E+00	-----	Line Not Found	-----
	409.62	-----	2.20	1.348E+00	-----	Line Not Found	-----
	463.10	-----	4.60	1.219E+00	-----	Line Not Found	-----
	562.65	-----	1.01	1.028E+00	-----	Line Not Found	-----
	581.52	-----	3.00	9.978E-01	-----	Line Not Found	-----
	726.63	-----	0.87	8.087E-01	-----	Line Not Found	-----
	755.28	-----	1.32	7.791E-01	-----	Line Not Found	-----
	772.28	-----	1.09	7.625E-01	-----	Line Not Found	-----
	782.12	-----	0.59	7.532E-01	-----	Line Not Found	-----
	794.79	-----	4.60	7.416E-01	-----	Line Not Found	-----
	830.59	-----	0.63	7.107E-01	-----	Line Not Found	-----
	835.60	-----	1.71	7.065E-01	-----	Line Not Found	-----
	840.44	-----	0.94	7.026E-01	-----	Line Not Found	-----
	904.29	-----	0.89	6.549E-01	-----	Line Not Found	-----
	911.16	-----	29.00*	6.502E-01	-----	Line Not Found	-----
	964.64	-----	5.80	6.162E-01	-----	Line Not Found	-----
	968.97	-----	17.40	6.137E-01	-----	Line Not Found	-----
	1246.60	-----	0.57	4.951E-01	-----	Line Not Found	-----
	1459.19	-----	1.06	4.485E-01	-----	Line Not Found	-----
	1496.00	-----	1.05	4.432E-01	-----	Line Not Found	-----
U-235	1501.44	-----	0.58	4.425E-01	-----	Line Not Found	-----
	1580.30	-----	0.71	4.338E-01	-----	Line Not Found	-----
	1588.23	-----	3.60	4.331E-01	-----	Line Not Found	-----
	1630.47	-----	1.95	4.299E-01	-----	Line Not Found	-----
	1638.10	-----	0.54	4.294E-01	-----	Line Not Found	-----
	89.96	-----	3.36	1.726E+00	-----	Line Not Found	-----
	93.35	-----	5.50	1.811E+00	-----	Line Not Found	-----
	105.36	-----	1.98	2.042E+00	-----	Line Not Found	-----
	109.18	-----	1.50	2.096E+00	-----	Line Not Found	-----

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/gr	Decay Corr uCi/gr	1-Sigma %Error
	143.79	-----	10.50	2.283E+00	-----	Line Not Found	-----
	163.38	-----	4.70	2.256E+00	-----	Line Not Found	-----
	185.74	34	53.00*	2.180E+00	1.648E-07	1.648E-07	33.67
	194.96	-----	0.59	2.142E+00	-----	Line Not Found	-----
	202.13	-----	1.00	2.111E+00	-----	Line Not Found	-----
	205.33	-----	4.70	2.097E+00	-----	Line Not Found	-----

Flag: "\*" = Keyline

Minimum Detectable Activity Report  
Sample ID : 1015

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Acquisition date : 11-JUN-2014 13:52:23

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/gr)
MN-54	2.	834.83	7.4934E-08
MN-56	0.	846.81	2.2478E-08
CO-57	25.	122.06	7.6585E-08
CO-58	5.	810.79	1.0182E-07
CO-60	2.	1332.50	1.1046E-07
SB-124	4.	602.73	7.1267E-08
SB-125	5.	427.88	1.8533E-07
CS-134	12.	604.71	1.1345E-07
CS-137	20.	661.66	1.7609E-07