

## Health Physics Sample Records

**Sample ID:** 142469

**Type:** RLSSS

**Type Detail:** SAND

**Status:** APPROVED

**Rasterized:** ☒

**Description:** 140530BD 06 STARYARD SURVEY PT 43

### 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:**

**Reviewed:** DYNES, WILLIAM J

**Date:** 06/04/14 08:21

**Comments:**

### Origin

**Mat. Size/Volume:** 2041 GRAMS

**Docmnt/MO/Act #:**

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

**Description:** STARYARD SURVEY PT 43

### Collection

**Sample Tech:** DYNES, WILLIAM J

**Sample Date:** 05/30/14 12:12

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

**Tritium Req:** No

**Sample Size/Volume:** 2041 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:**

**Material Loc:**

# Health Physics Sample Records

Sample ID: 142469

Type: RLSSS
















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Status: APPROVED

Rasterized: 

Description: 140530BD 06 STARYARD SURVEY PT 43

## Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
A_1L_marinelli_sand_	30337	2041	GR		.000		WOODWARD, BRUCE E	06/04/14 14:48		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments		Mod Id	Mod Date
0 K-40	NT	8.417E-6	1.059E-6		81.657%	40				
0 PB-212	NT	4.389E-7	1.134E-7		4.258%	212				
0 BI-214	NT	3.816E-7	8.84E-8		3.702%	214				
0 PB-214	NT	4.966E-7	1.621E-7		4.818%	214				
0 AC-228	NT	5.737E-7	1.506E-7		5.566%	228				
0 BE-7	AP	3.5296E-7			0.000%	7				
0 MN-54	AP	8.5103E-8			0.000%	54				
0 MN-56	AP	1.0191E-7			0.000%	56				
0 CO-57	AP	5.3774E-8			0.000%	57				
0 CO-58	AP	8.3085E-8			0.000%	58				
0 CO-60	AP	9.146E-8			0.000%	60				
0 SB-124	AP	7.3726E-8			0.000%	124				
0 SB-125	FP	2.2065E-7			0.000%	125				
0 CS-134	FP	5.1837E-8			0.000%	134				
0 CS-137	FP	7.149E-8			0.000%	137				

## Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/10/14 13:39

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

## Health Physics Sample Records

Sample ID: **142469**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140530BD 06 STARYARD SURVEY PT 43

**Review/Approve**

### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 13:39

Comments:

### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

### Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 13:39

Comments:

```

*****
*          SONGS                      HEALTH PHYSICS REPORT          4-JUN-2014 14:42      *
*-----*
*          >>>> SAMPLE   PARAMETERS <<<<          *
*-----*
* Title      : 140530BD 06 STARYARD SURVEY PT 43          *
* ID         : 30337                      Acquisition date: 4-JUN-2014 14:39:12. *
* Start Time: 4-JUN-2014 14:39:00.          *
* Stop Time : 4-JUN-2014 14:39:00.          Counting System   : U2GSP          *
* Quantity  : 2.04100E+03 GR                IHPS Sample Number: 142469          *
* Geometry  : A_1L_marinelli_sand_1        Analysis Library  : HP_NATURAL          *
*          Operator: BRUCE WOODWARD          *
*-----*
*          >>>> A #41-TP11679B   PARAMETERS <<<<          *
*-----*
* Elapsed Live Time : 0 00:03:00.45   Calibration      : 3-JUN-2014 20:38:          *
* Elapsed Real Time  : 0 00:03:00.50   Energy Offset    : 2.22491E-01          *
* Deadtime           : 0.0%             Energy Slope    : 4.99526E-01          *
* Activity Mult Factor: 1.00000E+00     Energy Tolerance: 1.00000          *
* Half Life Ratio    : 8.00000          Sensitivity      : 5.00000          *
*-----*
*****

```

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
1	77.24	28	48	1.41	154.18	151	7	45.2	2.16E+00	BI-214 PB-212 PB-214
1	238.44	54	44	1.00	476.88	473	9	25.8	5.01E-01	PB-212
1	295.39	23	13	1.06	590.90	587	7	32.7	1.03E+00	PB-214
1	352.17	35	12	1.48	704.56	699	12	26.6	6.36E-01	PB-214
1	609.12	25	2	1.90	1218.98	1214	10	23.2	3.69E-01	BI-214
1	911.10	17	0	1.56	1823.55	1818	10	26.2	4.31E-01	AC-228
1	1460.89	65	0	2.18	2924.26	2918	12	12.6	7.21E-01	K-40

Summary of Nuclide Activity  
Sample ID : 30337

Page : 2  
Acquisition date : 4-JUN-2014 14:39:12

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	8.417E-06	8.417E-06	1.059E-06	12.59	A
PB-212	10.64H	1.00	4.381E-07	4.389E-07	1.134E-07	25.83	A
BI-214	19.90M	1.06	3.598E-07	3.816E-07	0.884E-07	23.17	A
PB-214	26.80M	1.04	4.753E-07	4.966E-07	1.621E-07	32.65	A
AC-228	6.13H	1.00	5.719E-07	5.737E-07	1.506E-07	26.24	A
Total Activity :			1.026E-05	1.031E-05			

Grand Total Activity : 1.026E-05 1.031E-05

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

Unidentified Energy Lines  
Sample ID : 30337

Page : 3  
Acquisition date : 4-JUN-2014 14:39:12

None

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30337

Page : 4  
Acquisition date : 4-JUN-2014 14:39:12

No interference correction performed

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected Decay Corr		1-Sigma
					uCi/GR	uCi/GR	
K-40	1460.83	65	10.67*	5.314E-01	8.417E-06	8.417E-06	12.59
PB-212	74.81	-----	10.50	1.685E+00	-----	Line Not Found	-----
	77.11	28	17.70	1.788E+00	6.502E-07	6.514E-07	45.23
	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	54	43.60*	2.083E+00	4.381E-07	4.389E-07	25.83
BI-214	300.03	-----	3.34	1.834E+00	-----	Line Not Found	-----
	76.86	28	0.58	1.788E+00	1.984E-05	2.105E-05	45.23
	79.29	-----	0.97	1.869E+00	-----	Line Not Found	-----
	609.31	25	46.10*	1.084E+00	3.598E-07	3.816E-07	23.17
	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	28	11.00	1.788E+00	1.046E-06	1.093E-06	45.23
	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	23	19.20*	1.851E+00	4.753E-07	4.966E-07	32.65
AC-228	351.87	35	37.10	1.661E+00	4.154E-07	4.340E-07	26.58
	785.83	-----	1.09	8.495E-01	-----	Line Not Found	-----
	839.00	-----	0.59	7.964E-01	-----	Line Not Found	-----
	89.96	-----	3.40	2.201E+00	-----	Line Not Found	-----
	93.35	-----	5.60	2.279E+00	-----	Line Not Found	-----
	99.55	-----	1.30	2.389E+00	-----	Line Not Found	-----
	105.36	-----	2.00	2.463E+00	-----	Line Not Found	-----
	108.99	-----	0.67	2.496E+00	-----	Line Not Found	-----
	129.03	-----	2.90	2.562E+00	-----	Line Not Found	-----
	153.89	-----	0.84	2.496E+00	-----	Line Not Found	-----
	209.39	-----	4.10	2.221E+00	-----	Line Not Found	-----
	216.24	-----	0.80	2.187E+00	-----	Line Not Found	-----



Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/GR	Decay Corr uCi/GR	1-Sigma %Error
	270.26	-----	3.80	1.948E+00	-----	Line Not Found	-----
	328.07	-----	3.50	1.738E+00	-----	Line Not Found	-----
	338.42	-----	12.40	1.704E+00	-----	Line Not Found	-----
	340.94	-----	0.52	1.696E+00	-----	Line Not Found	-----
	409.62	-----	2.20	1.499E+00	-----	Line Not Found	-----
	463.10	-----	4.60	1.368E+00	-----	Line Not Found	-----
	562.65	-----	1.01	1.164E+00	-----	Line Not Found	-----
	581.52	-----	3.00	1.131E+00	-----	Line Not Found	-----
	726.63	-----	0.87	9.173E-01	-----	Line Not Found	-----
	755.28	-----	1.32	8.833E-01	-----	Line Not Found	-----
	772.28	-----	1.09	8.641E-01	-----	Line Not Found	-----
	782.12	-----	0.59	8.534E-01	-----	Line Not Found	-----
	794.79	-----	4.60	8.400E-01	-----	Line Not Found	-----
	830.59	-----	0.63	8.043E-01	-----	Line Not Found	-----
	835.60	-----	1.71	7.996E-01	-----	Line Not Found	-----
	840.44	-----	0.94	7.951E-01	-----	Line Not Found	-----
	904.29	-----	0.89	7.403E-01	-----	Line Not Found	-----
	911.16	17	29.00*	7.349E-01	5.719E-07	5.737E-07	26.24
	964.64	-----	5.80	6.962E-01	-----	Line Not Found	-----
	968.97	-----	17.40	6.933E-01	-----	Line Not Found	-----
	1246.60	-----	0.57	5.673E-01	-----	Line Not Found	-----
	1459.19	-----	1.06	5.315E-01	-----	Line Not Found	-----
	1496.00	-----	1.05	5.296E-01	-----	Line Not Found	-----
	1501.44	-----	0.58	5.294E-01	-----	Line Not Found	-----
	1580.30	-----	0.71	5.295E-01	-----	Line Not Found	-----
	1588.23	-----	3.60	5.298E-01	-----	Line Not Found	-----
	1630.47	-----	1.95	5.324E-01	-----	Line Not Found	-----
	1638.10	-----	0.54	5.330E-01	-----	Line Not Found	-----

Flag: "\*" = Keyline

Minimum Detectable Activity Report  
Sample ID : 30337

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Acquisition date : 4-JUN-2014 14:39:12

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	1.	477.61	3.5296E-07
MN-54	2.	834.83	8.5103E-08
MN-56	3.	846.81	1.0191E-07
CO-57	8.	122.06	5.3774E-08
CO-58	2.	810.79	8.3085E-08
CO-60	1.	1173.24	9.1460E-08
SB-124	3.	602.73	7.3726E-08
SB-125	5.	427.88	2.2065E-07
CS-134	1.	604.71	5.1837E-08
CS-137	1.	661.66	7.1490E-08