

## Health Physics Sample Records

**Sample ID:** 142429

**Type:** RLSSS

**Type Detail:** SAND

**Status:** APPROVED

**Rasterized:** ☐

**Description:** 140528BD01 Star 01-20

### Common

**Resp Org:** P4000 - PROJECT MANAGEMENT

**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:** 05/29/14 11:10

**Comments:**

### Origin

**Mat. Size/Volume:** 1000 ml

**Docmnt/MO/Act #:**

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

**Description:** STAR 01 SAMPLE

### Collection

**Sample Tech:** DYNES, WILLIAM J

**Sample Date:** 05/28/14 11:33

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

**Tritium Req:** No

**Sample Size/Volume:** 1993 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:** N/A

**Depth:** 3" (in.)

**Equip ID:**

**Stored By:** ,

**Date:** 00/00/00 00:00

**Sample Loc:**

**Other:**

**Material Loc:**

# Health Physics Sample Records

Sample ID: 142429

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Type Detail: SAND

Status: APPROVED

Rasterized: ☐

Description: 140528BD01 Star 01-20

## Analysis

Geometry		MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
A_1L_marinelli_sand_		30266	1993	GR		.000		ABERNATHY, AGNES B	05/29/14 14:58		
	Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments		Mod Id	Mod Date
0	K-40	NT	9.81E-6	1.226E-6	<input type="checkbox"/>	80.847%	40				
0	TL-208	NT	2.646E-7	6.24E-8	<input type="checkbox"/>	2.181%	208				
0	PB-212	NT	5.317E-7	1.044E-7	<input type="checkbox"/>	4.382%	212				
0	BI-214	NT	4.862E-7	1.16E-7	<input type="checkbox"/>	4.007%	214				
0	PB-214	NT	5.196E-7	1.564E-7	<input type="checkbox"/>	4.282%	214				
0	AC-228	NT	5.22E-7	1.46E-7	<input type="checkbox"/>	4.302%	228				
0	BE-7	AP	2.9967E-7		<input checked="" type="checkbox"/>	0.000%	7				
0	MN-54	AP	9.3967E-8		<input checked="" type="checkbox"/>	0.000%	54				
0	MN-56	AP	1.0712E-7		<input checked="" type="checkbox"/>	0.000%	56				
0	CO-57	AP	6.886E-8		<input checked="" type="checkbox"/>	0.000%	57				
0	CO-58	AP	6.7443E-8		<input checked="" type="checkbox"/>	0.000%	58				
0	CO-60	AP	1.2741E-7		<input checked="" type="checkbox"/>	0.000%	60				
0	SB-124	AP	6.9893E-8		<input checked="" type="checkbox"/>	0.000%	124				
0	SB-125	FP	1.8578E-7		<input checked="" type="checkbox"/>	0.000%	125				
0	CS-134	FP	1.1156E-7		<input checked="" type="checkbox"/>	0.000%	134				
0	CS-137	FP	1.2816E-7		<input checked="" type="checkbox"/>	0.000%	137				

## Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/10/14 08:31

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:


## Health Physics Sample Records

Sample ID: **142429**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140528BD01 Star 01-20

**Review/Approve**

### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 08:31

Comments:

### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

### Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 08:32

Comments:

```

*****
*          SONGS                      HEALTH PHYSICS REPORT          29-MAY-2014 14:50      *
*-----*
*          >>>> SAMPLE   PARAMETERS <<<<          *
*-----*
* Title      : 140528BD01 STAR 01-20          *
* ID         : 30266                          Acquisition date: 29-MAY-2014 14:47:30 *
* Start Time: 29-MAY-2014 14:47:00          *
* Stop Time : 29-MAY-2014 14:47:00          Counting System   : U2GSP          *
* Quantity  : 1.99300E+03 GR                 IHPS Sample Number: 142429          *
* Geometry  : A_1L_marinelli_sand_1         Analysis Library   : HP_NATURAL          *
* Operator  : AGNES ABERNATHY                *
*-----*
*          >>>> A #41-TP11679B   PARAMETERS <<<<          *
*-----*
* Elapsed Live Time : 0 00:03:00.40      Calibration      : 28-MAY-2014 21:10      *
* Elapsed Real Time : 0 00:03:00.46      Energy Offset    : 2.58874E-01          *
* Deadtime          : 0.0%                Energy Slope    : 4.99485E-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	238.68	64	34	1.12	477.33	474	7	19.6	3.59E+00	PB-212
1	295.33	23	7	1.59	590.75	588	7	30.1	1.35E+00	PB-214
1	338.13	20	8	1.78	676.44	672	8	31.1	1.53E-01	AC-228
1	352.10	29	16	1.37	704.41	700	9	30.9	4.96E-01	PB-214
1	583.19	22	2	2.24	1167.07	1162	9	23.6	5.50E-01	TL-208
1	609.35	30	8	1.74	1219.45	1214	10	23.9	3.67E-01	BI-214
1	911.11	15	0	1.62	1823.61	1819	9	28.0	7.09E-01	AC-228
1	1460.98	74	3	1.76	2924.53	2919	11	12.5	3.41E-01	K-40

Summary of Nuclide Activity  
Sample ID : 30266

Page : 2  
Acquisition date : 29-MAY-2014 14:47:30

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	9.810E-06	9.810E-06	1.226E-06	12.50	A
TL-208	3.05M	1.55	1.710E-07	2.646E-07	0.624E-07	23.58	A
PB-212	10.64H	1.00	5.305E-07	5.317E-07	1.044E-07	19.63	A
BI-214	19.90M	1.07	4.535E-07	4.862E-07	1.160E-07	23.86	A
PB-214	26.80M	1.05	4.934E-07	5.196E-07	1.564E-07	30.10	A
AC-228	6.13H	1.00	5.200E-07	5.220E-07	1.460E-07	27.96	A
Total Activity :			1.198E-05	1.213E-05			

Grand Total Activity : 1.198E-05 1.213E-05

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

Unidentified Energy Lines  
Sample ID : 30266

Page : 3  
Acquisition date : 29-MAY-2014 14:47:30

None

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30266

Page : 4  
Acquisition date : 29-MAY-2014 14:47:30

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	74	10.67*	5.314E-01	9.810E-06	9.810E-06	12.50
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	22	86.00*	1.128E+00	1.710E-07	2.646E-07	23.58
	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	-----	17.70	1.782E+00	-----	Line Not Found	-----
	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	64	43.60*	2.082E+00	5.305E-07	5.317E-07	19.63
	300.03	-----	3.34	1.834E+00	-----	Line Not Found	-----
BI-214	76.86	-----	0.58	1.772E+00	-----	Line Not Found	-----
	79.29	-----	0.97	1.869E+00	-----	Line Not Found	-----
	609.31	30	46.10*	1.084E+00	4.535E-07	4.862E-07	23.86
	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	-----	11.00	1.782E+00	-----	Line Not Found	-----
	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	4.934E-07	5.196E-07	30.10
	351.87	29	37.10	1.661E+00	3.580E-07	3.770E-07	30.94
	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 Decay Corr		1-Sigma
					uCi/GR	uCi/GR	%Error
AC-228	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	-----
	270.26	-----	3.80	1.948E+00	-----	Line Not Found	-----
	328.07	-----	3.50	1.738E+00	-----	Line Not Found	-----
	338.42	20	12.40	1.705E+00	7.224E-07	7.252E-07	31.13
	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	15	29.00*	7.349E-01	5.200E-07	5.220E-07	27.96
	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 : 30266

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Acquisition date : 29-MAY-2014 14:47:30

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	0.	477.61	2.9967E-07
MN-54	2.	834.83	9.3967E-08
MN-56	3.	846.81	1.0712E-07
CO-57	14.	122.06	6.8860E-08
CO-58	1.	810.79	6.7443E-08
CO-60	2.	1332.50	1.2741E-07
SB-124	2.	602.73	6.9893E-08
SB-125	3.	427.88	1.8578E-07
CS-134	8.	604.71	1.1156E-07
CS-137	7.	661.66	1.2816E-07