

## Health Physics Sample Records

**Sample ID:** 142443

**Type:** RLSSS

**Type Detail:** SAND

**Status:** APPROVED

**Rasterized:** ☒

**Description:** 140528BD 13 STAR 13-20 Dirt Sample

### 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:** 05/30/14 08:10

**Comments:**

### Origin

**Mat. Size/Volume:** 1816 GRAMS

**Docmnt/MO/Act #:**

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

**Description:** STAR 13 SOIL SAMPLE

### Collection

**Sample Tech:** DYNES, WILLIAM J

**Sample Date:** 05/29/14 07:25

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

**Tritium Req:** No

**Sample Size/Volume:** 1816 GRAMS

**Instructions:**

**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:** 3" (in.)

**Equip ID:**

**Stored By:** ,

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

**Sample Loc:**

**Other:**

**Material Loc:**

# Health Physics Sample Records

Sample ID: 142443

Type: RLSSS
















Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140528BD 13 STAR 13-20 Dirt Sample

## Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
C_1L_marinelli_sand_	30278	1816	GR		.000		HENDERSON, JOE C	05/30/14 12:48		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments		Mod Id	Mod Date
0 K-40	NT	9.97E-6	1.323E-6		85.045%	40				
0 TL-208	NT	2.618E-7	8.05E-8		2.233%	208				
0 PB-212	NT	3.032E-7	1.056E-7		2.586%	212				
0 BI-214	NT	4.218E-7	1.035E-7		3.598%	214				
0 PB-214	NT	7.664E-7	1.796E-7		6.537%	214				
0 BE-7	AP	6.2796E-7			0.000%	7				
0 MN-54	AP	8.8111E-8			0.000%	54				
0 MN-56	AP	9.7017E-8			0.000%	56				
0 CO-57	AP	7.4556E-8			0.000%	57				
0 CO-58	AP	9.8796E-8			0.000%	58				
0 CO-60	AP	1.0051E-7			0.000%	60				
0 SB-124	AP	7.5803E-8			0.000%	124				
0 SB-125	FP	2.5847E-7			0.000%	125				
0 CS-134	FP	7.6241E-8			0.000%	134				
0 CS-137	FP	6.2251E-8			0.000%	137				

## Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/10/14 09:59

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

## Health Physics Sample Records

Sample ID: **142443**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140528BD 13 STAR 13-20 Dirt Sample

**Review/Approve**

### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 10:00

Comments: 338 keV peak is Ac-228

### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

### Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 10:00

Comments:

```

*****
*          SONGS                      HEALTH PHYSICS REPORT          30-MAY-2014 12:45  *
*-----*
*          >>>> SAMPLE  PARAMETERS <<<<          *
*          *
* Title      : 140528BD 13 STAR 13-20 DIRT SAMPLE          *
*          *
* ID         : 30278                      Acquisition date: 30-MAY-2014 12:42:27 *
* Start Time: 30-MAY-2014 12:42:00          *
* Stop Time: 30-MAY-2014 12:42:00          Counting System   : U2GSP          *
* Quantity  : 1.81600E+03 GR              IHPS Sample Number: 142443          *
* Geometry  : C_1L_marinelli_sand_1      Analysis Library  : HP_NATURAL          *
*          Operator: JOE HENDERSON          *
*-----*
*          >>>> C #41-TP11750A  PARAMETERS <<<<          *
*          *
* Elapsed Live Time : 0 00:03:00.42      Calibration       : 29-MAY-2014 21:45  *
* Elapsed Real Time : 0 00:03:00.47      Energy Offset      : -1.13380E-01    *
* Deadtime          : 0.0%                Energy Slope       : 4.99622E-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	76.90	26	50	1.42	154.15	148	10	56.7	2.28E+00	BI-214 PB-212 PB-214
1	238.58	33	36	1.03	477.73	475	8	34.8	3.87E+00	PB-212
1	295.14	32	3	1.49	590.91	585	13	23.4	1.57E+00	PB-214
1	338.50	12	6	1.33	677.69	673	8	43.0	1.13E+00	
1	351.98	52	7	1.69	704.68	700	11	17.5	8.86E-01	PB-214
1	583.44	21	8	1.10	1167.85	1162	9	30.7	3.06E-01	TL-208
1	609.17	24	5	1.31	1219.34	1214	9	24.5	2.74E-01	BI-214
1	1460.60	72	5	2.16	2922.78	2918	10	13.3	1.40E+00	K-40

Summary of Nuclide Activity  
Sample ID : 30278

Page : 2  
Acquisition date : 30-MAY-2014 12:42:27

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	9.970E-06	9.970E-06	1.323E-06	13.27	A
TL-208	3.05M	1.53	1.710E-07	2.618E-07	0.805E-07	30.74	A
PB-212	10.64H	1.00	3.026E-07	3.032E-07	1.056E-07	34.82	A
BI-214	19.90M	1.07	3.941E-07	4.218E-07	1.035E-07	24.54	A
PB-214	26.80M	1.05	7.287E-07	7.664E-07	1.796E-07	23.44	A
Total Activity :			1.157E-05	1.172E-05			

Grand Total Activity : 1.157E-05 1.172E-05

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

## Unidentified Energy Lines

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Sample ID : 30278

Acquisition date : 30-MAY-2014 12:42:27

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	338.50	12	6	1.33	677.69	673	8	6.69E-02	43.0	1.72E+00	T

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30278

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Acquisition date : 30-MAY-2014 12:42:27

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	72	10.67*	5.560E-01	9.970E-06	9.970E-06	13.27
TL-208	72.80	-----	2.14	1.486E+00	-----	Line Not Found	-----
	74.97	-----	3.60	1.577E+00	-----	Line Not Found	-----
	84.79	-----	1.27	1.917E+00	-----	Line Not Found	-----
	252.45	-----	0.80	2.004E+00	-----	Line Not Found	-----
	277.28	-----	6.80	1.917E+00	-----	Line Not Found	-----
	510.61	-----	21.60	1.298E+00	-----	Line Not Found	-----
	583.02	21	86.00*	1.157E+00	1.710E-07	2.618E-07	30.74
	763.06	-----	1.64	8.934E-01	-----	Line Not Found	-----
	860.30	-----	12.00	7.922E-01	-----	Line Not Found	-----
PB-212	74.81	-----	10.50	1.570E+00	-----	Line Not Found	-----
	77.11	26	17.70	1.653E+00	7.259E-07	7.275E-07	56.69
	87.19	-----	6.27	1.983E+00	-----	Line Not Found	-----
	90.13	-----	1.86	2.055E+00	-----	Line Not Found	-----
	115.12	-----	0.59	2.376E+00	-----	Line Not Found	-----
	238.58	33	43.60*	2.055E+00	3.026E-07	3.032E-07	34.82
	300.03	-----	3.34	1.843E+00	-----	Line Not Found	-----
BI-214	76.86	26	0.58	1.653E+00	2.215E-05	2.371E-05	56.69
	79.29	-----	0.97	1.741E+00	-----	Line Not Found	-----
	609.31	24	46.10*	1.112E+00	3.941E-07	4.218E-07	24.54
	665.44	-----	1.56	1.023E+00	-----	Line Not Found	-----
	768.35	-----	4.88	8.873E-01	-----	Line Not Found	-----
	806.16	-----	1.23	8.454E-01	-----	Line Not Found	-----
	934.04	-----	3.16	7.310E-01	-----	Line Not Found	-----
	1120.27	-----	15.00	6.242E-01	-----	Line Not Found	-----
	1155.18	-----	1.69	6.105E-01	-----	Line Not Found	-----
	1238.11	-----	5.92	5.846E-01	-----	Line Not Found	-----
	1280.95	-----	1.47	5.747E-01	-----	Line Not Found	-----
	1377.66	-----	4.02	5.602E-01	-----	Line Not Found	-----
	1385.30	-----	0.78	5.595E-01	-----	Line Not Found	-----
	1401.48	-----	1.39	5.583E-01	-----	Line Not Found	-----
	1407.97	-----	2.48	5.578E-01	-----	Line Not Found	-----
	1509.22	-----	2.19	5.568E-01	-----	Line Not Found	-----
	1583.22	-----	0.72	5.628E-01	-----	Line Not Found	-----
	1661.26	-----	1.15	5.753E-01	-----	Line Not Found	-----
	1729.58	-----	3.05	5.918E-01	-----	Line Not Found	-----
	1764.49	-----	15.90	6.023E-01	-----	Line Not Found	-----
	1847.41	-----	2.12	6.331E-01	-----	Line Not Found	-----
PB-214	53.17	-----	1.10	5.203E-01	-----	Line Not Found	-----
	74.81	-----	6.52	1.570E+00	-----	Line Not Found	-----
	77.11	26	11.00	1.653E+00	1.168E-06	1.229E-06	56.69
	87.19	-----	3.88	1.983E+00	-----	Line Not Found	-----
	90.13	-----	1.15	2.055E+00	-----	Line Not Found	-----
	241.92	-----	7.46	2.043E+00	-----	Line Not Found	-----
	258.94	-----	0.55	1.981E+00	-----	Line Not Found	-----
	295.09	32	19.20*	1.858E+00	7.287E-07	7.664E-07	23.44
	351.87	52	37.10	1.686E+00	6.868E-07	7.223E-07	17.46
	785.83	-----	1.09	8.674E-01	-----	Line Not Found	-----
	839.00	-----	0.59	8.122E-01	-----	Line Not Found	-----



Nuclide Line Activity Report (continued)  
Sample ID : 30278

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Flag: "\*" = Keyline

Minimum Detectable Activity Report  
Sample ID : 30278

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Acquisition date : 30-MAY-2014 12:42:27

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	3.	477.61	6.2796E-07
MN-54	2.	834.83	8.8111E-08
MN-56	2.	846.81	9.7017E-08
CO-57	12.	122.06	7.4556E-08
CO-58	2.	810.79	9.8796E-08
CO-60	1.	1173.24	1.0051E-07
SB-124	3.	602.73	7.5803E-08
SB-125	6.	427.88	2.5847E-07
CS-134	3.	604.71	7.6241E-08
CS-137	1.	661.66	6.2251E-08