

# Health Physics Sample Records

Sample ID: 142447

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140528BD 17 STAR 17-20 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 08:48

Comments:

## Origin

Mat. Size/Volume: 2098 GRAMS

Docmnt/MO/Act #:

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

Description: STAR 17 SOIL SAMPLE

## Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 05/29/14 07:53

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 2098 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

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Status: APPROVED

Rasterized:

Description: 140528BD 17 STAR 17-20 Dirt Sample

### Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
B_1L_marinelli_sand_	30285	2098	GR		.000		HENDERSON, JOE C	05/30/14 13:28		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments	Mod Id	Mod Date	
0 K-40	NT	0.00001485	1.55E-6	<input type="checkbox"/>	86.040%	40				
0 TL-208	NT	3.279E-7	9.16E-8	<input type="checkbox"/>	1.900%	208				
0 PB-212	NT	9.445E-7	1.158E-7	<input type="checkbox"/>	5.472%	212				
0 BI-214	NT	5.281E-7	1.487E-7	<input type="checkbox"/>	3.060%	214				
0 PB-214	NT	6.09E-7	1.997E-7	<input type="checkbox"/>	3.528%	214				
0 BE-7	AP	1.0454E-6		<input checked="" type="checkbox"/>	0.000%	7				
0 MN-54	AP	1.2331E-7		<input checked="" type="checkbox"/>	0.000%	54				
0 MN-56	AP	9.3699E-8		<input checked="" type="checkbox"/>	0.000%	56				
0 CO-57	AP	8.1222E-8		<input checked="" type="checkbox"/>	0.000%	57				
0 CO-58	AP	1.2825E-7		<input checked="" type="checkbox"/>	0.000%	58				
0 CO-60	AP	1.2018E-7		<input checked="" type="checkbox"/>	0.000%	60				
0 SB-124	AP	1.2073E-7		<input checked="" type="checkbox"/>	0.000%	124				
0 SB-125	FP	1.7798E-7		<input checked="" type="checkbox"/>	0.000%	125				
0 CS-134	FP	1.1866E-7		<input checked="" type="checkbox"/>	0.000%	134				
0 CS-137	FP	1.6254E-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 10:08

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

## Health Physics Sample Records

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Sample ID: 142447

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140528BD 17 STAR 17-20 Dirt Sample

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**Review/Approve**

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### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 10:09

Comments: The peak at 338 keV is due to Ac-228

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### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

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### Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 10:09

Comments:

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*****
*          SONGS                      HEALTH PHYSICS REPORT          30-MAY-2014 13:17  *
*-----*
*                >>>> SAMPLE PARAMETERS <<<<<                *
*
* Title       : 140528BD 17 STAR 17-20 DIRT SAMPLE                *
*
* ID          : 30285                      Acquisition date: 30-MAY-2014 13:14:32 *
* Start Time : 30-MAY-2014 13:14:00                    *
* Stop Time  : 30-MAY-2014 13:14:00                    Counting System   : U2GSP      *
* Quantity   : 2.09800E+03 GR                      IHPS Sample Number: 142447 *
* Geometry   : B_1L_marinelli_sand_1                Analysis Library   : HP_NATURAL *
* Operator   : JOE HENDERSON                        *
*-----*
*                >>>> B #42-TP11663A PARAMETERS <<<<<                *
*
* Elapsed Live Time : 0 00:03:00.40 Calibration       : 29-MAY-2014 21:44 *
* Elapsed Real Time  : 0 00:03:00.45 Energy Offset    : -1.81343E-02 *
* Deadtime           : 0.0%                          Energy Slope      : 4.99764E-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	238.74	104	20	1.34	477.75	472	24	12.3	1.40E+00	PB-212
1	241.97	20	20	1.38	484.21	472	24	45.0		PB-214
1	295.43	25	17	1.72	591.18	589	7	32.8	2.00E+00	PB-214
1	338.38	33	14	2.61	677.11	672	11	27.4	2.07E+00	
1	351.91	45	4	1.85	704.21	700	10	17.5	7.88E-01	PB-214
1	583.11	23	5	1.79	1166.84	1161	11	27.9	1.09E+00	TL-208
1	609.50	28	12	1.13	1219.65	1214	9	28.2	3.48E-01	BI-214
1	1460.68	93	0	1.89	2922.92	2915	13	10.4	6.74E-01	K-40

Summary of Nuclide Activity  
Sample ID : 30285

Page : 2  
Acquisition date : 30-MAY-2014 13:14:32

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	1.485E-05	1.485E-05	0.155E-05	10.43	A
TL-208	3.05M	1.56	2.098E-07	3.279E-07	0.916E-07	27.92	A
PB-212	10.64H	1.00	9.424E-07	9.445E-07	1.158E-07	12.26	A
BI-214	19.90M	1.07	4.919E-07	5.281E-07	1.487E-07	28.15	A
PB-214	26.80M	1.05	5.777E-07	6.090E-07	1.997E-07	32.78	A
Total Activity :			1.707E-05	1.726E-05			

Grand Total Activity : 1.707E-05 1.726E-05

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

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

Unidentified Energy Lines  
Sample ID : 30285

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Acquisition date : 30-MAY-2014 13:14:32

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	338.38	33	14	2.61	677.11	672	11	1.83E-01	27.4	1.44E+00	T

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30285

Page : 4  
Acquisition date : 30-MAY-2014 13:14:32

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	93	10.67*	4.211E-01	1.485E-05	1.485E-05	10.43
TL-208	72.80	-----	2.14	1.070E+00	-----	Line Not Found	-----
	74.97	-----	3.60	1.156E+00	-----	Line Not Found	-----
	84.79	-----	1.27	1.506E+00	-----	Line Not Found	-----
	252.45	-----	0.80	1.745E+00	-----	Line Not Found	-----
	277.28	-----	6.80	1.645E+00	-----	Line Not Found	-----
	510.61	-----	21.60	1.035E+00	-----	Line Not Found	-----
	583.02	23	86.00*	9.198E-01	2.098E-07	3.279E-07	27.92
	763.06	-----	1.64	7.126E-01	-----	Line Not Found	-----
	860.30	-----	12.00	6.341E-01	-----	Line Not Found	-----
PB-212	74.81	-----	10.50	1.150E+00	-----	Line Not Found	-----
	77.11	-----	17.70	1.239E+00	-----	Line Not Found	-----
	87.19	-----	6.27	1.579E+00	-----	Line Not Found	-----
	90.13	-----	1.86	1.662E+00	-----	Line Not Found	-----
	115.12	-----	0.59	2.085E+00	-----	Line Not Found	-----
	238.58	104	43.60*	1.804E+00	9.424E-07	9.445E-07	12.26
	300.03	-----	3.34	1.562E+00	-----	Line Not Found	-----
BI-214	76.86	-----	0.58	1.229E+00	-----	Line Not Found	-----
	79.29	-----	0.97	1.320E+00	-----	Line Not Found	-----
	609.31	28	46.10*	8.830E-01	4.919E-07	5.281E-07	28.15
	665.44	-----	1.56	8.131E-01	-----	Line Not Found	-----
	768.35	-----	4.88	7.078E-01	-----	Line Not Found	-----
	806.16	-----	1.23	6.754E-01	-----	Line Not Found	-----
	934.04	-----	3.16	5.861E-01	-----	Line Not Found	-----
	1120.27	-----	15.00	4.982E-01	-----	Line Not Found	-----
	1155.18	-----	1.69	4.860E-01	-----	Line Not Found	-----
	1238.11	-----	5.92	4.615E-01	-----	Line Not Found	-----
	1280.95	-----	1.47	4.510E-01	-----	Line Not Found	-----
	1377.66	-----	4.02	4.323E-01	-----	Line Not Found	-----
	1385.30	-----	0.78	4.311E-01	-----	Line Not Found	-----
	1401.48	-----	1.39	4.287E-01	-----	Line Not Found	-----
	1407.97	-----	2.48	4.277E-01	-----	Line Not Found	-----
	1509.22	-----	2.19	4.165E-01	-----	Line Not Found	-----
	1583.22	-----	0.72	4.120E-01	-----	Line Not Found	-----
	1661.26	-----	1.15	4.103E-01	-----	Line Not Found	-----
	1729.58	-----	3.05	4.114E-01	-----	Line Not Found	-----
	1764.49	-----	15.90	4.128E-01	-----	Line Not Found	-----
	1847.41	-----	2.12	4.187E-01	-----	Line Not Found	-----
PB-214	53.17	-----	1.10	2.929E-01	-----	Line Not Found	-----
	74.81	-----	6.52	1.150E+00	-----	Line Not Found	-----
	77.11	-----	11.00	1.239E+00	-----	Line Not Found	-----
	87.19	-----	3.88	1.579E+00	-----	Line Not Found	-----
	90.13	-----	1.15	1.662E+00	-----	Line Not Found	-----
	241.92	20	7.46	1.790E+00	1.055E-06	1.113E-06	45.03
	258.94	-----	0.55	1.718E+00	-----	Line Not Found	-----
	295.09	25	19.20*	1.578E+00	5.777E-07	6.090E-07	32.78
	351.87	45	37.10	1.395E+00	6.272E-07	6.612E-07	17.53
	785.83	-----	1.09	6.925E-01	-----	Line Not Found	-----
	839.00	-----	0.59	6.497E-01	-----	Line Not Found	-----



Nuclide Line Activity Report (continued)  
Sample ID : 30285

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Acquisition date : 30-MAY-2014 13:14:32

Flag: "\*" = Keyline

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	9.	477.61	1.0454E-06
MN-54	3.	834.83	1.2331E-07
MN-56	1.	846.81	9.3699E-08
CO-57	15.	122.06	8.1222E-08
CO-58	4.	810.79	1.2825E-07
CO-60	1.	1332.50	1.2018E-07
SB-124	7.	602.73	1.2073E-07
SB-125	2.	427.88	1.7798E-07
CS-134	6.	604.71	1.1866E-07
CS-137	8.	661.66	1.6254E-07