

## Health Physics Sample Records

Sample ID: **142445**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: ☐

Description: 140528BD 15 STAR 15-20 Dirt Sample

### 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: COUNT TO MDA

Reviewed: DYNES, WILLIAM J

Date: 05/30/14 08:35

Comments:

### Origin

Mat. Size/Volume: 2097 GRAMS

Docmnt/MO/Act #:

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

Description: STAR 15 SOIL SAMPLE

### Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 05/29/14 07:40

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 2097 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: 142445

Type: RLSSS

















Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140528BD 15 STAR 15-20 Dirt Sample

## Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
C_1L_marinelli_sand_	30304	2097	GR		.000		PARK, MICHAEL C	06/02/14 13:43		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments		Mod Id	Mod Date
0 K-40	NT	9.936E-6	1.13E-6		6.939%	40				
0 TL-208	NT	2.805E-7	7.06E-8		0.196%	208				
0 PB-212	NT	5.267E-7	1.066E-7		0.368%	212				
0 BI-214	NT	5.03E-7	8.82E-8		0.351%	214				
0 PB-214	NT	3.503E-7	1.742E-7		0.245%	214				
0 RN-222	NT	0.0001316	0.000046		91.902%	222				
0 BE-7	AP	6.7213E-7			0.000%	7				
0 MN-54	AP	1.1492E-7			0.000%	54				
0 MN-56	AP	9.7587E-8			0.000%	56				
0 CO-57	AP	7.1856E-8			0.000%	57				
0 CO-58	AP	6.2813E-8			0.000%	58				
0 CO-60	AP	4.9163E-8			0.000%	60				
0 SB-124	AP	6.4602E-8			0.000%	124				
0 SB-125	FP	4.4232E-8			0.000%	125				
0 CS-134	FP	2.6403E-8			0.000%	134				
0 CS-137	FP	1.1282E-7			0.000%	137				

## Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/10/14 10:05

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:


## Health Physics Sample Records

Sample ID: 142445

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140528BD 15 STAR 15-20 Dirt Sample

Review/Approve

### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 10:06

Comments:

### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

### Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 10:06

Comments:

```

*****
*          SONGS                      HEALTH PHYSICS REPORT          2-JUN-2014 13:32  *
*-----*
*          >>>> SAMPLE  PARAMETERS <<<<          *
*-----*
* Title      : 140528BD 15 STAR 15-20 DIRT SAMPLE          *
* ID         : 30304                      Acquisition date: 2-JUN-2014 13:29:50. *
* Start Time: 2-JUN-2014 13:29:00.                      *
* Stop Time: 2-JUN-2014 13:29:00.                      Counting System : U2GSP *
* Quantity  : 2.09700E+03 GR                      IHPS Sample Number: 142445 *
* Geometry  : C_1L_marinelli_sand_1                Analysis Library : HP_NATURAL *
*                      Operator: MICHAEL PARK          *
*-----*
*          >>>> C #41-TP11750A  PARAMETERS <<<<          *
*-----*
* Elapsed Live Time : 0 00:03:00.39 Calibration : 1-JUN-2014 20:29: *
* Elapsed Real Time : 0 00:03:00.45 Energy Offset : -1.46898E-01 *
* Deadtime          : 0.0% Energy Slope : 4.99817E-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	76.97	57	53	3.01	154.29	148	10	27.5	4.84E+00	BI-214 PB-212 PB-214
1	238.63	66	34	1.33	477.70	473	9	20.2	1.88E+00	PB-212
1	295.33	16	18	1.00	591.14	586	8	49.7	6.09E-01	PB-214
1	351.78	44	2	1.24	704.08	700	8	16.8	2.44E+00	PB-214
1	510.59	17	6	2.29	1021.78	1015	11	34.9	1.48E-01	RN-222 TL-208
1	583.00	23	3	1.34	1166.62	1161	11	25.2	5.09E-01	TL-208
1	609.17	33	0	1.41	1218.97	1214	10	17.5	2.22E-01	BI-214
1	1460.49	82	0	1.66	2921.71	2916	11	11.4	1.19E+00	K-40

Summary of Nuclide Activity  
Sample ID : 30304

Page : 2  
Acquisition date : 2-JUN-2014 13:29:50

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	9.936E-06	9.936E-06	1.130E-06	11.37	A
TL-208	3.05M	1.67	1.676E-07	2.805E-07	0.706E-07	25.17	A
PB-212	10.64H	1.00	5.254E-07	5.267E-07	1.066E-07	20.25	A
BI-214	19.90M	1.08	4.636E-07	5.030E-07	0.882E-07	17.53	A
PB-214	26.80M	1.06	3.297E-07	3.503E-07	1.742E-07	49.74	A
RN-222	3.83D	1.00	1.315E-04	1.316E-04	0.460E-04	34.94	A
Total Activity :			1.429E-04	1.431E-04			

Grand Total Activity : 1.429E-04 1.431E-04

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

Unidentified Energy Lines  
Sample ID : 30304

Page : 3  
Acquisition date : 2-JUN-2014 13:29:50

None

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30304

Page : 4  
Acquisition date : 2-JUN-2014 13:29:50

No interference correction performed

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected Decay Corr		1-Sigma
					uCi/GR	uCi/GR	%Error
K-40	1460.83	82	10.67*	5.560E-01	9.936E-06	9.936E-06	11.37
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	17	21.60	1.298E+00	4.262E-07	7.133E-07	34.94
PB-212	583.02	23	86.00*	1.158E+00	1.676E-07	2.805E-07	25.17
	763.06	-----	1.64	8.934E-01	-----	Line Not Found	-----
	860.30	-----	12.00	7.922E-01	-----	Line Not Found	-----
	74.81	-----	10.50	1.570E+00	-----	Line Not Found	-----
	77.11	57	17.70	1.656E+00	1.388E-06	1.392E-06	27.52
	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	66	43.60*	2.055E+00	5.254E-07	5.267E-07	20.25
	300.03	-----	3.34	1.843E+00	-----	Line Not Found	-----
BI-214	76.86	57	0.58	1.656E+00	4.237E-05	4.597E-05	27.52
	79.29	-----	0.97	1.741E+00	-----	Line Not Found	-----
	609.31	33	46.10*	1.112E+00	4.636E-07	5.030E-07	17.53
	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	-----
PB-214	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	-----
	53.17	-----	1.10	5.203E-01	-----	Line Not Found	-----
	74.81	-----	6.52	1.570E+00	-----	Line Not Found	-----
	77.11	57	11.00	1.656E+00	2.234E-06	2.374E-06	27.52
	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	16	19.20*	1.858E+00	3.297E-07	3.503E-07	49.74
	351.87	44	37.10	1.686E+00	5.082E-07	5.400E-07	16.82
	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 : 30304

Page : 6  
Acquisition date : 2-JUN-2014 13:29:50

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/GR	Decay Corr uCi/GR	1-Sigma %Error
RN-222	510.00	17	0.07*	1.298E+00	1.315E-04	1.316E-04	34.94

Flag: "\*" = Keyline

Minimum Detectable Activity Report  
Sample ID : 30304

Page : 7  
Acquisition date : 2-JUN-2014 13:29:50

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	5.	477.61	6.7213E-07
MN-54	5.	834.83	1.1492E-07
MN-56	3.	846.81	9.7587E-08
CO-57	15.	122.06	7.1856E-08
CO-58	1.	810.79	6.2813E-08
CO-60	0.	1173.24	4.9163E-08
SB-124	2.	602.73	6.4602E-08
SB-125	0.	427.88	4.4232E-08
CS-134	0.	795.87	2.6403E-08
CS-137	6.	661.66	1.1282E-07