

Health Physics Sample Records

Sample ID: 142464

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140529BD 01 STARYARD SURVEY PT 36

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: 06/04/14 07:57

Comments:

Origin

Mat. Size/Volume: 2286 GRAMS

Docmnt/MO/Act #:

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

Description: STARYARD SURVEY PT 21

Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 05/30/14 11:55

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 2286 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

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Description: 140529BD 01 STARYARD SURVEY PT 36

Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
C_1L_marinelli_sand_	30359	2286	GR		.000		PARK, MICHAEL C	06/05/14 15:13		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments	Mod Id	Mod Date	
0 K-40	NT	8.774E-6	9.82E-7	┌	64.698%	40				
0 TL-208	NT	2.493E-7	7.8E-8	┌	1.838%	208				
0 PB-212	NT	3.95E-7	7.64E-8	┌	2.913%	212				
0 BI-214	NT	4.87E-7	8.17E-8	┌	3.591%	214				
0 PB-214	NT	6.0E-7	1.79E-7	┌	4.424%	214				
0 RA-226	NT	2.375E-6	1.006E-6	┌	17.513%	226				
0 AC-228	NT	5.342E-7	1.91E-7	┌	3.939%	228				
0 U-235	NT	1.47E-7	6.23E-8	┌	1.084%	235				
0 BE-7	AP	1.2455E-7		┐	0.000%	7				
0 MN-54	AP	7.8785E-8		┐	0.000%	54				
0 MN-56	AP	1.0616E-7		┐	0.000%	56				
0 CO-57	AP	7.1802E-8		┐	0.000%	57				
0 CO-58	AP	6.9665E-8		┐	0.000%	58				
0 CO-60	AP	1.0077E-7		┐	0.000%	60				
0 SB-124	AP	6.4633E-8		┐	0.000%	124				
0 SB-125	FP	1.8496E-7		┐	0.000%	125				
0 CS-134	FP	5.9089E-8		┐	0.000%	134				
0 CS-137	FP	9.4095E-8		┐	0.000%	137				

Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/10/14 13:33

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

Health Physics Sample Records

Sample ID: 142464

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140529BD 01 STARYARD SURVEY PT 36

Review/Approve

HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 13:33

Comments: U-235 is likely mis-ID'd off the Ra-226 energy peak

Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 13:33

Comments:

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*****
*          SONGS                      HEALTH PHYSICS REPORT          5-JUN-2014 15:03  *
*-----*
*                >>>> SAMPLE PARAMETERS <<<<<                *
*-----*
* Title       : 140529BD 01 STARYARD SURVEY PT 36                *
* ID          : 30359                      Acquisition date: 5-JUN-2014 15:00:18. *
* Start Time : 5-JUN-2014 15:00:00.                    Counting System : U2GSP      *
* Stop Time  : 5-JUN-2014 15:00:00.                    IHPS Sample Number: 142464 *
* Quantity   : 2.28600E+03 GR                          Analysis Library : HP_NATURAL *
* Geometry   : C_1L_marinelli_sand_1                    Operator: MICHAEL PARK      *
*-----*
*                >>>> C #41-TP11750A PARAMETERS <<<<<                *
*-----*
* Elapsed Live Time : 0 00:03:00.41 Calibration : 5-JUN-2014 08:14: *
* Elapsed Real Time : 0 00:03:00.45 Energy Offset : -1.39807E-01 *
* Deadtime          : 0.0% Energy Slope : 4.99820E-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	76.94	67	48	2.88	154.21	151	10	23.0	4.77E+00	BI-214 PB-212 PB-214
1	186.12	27	27	2.56	372.65	367	11	42.4	1.42E+00	U-235 RA-226
1	238.66	54	17	1.12	477.75	474	7	19.3	3.44E+00	PB-212
1	295.31	31	15	1.17	591.07	585	10	29.8	1.26E+00	PB-214
1	338.21	20	12	2.37	676.90	672	10	37.5	1.71E+00	AC-228
1	351.88	43	9	1.30	704.25	700	11	20.1	5.15E-01	PB-214
1	583.22	26	9	1.50	1167.02	1161	12	31.3	9.04E-01	TL-208
1	609.59	36	0	2.11	1219.77	1215	10	16.8	4.67E-01	BI-214
1	911.27	18	7	2.18	1823.16	1818	10	35.7	8.75E-01	AC-228
1	1460.85	79	0	2.02	2922.22	2917	11	11.2	2.28E-01	K-40

Summary of Nuclide Activity
Sample ID : 30359

Page : 2
Acquisition date : 5-JUN-2014 15:00:18

Total number of lines in spectrum 10
Number of unidentified lines 0
Number of lines tentatively identified by NID 10 100.00%

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	8.774E-06	8.774E-06	0.982E-06	11.19	A
TL-208	3.05M	1.48	1.684E-07	2.493E-07	0.780E-07	31.28	A
PB-212	10.64H	1.00	3.942E-07	3.950E-07	0.764E-07	19.34	A
BI-214	19.90M	1.06	4.575E-07	4.870E-07	0.817E-07	16.78	A
PB-214	26.80M	1.05	5.727E-07	6.000E-07	1.790E-07	29.84	A
RA-226	1600.00Y	1.00	2.375E-06	2.375E-06	1.006E-06	42.36	A
AC-228	6.13H	1.00	5.324E-07	5.342E-07	1.910E-07	35.75	A
U-235	7.04E+08Y	1.00	1.470E-07	1.470E-07	0.623E-07	42.36	A
			-----	-----			
		Total Activity :	1.342E-05	1.356E-05			

Grand Total Activity : 1.342E-05 1.356E-05

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

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

Unidentified Energy Lines
Sample ID : 30359

Page : 3
Acquisition date : 5-JUN-2014 15:00:18

None

Flags: "T" = Tentatively associated

Interference Report
Sample ID : 30359

Page : 4
Acquisition date : 5-JUN-2014 15:00:18

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	79	10.67*	5.560E-01	8.774E-06	8.774E-06	11.19
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	26	86.00*	1.157E+00	1.684E-07	2.493E-07	31.28
PB-212	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	67	17.70	1.654E+00	1.499E-06	1.502E-06	23.02
	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	-----
BI-214	238.58	54	43.60*	2.055E+00	3.942E-07	3.950E-07	19.34
	300.03	-----	3.34	1.843E+00	-----	Line Not Found	-----
	76.86	67	0.58	1.654E+00	4.576E-05	4.872E-05	23.02
	79.29	-----	0.97	1.741E+00	-----	Line Not Found	-----
	609.31	36	46.10*	1.111E+00	4.575E-07	4.870E-07	16.78
	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	-----
PB-214	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	67	11.00	1.654E+00	2.413E-06	2.528E-06	23.02
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	31	19.20*	1.858E+00	5.727E-07	6.000E-07	29.84	
351.87	43	37.10	1.686E+00	4.554E-07	4.771E-07	20.15	
785.83	-----	1.09	8.674E-01	-----	Line Not Found	-----	
839.00	-----	0.59	8.122E-01	-----	Line Not Found	-----	

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/GR	Decay Corr uCi/GR	1-Sigma %Error
RA-226	81.07	-----	0.18	1.802E+00	-----	Line Not Found	-----
	186.11	27	3.28*	2.261E+00	2.375E-06	2.375E-06	42.36
AC-228	89.96	-----	3.40	2.051E+00	-----	Line Not Found	-----
	93.35	-----	5.60	2.124E+00	-----	Line Not Found	-----
	99.55	-----	1.30	2.229E+00	-----	Line Not Found	-----
	105.36	-----	2.00	2.301E+00	-----	Line Not Found	-----
	108.99	-----	0.67	2.335E+00	-----	Line Not Found	-----
	129.03	-----	2.90	2.414E+00	-----	Line Not Found	-----
	153.89	-----	0.84	2.377E+00	-----	Line Not Found	-----
	209.39	-----	4.10	2.168E+00	-----	Line Not Found	-----
	216.24	-----	0.80	2.141E+00	-----	Line Not Found	-----
	270.26	-----	3.80	1.941E+00	-----	Line Not Found	-----
	328.07	-----	3.50	1.756E+00	-----	Line Not Found	-----
	338.42	20	12.40	1.726E+00	6.124E-07	6.145E-07	37.51
	340.94	-----	0.52	1.718E+00	-----	Line Not Found	-----
	409.62	-----	2.20	1.531E+00	-----	Line Not Found	-----
	463.10	-----	4.60	1.401E+00	-----	Line Not Found	-----
	562.65	-----	1.01	1.195E+00	-----	Line Not Found	-----
	581.52	-----	3.00	1.160E+00	-----	Line Not Found	-----
	726.63	-----	0.87	9.382E-01	-----	Line Not Found	-----
	755.28	-----	1.32	9.027E-01	-----	Line Not Found	-----
	772.28	-----	1.09	8.827E-01	-----	Line Not Found	-----
	782.12	-----	0.59	8.716E-01	-----	Line Not Found	-----
	794.79	-----	4.60	8.576E-01	-----	Line Not Found	-----
	830.59	-----	0.63	8.205E-01	-----	Line Not Found	-----
	835.60	-----	1.71	8.155E-01	-----	Line Not Found	-----
	840.44	-----	0.94	8.108E-01	-----	Line Not Found	-----
	904.29	-----	0.89	7.542E-01	-----	Line Not Found	-----
	911.16	18	29.00*	7.486E-01	5.324E-07	5.342E-07	35.75
	964.64	-----	5.80	7.091E-01	-----	Line Not Found	-----
	968.97	-----	17.40	7.061E-01	-----	Line Not Found	-----
	1246.60	-----	0.57	5.825E-01	-----	Line Not Found	-----
	1459.19	-----	1.06	5.560E-01	-----	Line Not Found	-----
	1496.00	-----	1.05	5.563E-01	-----	Line Not Found	-----
	1501.44	-----	0.58	5.565E-01	-----	Line Not Found	-----
	1580.30	-----	0.71	5.624E-01	-----	Line Not Found	-----
	1588.23	-----	3.60	5.634E-01	-----	Line Not Found	-----
	1630.47	-----	1.95	5.696E-01	-----	Line Not Found	-----
	1638.10	-----	0.54	5.709E-01	-----	Line Not Found	-----
U-235	89.96	-----	3.36	2.051E+00	-----	Line Not Found	-----
	93.35	-----	5.50	2.124E+00	-----	Line Not Found	-----
	105.36	-----	1.98	2.301E+00	-----	Line Not Found	-----
	109.18	-----	1.50	2.336E+00	-----	Line Not Found	-----
	143.79	-----	10.50	2.402E+00	-----	Line Not Found	-----
	163.38	-----	4.70	2.347E+00	-----	Line Not Found	-----
	185.74	27	53.00*	2.261E+00	1.470E-07	1.470E-07	42.36
	194.96	-----	0.59	2.226E+00	-----	Line Not Found	-----
	202.13	-----	1.00	2.197E+00	-----	Line Not Found	-----
	205.33	-----	4.70	2.184E+00	-----	Line Not Found	-----

Nuclide Line Activity Report (continued)
Sample ID : 30359

Page : 7
Acquisition date : 5-JUN-2014 15:00:18

Flag: "*" = Keyline

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	0.	477.61	1.2455E-07
MN-54	2.	834.83	7.8785E-08
MN-56	0.	1810.80	1.0616E-07
CO-57	18.	122.06	7.1802E-08
CO-58	2.	810.79	6.9665E-08
CO-60	2.	1173.24	1.0077E-07
SB-124	0.	1690.98	6.4633E-08
SB-125	4.	427.88	1.8496E-07
CS-134	2.	604.71	5.9089E-08
CS-137	5.	661.66	9.4095E-08