

Health Physics Sample Records

Sample ID: 142434

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: ☐

Description: 140528BD 05 STAR 5-20 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:

Reviewed: DYNES, WILLIAM J

Date: 05/29/14 11:18

Comments:

Origin

Mat. Size/Volume: 1000 ml

Docmnt/MO/Act #:

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

Description: STAR 05 SOIL SAMPLE

Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 05/28/14 12:56

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 1927 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: 142434

Type: RLSSS

















Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140528BD 05 STAR 5-20 Dirt Sample

Analysis

| Geometry | MCA ID | Quant. | Units | Method | FP/AP | Lab | Analysis By | Date | Mod ID | Mod Date |
|----------------------|--------|-----------|------------------|--|----------|-----------|--------------------|----------------|--------|----------|
| A_1L_marinelli_sand_ | 30271 | 1927 | GR | | .000 | | ABERNATHY, AGNES B | 05/29/14 16:18 | | |
| Isotope | Mode | Activity | Activity Uncert. | LLD/MDA | % Abund. | Atom. No. | Comments | | Mod Id | Mod Date |
| 0 K-40 | NT | 9.268E-6 | 1.138E-6 |  | 84.298% | 40 | | | | |
| 0 TL-208 | NT | 1.932E-7 | 6.36E-8 |  | 1.757% | 208 | | | | |
| 0 PB-212 | NT | 3.617E-7 | 9.39E-8 |  | 3.290% | 212 | | | | |
| 0 BI-214 | NT | 3.224E-7 | 7.17E-8 |  | 2.932% | 214 | | | | |
| 0 PB-214 | NT | 3.444E-7 | 1.12E-7 |  | 3.133% | 214 | | | | |
| 0 AC-228 | NT | 5.046E-7 | 1.508E-7 |  | 4.590% | 228 | | | | |
| 0 BE-7 | AP | 7.1888E-7 | |  | 0.000% | 7 | | | | |
| 0 MN-54 | AP | 9.0128E-8 | |  | 0.000% | 54 | | | | |
| 0 MN-56 | AP | 1.2039E-7 | |  | 0.000% | 56 | | | | |
| 0 CO-57 | AP | 8.1742E-8 | |  | 0.000% | 57 | | | | |
| 0 CO-58 | AP | 6.9726E-8 | |  | 0.000% | 58 | | | | |
| 0 CO-60 | AP | 7.4753E-8 | |  | 0.000% | 60 | | | | |
| 0 SB-124 | AP | 7.3167E-8 | |  | 0.000% | 124 | | | | |
| 0 SB-125 | FP | 1.3753E-7 | |  | 0.000% | 125 | | | | |
| 0 CS-134 | FP | 6.769E-8 | |  | 0.000% | 134 | | | | |
| 0 CS-137 | FP | 1.2057E-7 | |  | 0.000% | 137 | | | | |

Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/10/14 09:36

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:


Health Physics Sample Records

Sample ID: **142434**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140528BD 05 STAR 5-20 Dirt Sample

Review/Approve

HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 09:36

Comments:

Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 09:36

Comments:

```

*****
*          SONGS                      HEALTH PHYSICS REPORT          29-MAY-2014 16:13      *
*-----*
*                               >>>> SAMPLE  PARAMETERS <<<<<                               *
*-----*
* Title       : 140528BD 05 STAR 5-20 DIRT SAMPLE                               *
* ID          : 30271                               Acquisition date: 29-MAY-2014 16:10:08 *
* Start Time: 29-MAY-2014 16:10:00                               *
* Stop  Time: 29-MAY-2014 16:10:00           Counting System   : U2GSP                *
* Quantity  : 1.92700E+03 GR           IHPS Sample Number: 142434                *
* Geometry  : A_1L_marinelli_sand_1     Analysis Library  : HP_NATURAL            *
*                               Operator: AGNES ABERNATHY                               *
*-----*
*                               >>>> A #41-TP11679B  PARAMETERS <<<<<                               *
*-----*
* Elapsed Live Time   : 0 00:03:00.47   Calibration          : 28-MAY-2014 21:10      *
* Elapsed Real Time   : 0 00:03:00.53   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 | 77.26 | 25 | 20 | 1.25 | 154.16 | 152 | 6 | 35.3 | 5.46E+00 | BI-214 PB-212 PB-214 |
| 1 | 238.79 | 42 | 23 | 1.54 | 477.55 | 474 | 9 | 25.9 | 6.66E+00 | PB-212 |
| 1 | 295.19 | 15 | 3 | 1.39 | 590.48 | 587 | 7 | 32.5 | 1.93E+00 | PB-214 |
| 1 | 351.72 | 33 | 0 | 1.84 | 703.66 | 698 | 10 | 18.9 | 2.12E+00 | PB-214 |
| 1 | 583.52 | 17 | 5 | 1.59 | 1167.73 | 1162 | 9 | 32.9 | 8.44E-01 | TL-208 |
| 1 | 609.38 | 20 | 0 | 2.46 | 1219.50 | 1215 | 8 | 22.3 | 1.00E+00 | BI-214 |
| 1 | 911.01 | 14 | 2 | 1.68 | 1823.40 | 1819 | 8 | 29.9 | 9.47E-02 | AC-228 |
| 1 | 1460.91 | 68 | 0 | 2.04 | 2924.38 | 2918 | 12 | 12.3 | 5.08E-01 | K-40 |

Summary of Nuclide Activity
Sample ID : 30271

Page : 2
Acquisition date : 29-MAY-2014 16:10:08

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 | 9.268E-06 | 9.268E-06 | 1.138E-06 | 12.28 | A |
| TL-208 | 3.05M | 1.42 | 1.358E-07 | 1.932E-07 | 0.636E-07 | 32.94 | A |
| PB-212 | 10.64H | 1.00 | 3.611E-07 | 3.617E-07 | 0.939E-07 | 25.95 | A |
| BI-214 | 19.90M | 1.06 | 3.047E-07 | 3.224E-07 | 0.717E-07 | 22.25 | A |
| PB-214 | 26.80M | 1.04 | 3.302E-07 | 3.444E-07 | 1.120E-07 | 32.51 | A |
| AC-228 | 6.13H | 1.00 | 5.031E-07 | 5.046E-07 | 1.508E-07 | 29.88 | A |
| Total Activity : | | | 1.090E-05 | 1.099E-05 | | | |

Grand Total Activity : 1.090E-05 1.099E-05

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

Unidentified Energy Lines
Sample ID : 30271

Page : 3
Acquisition date : 29-MAY-2014 16:10:08

None

Flags: "T" = Tentatively associated

Interference Report
Sample ID : 30271

Page : 4
Acquisition date : 29-MAY-2014 16:10:08

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 | 68 | 10.67* | 5.314E-01 | 9.268E-06 | 9.268E-06 | 12.28 |
| 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 | 17 | 86.00* | 1.127E+00 | 1.358E-07 | 1.932E-07 | 32.94 |
| | 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 | 25 | 17.70 | 1.789E+00 | 6.243E-07 | 6.254E-07 | 35.34 |
| | 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 | 42 | 43.60* | 2.081E+00 | 3.611E-07 | 3.617E-07 | 25.95 |
| | 300.03 | ----- | 3.34 | 1.834E+00 | ----- | Line Not Found | ----- |
| BI-214 | 76.86 | 25 | 0.58 | 1.789E+00 | 1.905E-05 | 2.016E-05 | 35.34 |
| | 79.29 | ----- | 0.97 | 1.869E+00 | ----- | Line Not Found | ----- |
| | 609.31 | 20 | 46.10* | 1.084E+00 | 3.047E-07 | 3.224E-07 | 22.25 |
| | 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 | 25 | 11.00 | 1.789E+00 | 1.004E-06 | 1.048E-06 | 35.34 |
| | 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 | 15 | 19.20* | 1.852E+00 | 3.302E-07 | 3.444E-07 | 32.51 |
| | 351.87 | 33 | 37.10 | 1.663E+00 | 4.110E-07 | 4.287E-07 | 18.90 |
| | 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 %Error |
|---------|---------|-------|--------|-----------|------------------------|----------------|--|-------------------|
| | | | | | uCi/GR | uCi/GR | | |
| 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 | ----- | 12.40 | 1.704E+00 | ----- | Line Not Found | | ----- |
| | 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 | 14 | 29.00* | 7.350E-01 | 5.031E-07 | 5.046E-07 | | 29.88 |
| | 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 : 30271

Page : 7
Acquisition date : 29-MAY-2014 16:10:08

| Nuclide | Bckgnd Sum | Energy (keV) | MDA (uCi/GR) |
|---------|---------------|-----------------|-----------------|
| BE-7 | 5. | 477.61 | 7.1888E-07 |
| MN-54 | 2. | 834.83 | 9.0128E-08 |
| MN-56 | 4. | 846.81 | 1.2039E-07 |
| CO-57 | 19. | 122.06 | 8.1742E-08 |
| CO-58 | 1. | 810.79 | 6.9726E-08 |
| CO-60 | 0. | 1173.24 | 7.4753E-08 |
| SB-124 | 3. | 602.73 | 7.3167E-08 |
| SB-125 | 1. | 427.88 | 1.3753E-07 |
| CS-134 | 2. | 604.71 | 6.7690E-08 |
| CS-137 | 5. | 661.66 | 1.2057E-07 |