

Hematite Decommissioning Project	Procedure: HDP-PR-FSS-701, Final Status Survey Plan Development		
		Revision: 10	Appendix P-4, Page 1 of 1

APPENDIX P-4

FSS SAMPLE & MEASUREMENT LOCATIONS & COORDINATES

Survey Area:	LSA 10	Description:	Burial Pits Open Land Area
Survey Unit:	10	Description:	South Eastern Survey Unit in "Area 9"
Survey Type:	FSS	Classification:	Class I

Measurement or Sample ID	Surface or CSM	Type	Start Elevation*	End Elevation*	Northing** (Y Axis)	Easting** (X Axis)	Remarks / Notes
L101001BRS00	Uniform	S***	423.9	419.9	865127.3	827679.2	Root zone composite
L101002BES00	Uniform	S***	419.9	419.4	865127.3	827679.2	Excavation 6 inch grab
L101003BRS00	Uniform	S***	422	420.5	865114.3	827720.6	Root zone composite
L101005BRS00	Uniform	S***	422.1	421.6	865101.3	827762.0	Root zone composite
L101006BES00	Uniform	S***	421.6	421.1	865101.3	827762.0	Excavation 6 inch grab
L101007BRS00	Uniform	S***	423.8	419.3	865088.2	827803.4	Root zone composite
L101008BES00	Uniform	S***	419.3	418.8	865088.2	827803.4	Excavation 6 inch grab
L101009BSS00	Uniform	S***	424.1	423.6	865075.2	827844.8	Surface 6 inch grab
L101010BRS00	Uniform	S***	423.6	419.1	865075.2	827844.8	Root zone composite
L101011BSS00	Uniform	S***	423.7	423.2	865062.1	827886.2	Surface 6 inch grab
L101011BSQ00	Uniform	Q	423.7	423.2	865062.1	827886.2	Surface 6 inch grab
L101012BRS00	Uniform	S***	423.2	418.7	865062.1	827886.2	Root zone composite
L101013BSS00	Uniform	S***	-	-	865049.1	827927.6	Surface 6 inch grab
L101014BRS00	Uniform	S***	-	-	865049.1	827927.6	Root zone composite
L101015BES00	Uniform	S***	421.5	421.0	865071.9	827730.0	Excavation 6 inch grab
L101016BUB00	Uniform	B	-	-	865077.8	827854.9	Biased 6 inch grab
L101016BUI01	Uniform	I	-	-	865065.7	827897.9	Investigation 6 inch grab
L101016BUI02	Uniform	I	-	-	865082.4	827852.6	Investigation 6 inch grab
L101016BUI03	Uniform	I	-	-	865091.6	827798.3	Investigation 6 inch grab
L101016BUI04	Uniform	I	-	-	865100.6	827721.0	Investigation 6 inch grab
L101017BRS00	Uniform	S	426.0	422.0	865126.6	827652.4	Root zone composite
L101018BES00	Uniform	S	422.0	421.5	865126.6	827652.4	Excavation 6 inch grab
L101019BSS00	Uniform	S	426.3	425.8	865115.8	827693.0	Surface 6 inch grab
L101020BRS00	Uniform	S	425.8	421.3	865115.8	827693.0	Root zone composite
L101021BRS00	Uniform	S	422.9	421.9	865104.9	827733.5	Root zone composite
L101023BRS00	Uniform	S	423.9	419.9	865094.0	827774.1	Root zone composite
L101025BRS00	Uniform	S	424.2	419.7	865083.1	827814.7	Root zone composite
L101026BES00	Uniform	S	419.7	419.2	865083.1	827814.7	Excavation 6 inch grab
L101027BSS00	Uniform	S	424.1	423.6	865072.3	827855.2	Surface 6 inch grab
L101028BRS00	Uniform	S	423.6	419.1	865072.3	827855.2	Root zone composite
L101028BRQ00	Uniform	Q	423.6	419.1	865072.3	827855.2	Root zone composite
L101029BSS00	Uniform	S	423.4	422.9	865061.4	827895.8	Surface 6 inch grab
L101030BRS00	Uniform	S	422.9	418.4	865061.4	827895.8	Root zone composite
L101031BES00	Uniform	S	421.6	421.1	865064.3	827744.4	Excavation 6 inch grab
L101032BUB00	Uniform	B	422.9	418.4	865063.3	827807.6	Biased 6 inch grab
L101033BUB00	Uniform	B	422.9	418.4	865086.1	827809.0	Biased 6 inch grab

Green shaded samples are the samples at each sample location, for use in WRS test.

*Elevations are in feet above mean sea level.

** Missouri - East State Plane Coordinates [North American Datum (NAD) 1983]

*** First round of samples presented for information only

CSM: Three-Layer (Surface-Root-Excavation) or Uniform DCGLs used

Type: Systematic = S, Biased = B; QC =Q; Investigation = I

Quality Record

HDP-PR-FSS-721 Final Status Survey Data Evaluation
Steps 8.3 Preliminary Data Review and 8.4 Calculation of the Sum-of-Fractions (SOF)

Evaluate Final Status Survey Data: LSA-10-10																																
			TestAmerica Analytical Results Step 8.3.2																													
Sample ID	Sample Depth (ft)	Type (Systematic Bias, Q _c)	Ra-226						Tc-99						Th-232						Inferred U-234				U-235				U-238			
			Result	Uncertainty	MC	Qualifier	Net Result ¹	Corrected Result	Result	Uncertainty	MC	Qualifier	Net Result ¹	Corrected Result	Result	Uncertainty	MC	Qualifier	Net Result ¹	Corrected Result	Result	Uncertainty	MC	Qualifier	Net Result ¹	Corrected Result	Result	Uncertainty	MC	Qualifier		
L101001BR500	7.12	S***	1.07	0.15	0.0614	N/A	0.000	0.000	0.239	0.239	0.08	0.226	U	1.15	0.171	0.117	N/A	0.150	0.150	2.450	NA	NA	NA	0.134	0.168	0.235	U	0.812	0.319	1.04	U	
L101002BE500	7.62	S***	1.14	0.16	0.0709	N/A	0.070	0.070	0.0714	0.071	0.04	0.224	U	0.991	0.153	0.125	N/A	-0.009	0.000	1.293	NA	NA	NA	0.067	0.129	0.223	U	0.87	0.333	0.863		
L101003BR500	0.05	S***	1.04	0.17	0.065	N/A	-0.030	0.000	0.381	0.381	0.07	0.226	U	1	0.187	0.0949	N/A	0.000	0.000	3.240	NA	NA	NA	0.172	0.133	0.165	U	1.65	0.822	0.95		
L101005BR500	4.20	S***	0.874	0.12	0.0539	N/A	-0.196	0.000	0.444	0.444	0.11	0.227	U	0.808	0.123	0.0922	N/A	-0.192	0.000	2.893	NA	NA	NA	0.155	0.089	0.141	U	1.34	0.568	0.71		
L101006BE500	4.70	S***	0.693	0.1	0.046	N/A	-0.377	0.000	0.886	0.886	0.19	0.226	U	0.704	0.142	0.0796	N/A	-0.296	0.000	0.988	NA	NA	NA	0.051	0.102	0.171	U	0.638	0.233	0.644	U	
L101007BR500	6.23	S***	1.11	0.15	0.0649	N/A	0.040	0.040	0.103	0.103	0.07	0.213	U	1	0.182	0.121	N/A	0.000	0.000	3.098	NA	NA	NA	0.166	0.103	0.169	U	1.48	0.711	0.874		
L101008BE500	6.73	S***	1.17	0.16	0.0619	N/A	0.100	0.100	-0.078	0.000	0.04	0.227	U	1.14	0.168	0.0886	N/A	0.140	0.140	1.303	NA	NA	NA	0.067	0.146	0.245	U	0.906	0.319	0.816		
L101009BS500	7.20	S***	1.04	0.17	0.0848	N/A	-0.030	0.000	0.124	0.124	0.03	0.219	U	1.05	0.175	0.161	N/A	0.050	0.050	2.958	NA	NA	NA	0.159	0.107	0.188	U	1.38	0.796	0.997		
L101010BR500	5.70	S***	1.09	0.16	0.0805	N/A	0.020	0.020	0.0419	0.042	0.07	0.221	U	1.17	0.167	0.106	N/A	0.170	0.170	2.899	NA	NA	NA	0.153	0.132	0.237	U	1.61	0.684	0.848		
L101011BS500	1.49	S***	1.13	0.16	0.073	N/A	0.060	0.060	0.502	0.502	0.09	0.218	U	0.938	0.162	0.104	N/A	-0.062	0.000	2.975	NA	NA	NA	0.157	0.123	0.173	U	1.71	0.802	0.962		
L101011BS500	1.49	Q	1.26	0.19	0.0784	N/A	0.190	0.190	0.381	0.381	0.06	0.221	U	1.28	0.223	0.128	N/A	0.280	0.280	2.606	NA	NA	NA	0.139	0.182	0.3	U	1.26	0.438	1.09		
L101012BR500	5.99	S***	1.18	0.16	0.0659	N/A	0.110	0.110	0.0606	0.061	0.09	0.226	U	1.05	0.177	0.0957	N/A	0.050	0.050	1.225	NA	NA	NA	0.062	0.151	0.251	U	1.02	0.32	0.795		
L101013BS500	-	S***	1.16	0.18	0.0836	N/A	0.090	0.090	0.223	0.223	0.04	0.225	U	1.16	0.177	0.121	N/A	0.160	0.160	3.051	NA	NA	NA	0.16	0.139	0.187	U	1.78	0.632	0.814		
L101014BR500	-	S***	1.12	0.17	0.0809	N/A	0.050	0.050	0.0082	0.008	0.03	0.228	U	1.03	0.175	0.143	N/A	0.030	0.030	1.484	NA	NA	NA	0.072	0.158	0.281	U	1.51	0.802	0.953		
L101015BR500	7.34	S***	1.06	0.14	0.0662	N/A	-0.010	0.000	-0.008	0.000	0.03	0.238	U	1.23	0.176	0.0881	N/A	0.230	0.230	1.369	NA	NA	NA	0.063	0.142	0.237	U	1.79	0.74	0.879		
L101016BU000	-	B	1.16	0.18	0.0869	N/A	0.090	0.090	0.379	0.379	0.16	0.237	U	1.38	0.202	0.138	N/A	0.360	0.360	11.342	NA	NA	NA	0.612	0.212	0.257	U	4.82	1.11	1.15		
L101016BU001	-	I	1.19	0.19	0.0903	N/A	0.120	0.120	0.332	0.332	0.13	0.232	U	1.07	0.222	0.165	N/A	0.070	0.070	2.450	NA	NA	NA	0.125	0.111	0.306	U	1.82	0.86	1.05		
L101016BU002	-	I	1.24	0.18	0.0678	N/A	0.170	0.170	0.365	0.365	0.06	0.23	U	1.04	0.168	0.0941	N/A	0.040	0.040	3.928	NA	NA	NA	0.209	0.177	0.231	U	1.32	0.415	0.987		
L101016BU003	-	I	1.26	0.2	0.104	N/A	0.190	0.190	0.234	0.234	0.09	0.223	U	1.2	0.165	0.171	N/A	0.200	0.200	20.109	NA	NA	NA	1.09	0.286	0.347	U	1.8	0.521	1.16		
L101016BU004	-	I	1.25	0.18	0.079	N/A	0.180	0.180	0.292	0.292	0.06	0.231	U	1.28	0.187	0.138	N/A	0.280	0.280	4.040	NA	NA	NA	0.222	0.153	0.226	U	1.15	0.352	0.873		
L101017BR500	5.95	S	1.25	0.19	0.0895	N/A	0.180	0.180	0.283	0.283	0.11	0.240	U	1.21	0.211	0.118	N/A	0.210	0.210	3.543	NA	NA	NA	0.189	0.178	0.296	U	1.71	0.875	1.08		
L101018BE500	6.45	S	1.48	0.2	0.0756	N/A	0.410	0.410	0.0375	0.038	0.03	0.261	U	1.3	0.182	0.137	N/A	0.300	0.300	2.769	NA	NA	NA	0.152	0.162	0.289	U	0.817	0.353	0.936	U	
L101019BS500	7.06	S	1.17	0.18	0.0804	N/A	0.100	0.100	0.207	0.207	0.09	0.221	U	1.05	0.184	0.122	N/A	0.050	0.050	3.031	NA	NA	NA	0.16	0.19	0.269	U	1.7	0.936	1.12		
L101020BR500	5.58	S	1.07	0.15	0.0603	N/A	0.090	0.090	0.124	0.124	0.07	0.22	U	1	0.164	0.106	N/A	0.000	0.000	2.598	NA	NA	NA	0.135	0.104	0.208	U	1.42	0.645	0.871		
L101021BR500	4.93	S	1.14	0.26	0.206	N/A	0.070	0.070	0.0495	0.050	0.01	0.229	U	1.3	0.257	0.161	N/A	0.300	0.300	3.479	NA	NA	NA	0.191	0.313	0.504	U	1.03	0.721	2.59	U	
L101022BR500	6.13	S	1.32	0.36	0.201	N/A	0.250	0.250	0.32	0.320	0.04	0.225	U	1.21	0.505	0.693	N/A	0.210	0.210	1.931	NA	NA	NA	0.099	0.153	0.892	U	1.39	2.49	4.3	U	
L101026BR500	5.90	S	1.16	0.19	0.102	N/A	0.090	0.090	0.0428	0.043	0.04	0.207	U	0.927	0.195	0.14	N/A	-0.073	0.000	1.353	NA	NA	NA	0.084	0.112	0.286	U	1.6	0.801	1.01		
L101026BE500	6.40	S	0.959	0.14	0.0784	N/A	-0.111	0.000	0.0499	0.050	0.07	0.224	U	1.03	0.164	0.0875	N/A	0.030	0.030	2.274	NA	NA	NA	0.116	0.137	0.224	U	1.66	0.707	0.837		
L101027BS500	7.20	S	1.11	0.16	0.0684	N/A	0.040	0.040	0.303	0.303	0.09	0.217	U	1.05	0.175	0.133	N/A	0.050	0.050	2.402	NA	NA	NA	0.121	0.14	0.249	U	1.92	0.77	0.887		
L101028BR500	5.70	S	1.09	0.18	0.105	N/A	0.020	0.020	0.283	0.283	0.15	0.217	U	1.08	0.221	0.17	N/A	0.060	0.060	3.097	NA	NA	NA	0.156	0.182	0.281	U	2.53	0.96	1.07		
L101029BS500	1.79	S	1.11	0.18	0.0757	N/A	0.040	0.040	0.193	0.193	0.11	0.22	U	0.955	0.164	0.166	N/A	-0.045	0.000	4.312	NA	NA	NA	0.231	0.137	0.235	U	2.07	0.803	1		
L101030BR500	6.29	S	1.2	0.17	0.07	N/A	0.130	0.130	-0.012	0.000	0.03	0.213	U	1.12	0.172	0.123	N/A	0.120	0.120	2.372	NA	NA	NA	0.094	0.13	0.224	U	1.06	0.724	0.894		
L101031BE500	7.38	S	1.08	0.15	0.0619	N/A	0.010	0.010	0.0173	0.017	0.02	0.228	U	1.2	0.185	0.102	N/A	0.200	0.200	3.133	NA	NA	NA	0.159	0.163	0.258	U	0.883	0.679	1.1	U	
L101032BU000	6.29	B	1.17	0.17	0.0695	N/A	0.120	0.120	0.0157	0.016	0.01	0.218	U	1.28	0.21	0.137	N/A	0.280	0.280	4.836	NA	NA	NA	0.17	0.187	0.261	U	1.18	0.576	0.808		
L101033BU000	6.29	B	1.08	0.16	0.0734	N/A	0.010	0.010	0.222	0.222	0.05	0.22	U	0.985	0.186	0.133	N/A	-0.015	0.000	1.789	NA	NA	NA	0.263	0.141	0.216	U	1.77	0.922	1.07		
L101028BR500	5.70	Q	1.18	0.17	0.082	N/A	0.110	0.110	0.16	0.160	0.07	0.219	U	1.07	0.181	0.0968	N/A	0.070	0.070	2.254	NA	NA	NA	0.115	0.151	0.253	U	1.73	0.766	0.931		
Systematic Minimum			0.009						0.009						0.000						1.353				0.064				0.817			
Systematic Maximum			0.410						0.320						0.300						4.312				0.231				2.530			
Systematic Mean			0.103						0.147						0.118						2.769				0.141				1.522			
Systematic Median			0.124						0.169						0.130						3.000				0.139				1.600			
Systematic Standard Deviation			0.118						0.118						0.113						0.768				0.045				0.496			
Step 8.3.3																																
With uncertainty, using Ra226 bias = 1.07																																
Th-232 bias = 1.0																																

Use corrected net results for all DE calcs 721 Sec. 8.4.2

ADC BOF Step § 1.1.2
0.13
0.14
0.14
0.11
0.11
0.14
0.12
0.16
0.16
0.20
0.16
0.12
0.15
0.16
0.12
0.16
0.17
0.13
0.19
0.15
0.13
0.13
0.12
0.10
0.22
0.50
0.14
0.10
0.12
0.16
0.14
0.12
0.10
0.12
0.12
0.11

	Uniform
U-234	195.4
U-235	51.6
U-238	168.8
Tc-99	25.1
Th-232	2.0
Ra-226	1.9

Infer U-234 MDC using U-235 MDC * ratio of U-234:U-235 @ that sample's enrichment

4.29716
4.32439
3.48522
2.63179
3.2863
2.96777
4.75101
3.50906
4.49031
3.27773
5.62382
4.98313
3.56636
5.77753
5.15731
4.76284
5.99763
4.23089
6.40159
4.11255
5.54884
4.89993
5.09659
3.94086
9.18055
17.4833
6.0268
4.39042
5.57872
4.95883
4.38632
4.27201
4.74381
4.94342
4.81011
3.97155

Step 8.4.5c SOF_{MEAN} Re-use Backfill Material

Step 8.4.5g (<#1)		
SOP	MEAN, SU	0.30
		PASS

7.6 mrem

HDP-PR-FSS-721 Final Status Survey Data Evaluation
Steps 8.3 Preliminary Data Review and 8.4 Calculation of the Sum-of-Fractions (SOF)

[illegible]

HDP-PR-FSS-721 Final Status Survey Data Evaluation
Step 8.5 Performance of Statistical Tests

WRS TEST					
SAMPLE ID	AREA (Reference, Survey Unit)	Gross SOF ($X_{i,ref}$, $Y_{i,SU}$) Step 8.5.3a	ADJUSTED SOF (Z_i) Step 8.5.3b	RANKS Step 8.5.3d	REFERENCE AREA RANKS
9574-SS-140910-01-01	Reference	1.19	2.188	37	37
9574-SS-140910-01-02	Reference	0.76	1.757	15	15
9574-SS-140910-01-03	Reference	1.02	2.023	24	24
9574-SS-140910-01-04	Reference	1.02	2.018	23	23
9574-SS-140910-01-05	Reference	1.00	2.002	20	20
9574-SS-140910-01-07	Reference	0.87	1.873	17	17
9574-SS-140910-01-08	Reference	1.04	2.040	27	27
9574-SS-140910-01-09	Reference	0.96	1.959	19	19
9574-SS-140910-01-10	Reference	1.20	2.204	38	38
9574-SS-140910-01-11	Reference	1.01	2.007	22	22
9574-SS-140910-01-12	Reference	1.22	2.223	39	39
9574-SS-140910-01-13	Reference	1.03	2.035	26	26
9574-SS-140910-01-14	Reference	1.00	2.005	21	21
9574-SS-140910-01-15	Reference	0.86	1.865	16	16
9574-SS-140910-01-16	Reference	1.24	2.238	41	41
9574-SS-140910-01-17	Reference	1.19	2.185	36	36
9574-SS-140910-01-18	Reference	1.31	2.310	43	43
9574-SS-140910-01-20	Reference	1.18	2.179	34	34
9574-SS-140910-01-21	Reference	1.06	2.064	29	29
9574-SS-140910-01-22	Reference	1.10	2.101	30	30
9574-SS-140910-01-23	Reference	1.29	2.293	42	42
9574-SS-140910-01-24	Reference	1.34	2.339	44	44
9574-SS-140910-01-25	Reference	1.15	2.154	33	33
9574-SS-140910-01-26	Reference	1.18	2.182	35	35
9574-SS-140910-01-27	Reference	1.23	2.227	40	40
9574-SS-140910-01-28	Reference	1.38	2.380	45	45
9574-SS-140910-01-29	Reference	1.05	2.055	28	28
9574-SS-140910-01-30	Reference	0.94	1.941	18	18
9574-SS-140910-01-31	Reference	1.12	2.119	31	31
9574-SS-140910-01-32	Reference	1.15	2.152	32	32
9574-SS-140910-01-33	Reference	1.03	2.028	25	25
9574-SS-140910-01-34	Reference	0.44	1.443	13	13
L101017BRS00	Survey Unit	1.31	1.306	11	0
L101018BES00	Survey Unit	1.45	1.452	14	0
L101019BSS00	Survey Unit	1.18	1.178	7	0
L101020BRS00	Survey Unit	1.09	1.092	2	0
L101021BRS00	Survey Unit	1.28	1.280	10	0
L101023BRS00	Survey Unit	1.33	1.333	12	0
L101025BRS00	Survey Unit	1.09	1.093	3	0
L101026BES00	Survey Unit	1.05	1.045	1	0
L101027BSS00	Survey Unit	1.15	1.147	5	0
L101028BRS00	Survey Unit	1.15	1.149	6	0
L101029BSS00	Survey Unit	1.11	1.108	4	0
L101030BRS00	Survey Unit	1.21	1.212	9	0
L101031BES00	Survey Unit	1.19	1.193	8	0
Rank Sums				1035	943
# Reference Area Measurements				m	32
# Survey Unit Measurements				n	13
Total Number of Measurements Step 8.5.3c				N	45
(1- α) percentile of a standard normal distribution (MARSSIM Pg. I-10)				z	1.645
WRS Critical Value (MARSSIM Pg. I-10, Eq. I.1)				CV	802

Step 8.5.1

Min adjusted bkg SOF
1.44

No WRS test necessary
Perform WRS test
No WRS test necessary
No WRS test necessary
No WRS test necessary
No WRS test necessary
No WRS test necessary
No WRS test necessary
No WRS test necessary
No WRS test necessary
No WRS test necessary
No WRS test necessary

W_r Step 8.5.3e

$\alpha = 0.05$

TEST: **PASS** Step 8.5.3f

HDP-PR-FSS-701 Final Status Survey Plan Development

Appendix B.1 Step 8 Calculate the Number of Samples in the Statistical Population

Uniform DCGL Criteria Evaluation	
N/2 Value Verification	
Isotope(s)	SOF (Ra/Tc/Th/Iso U)
St. Dev.	0.11
DCGL _{SOF}	1
LBGR (Mean)	0.14
Shift	0.86
Relative Shift (Δ/σ)	8.07
MARSSIM Table 5.1 (P_r)	1.000000
N	12
N + 20%	14.4
N/2	8
FSS N/2	8
Verification Check	SUFFICIENT MEASUREMENTS
"N/2" Corresponds to the number of survey unit measurement locations required for the WRS Test	

MARSSIM Table 5.1

Δ/σ	P_r
0.1	0.528182
0.2	0.556223
0.3	0.583985
0.4	0.611335
0.5	0.638143
0.6	0.664290
0.7	0.689665
0.8	0.714167
0.9	0.737710
1.0	0.760217
1.1	0.781627
1.2	0.801892
1.3	0.820978
1.4	0.838864
1.5	0.855541
1.6	0.871014
1.7	0.885299
1.8	0.898420
1.9	0.910413
2.0	0.921319
2.25	0.944167
2.5	0.961428
2.75	0.974067
3.0	0.983039
3.5	0.993329
4.0	0.997658
4.01	1.000000

MARSSIM Table 5.2, $\alpha = 0.05$, $\beta = 0.10$

α (or β)	$Z_{1-\alpha}$ (or $Z_{1-\beta}$)
0.005	2.576
0.01	2.326
0.015	2.241
0.025	1.960
0.05	1.645
0.10	1.282
0.15	1.036
0.2	0.842
0.25	0.674
0.30	0.524

α
 β

Hematite Decommissioning Project	Procedure: HDP-PR-FSS-703, Final Status Survey Quality Control											
								Revision: 2		Page 1 of 1		

FORM HDP-PR-FSS-703-1 FIELD DUPLICATE SAMPLE ASSESSMENT												
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Survey Unit No.:	LSA 10-10				Survey Unit Description:	Burial Pits Open Land Area South Eastern Survey Unit in "Area 9"						
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Sample ID	Field Duplicate Sample ID	Radionuclide	Sample (pCi/g)		Field Duplicate Sample (pCi/g)		Average Activity (\bar{x}) (pCi/g)	Nuclide DCGL (pCi/g)	Statistic ²	Warning Limit	Control Limit	Statistic Exceeds Limit? (Y/N)
			Activity (x_i)	MDC	Activity (x_i)	MDC						
L101011BSS00	L101011BSQ00	Ra-226	1.13	0.073	1.26	0.0784	1.195	1.9	0.13	0.269	0.403	N
L101011BSS00	L101011BSQ00	Tc-99	0.502	0.218	0.381	0.221	0.442	25.1	0.121	3.552	5.321	N
L101011BSS00	L101011BSQ00	Th-232	0.938	0.104	1.28	0.128	1.109	2.0	0.342	0.283	0.424	Y
L101011BSS00	L101011BSQ00	U-234 ¹	2.975	NA	2.606	NA	2.790	195.4	0.369	27.649	41.425	N
L101011BSS00	L101011BSQ00	U-235	0.157	0.173	0.139	0.3	0.148	51.6	NA	7.301	10.939	NA
L101011BSS00	L101011BSQ00	U-238	1.71	0.962	1.26	1.09	1.485	168.8	0.450	23.885	35.786	N

Comments:

1. U-234 is inferred, no MDC available.

2. Duplicate assessment is not necessary if the result of either sample is < MDC.

Performed by: _____

Date: _____

Reviewed by: _____

Date: _____

Quality Record

Hematite Decommissioning Project	Procedure: HDP-PR-FSS-703, Final Status Survey Quality Control											
								Revision: 2		Page 1 of 1		

FORM HDP-PR-FSS-703-1 FIELD DUPLICATE SAMPLE ASSESSMENT												
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Survey Unit No.:	LSA 10-10				Survey Unit Description:	Burial Pits Open Land Area South Eastern Survey Unit in "Area 9"						
------------------	-----------	--	--	--	--------------------------	--	--	--	--	--	--	--

Sample ID	Field Duplicate Sample ID	Radionuclide	Sample (pCi/g)		Field Duplicate Sample (pCi/g)		Average Activity (\bar{x}) (pCi/g)	Nuclide DCGL (pCi/g)	Statistic ²	Warning Limit	Control Limit	Statistic Exceeds Limit? (Y/N)
			Activity (x_i)	MDC	Activity (x_i)	MDC						
L101028BRS00	L101028BRQ00	Ra-226	1.11	0.0757	1.08	0.0734	1.095	1.9	0.03	0.269	0.403	N
L101028BRS00	L101028BRQ00	Tc-99	0.193	0.22	0.222	0.22	0.208	25.1	NA	3.552	5.321	NA
L101028BRS00	L101028BRQ00	Th-232	0.955	0.166	0.985	0.133	0.970	2.0	0.030	0.283	0.424	N
L101028BRS00	L101028BRQ00	U-234 ¹	4.312	NA	1.789	NA	3.050	195.4	2.523	27.649	41.425	N
L101028BRS00	L101028BRQ00	U-235	0.231	0.235	0.263	0.216	0.247	51.6	NA	7.301	10.939	NA
L101028BRS00	L101028BRQ00	U-238	2.07	1	1.77	1.07	1.920	168.8	0.300	23.885	35.786	N

Comments:

1. U-234 is inferred, no MDC available.

2. Duplicate assessment is not necessary if the result of either sample is < MDC.

Performed by: _____

Date: _____

Reviewed by: _____

Date: _____

Quality Record

LSA 10-10 Sys SOF

0.2

0.4

0.1

0.0

0.2

0.3

0.1

0.0

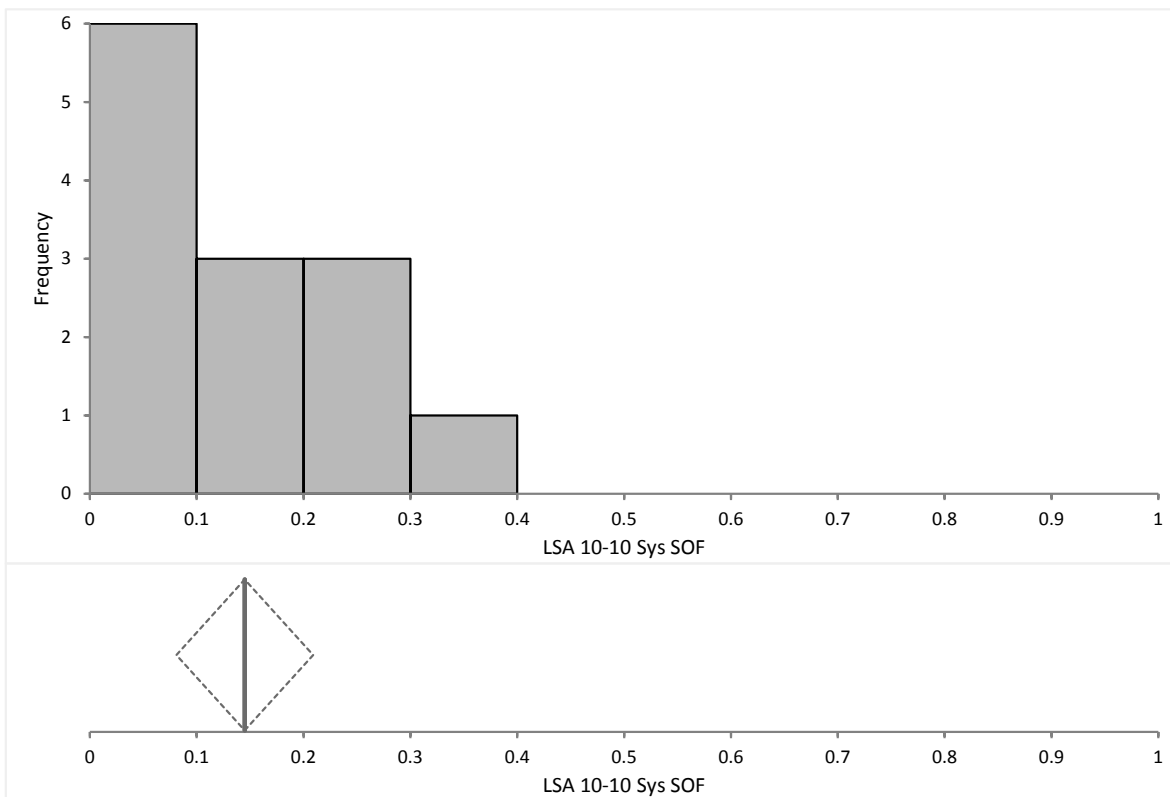
0.1

0.1

0.1

0.1

0.1



N	13							
	Mean	95% CI		Mean SE	SD	Variance	Skewness	Kurtosis
LSA 10-10 Sys SOF	0.14	0.08 to 0.21		0.029	0.11	0.01	1.1	0.80
	Minimum	1st quartile	Median	97.75% CI		3rd quartile	Maximum	IQR
LSA 10-10 Sys SOF	0.03	0.07	0.11	0.07 to 0.24		0.23	0.4	0.16