



Instrument Field Response Check Log

1. Instrument Information¹

Ratemeter: Make/Model: Ludlum 2201-2 Serial No. 206098 Cal. Due Date: 09/01/16
 Detector 1: Make/Model: Ludlum 44-15 Serial No. PR112642
 Bicron MicroRem Meter: Serial No. 1487 Cal. Due Date: 06/18/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 20.1 units: µCi Assay Date: 12/30/18
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 53795 net cpm -20% 35866
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: µCi Assay Date: NA
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 13273 net cpm -20% 5849

3. Technician/Worker Performing Checks:

Name: J. Edwards Title: RCT Date: 12/07/15 Time: 0855

4. Site or Location:

Site/Job: Area 4.1 Location Description: woods
 GPS Coordinates (when required): X-Coord: N 42° 32' 27.172" Y-Coord: W 78° 59' 50.352"

Instrument Field Response ²					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1min	9196 cpm	1min	43110 cpm	Y	Y	Y	0857	33.3°	Th-232 JE
Ratemeter			1min	11177 cpm	Y	Y	Y	0903	33.5°	Cs-137 JE
Ratemeter	1min	11265 cpm	1min	46744 cpm	Y	Y	Y	1111	39.2°	Th-232 JE
Ratemeter			1min	13173 cpm	Y	Y	Y	1116	39.4°	Cs-137 JE
Ratemeter		11333 cpm	1min	48191 cpm	Y	Y	Y	1307	44.1°	Th-232 JE
Ratemeter			1min	13057 cpm	Y	Y	Y	13	44.0°	Cs-137 JE
Bicron	NA	5 uRem/hr	NA	40 uRem/hr	Y	Y	Y	1107	39.2°	Th-232 JE
Bicron	NA	7 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1304	44.1°	Th-232 JE
Bicron	NA		NA	JE 12/07/15						

- Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability

Instrument Field Response Check Log

1. Instrument Information¹

Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 2002098 Cal. Due Date: 09/01/16
 Detector 1: Make/Model: Ludlum 44-10 Serial No. 10112642
 Bicron MicroRem Meter: Serial No. 1487 Cal. Due Date: 06/18/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 111 Activity: CO-1 units: MC Assay Date: 12/30/10
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 53795 net cpm -20% 35860
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: MC Assay Date: NA
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 15275 net cpm -20% 8849

3. Technician/Worker Performing Checks:

Name: J. Edwards Title: RCT Date: 12/08/15 Time: 0850

4. Site or Location:

Site/Job: Area 4.1 / SED Location Description: woods / parking lot
 GPS Coordinates (when required): X-Coord: N 42° 32' 27.172" Y-Coord: W 78° 59' 58.352"

Instrument Field Response ²					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1min	8629 cpm	1min	49644 cpm	Y	Y	Y	0855	38.5°	Th-232 DE
Ratemeter			1min	10659 cpm	Y	Y	Y	0900	36.5°	Cs-137 DE
Ratemeter	1min	11682 cpm	1min	47939 cpm	Y	Y	Y	1058	37.2°	Th-232 DE
Ratemeter			1min	13124 cpm	Y	Y	Y	1103	37.3°	Cs-137 DE
Ratemeter	1min	9641 cpm	1min	46245 cpm	Y	Y	Y	1514	45.7°	Th-232 DE
Ratemeter			1min	11346 cpm	Y	Y	Y	1520	45.5°	Cs-137 DE
Bicron	NA	9 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1107	37.3°	Th-232 DE
Bicron	NA	7 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1510	45.7°	Th-232 DE
Bicron	NA		NA	12/08/15						

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability

Instrument Field Response Check Log

1. Instrument Information¹

Ratemeter: Make/Model: Ludlum 224-2 Serial No. 200098 Cal. Due Date: 09/01/16
 Detector 1: Make/Model: Ludlum 44-10 Serial No. PR12642
 Bicron MicroRem Meter: Serial No. 1487 Cal. Due Date: 04/19/15

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 111 Activity: CC! units: uCi Assay Date: 12/30/15
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 53798 net cpm -20% 35866
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: uCi Assay Date: NA
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 13273 net cpm -20% 8849

3. Technician/Worker Performing Checks:

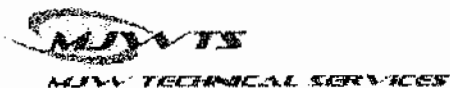
Name: J. Edwards Title: RCT Date: 12/09/15 Time: 0850

4. Site or Location:

Site/Job: SED / Area 4.1 Location Description: parking lot / woods
 GPS Coordinates (when required): X-Coord: N 42° 22' 37.172" Y-Coord: W 78° 59' 50.352"

Instrument Field Response ²					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1min	5718 cpm	1min	45240 cpm	Y	Y	Y	0854	44.1°	Th-232 JE
Ratemeter			1min	10344 cpm	Y	Y	Y	0900	44.2°	Cs-137 JE
Ratemeter	1min	10071 cpm	1min	46291 cpm	Y	Y	Y	1120	55.2°	Th-232 JE
Ratemeter			1min	12136 cpm	Y	Y	Y	1130	55.4°	Cs-137 JE
Ratemeter	1min	10052 cpm	1min	45269 cpm	Y	Y	Y	1502	56.7°	Th-232 JE
Ratemeter			1min	12135 cpm	Y	Y	Y	1458	56.9°	Cs-137 JE
Bicron	NA	7 nrem/hr	NA	30 nrem/hr	Y	Y	Y	1123	57.2°	Th-232 JE
Bicron	NA	6 nrem/hr	NA	36 nrem/hr	Y	Y	Y	1451	56.7°	Th-232 JE
Bicron	NA		NA	JE 12/09/15						

- Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability



Instrument Field Response Check Log

1. Instrument Information

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR 111127
 Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µci Assay Date: 12/30/10
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 22926 net cpm -20% 15284
 Source 2 Isotope: Cs-137 Serial No.: 87F13-48 Activity: 0.02 units: µci Assay Date: 1/20/10
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 13375 net cpm -20% 8919

3. Technician/Worker Performing Checks:

Name: STEVE KINSMAN Title: RCT Date: 10/9/15 Time: 0900

4. Site or Location:

Site/Job: 4.1 Location Description: WOODS
 GPS Coordinates (when required): X-Coord: N 42° 32' 28.2" Y-Coord: W 78° 59' 50.6"

Instrument Field Response					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time (MIN)	Bkg Counts (cpm) or uRem/hr	Source Cnt Time (MIN)	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: Inst. Condition, etc.)
Ratemeter	1	8093	1	20300	Y	Y	Y	0900	39.8	Th232 SK
Ratemeter	1	8093	1	11502	Y	Y	Y	0900	39.8	Cs137 SK
Ratemeter	1	8076	1	20475	Y	Y	Y	1245	58.8	Th232 SK
Ratemeter	1	8076	1	11783	Y	Y	Y	1245	58.8	Cs137 SK
Ratemeter	1	8739	1	20395	Y	Y	Y	1515	57.2	Th232 SK
Ratemeter	1	8739	1	12014	Y	Y	Y	1515	57.2	Cs137 SK
Bicron	NA	6	NA	17	Y	Y	Y	0900	39.8	Th232 SK
Bicron	NA	6	NA	17	Y	Y	Y	1245	58.8	Th232 SK
Bicron	NA	5	NA	16	Y	Y	Y	1515	57.2	Th232 SK

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- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability.

Instrument Field Response Check Log

1. Instrument Information¹

Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 206098 Cal. Due Date: 09/01/16
 Detector 1: Make/Model: Ludlum 44-18 Serial No. FR112692
 Bicron MicroRem Meter: Serial No. 1457 Cal. Due Date: 04/15/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 20.5 units: µCi Assay Date: 12/30/10
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 55798 net cpm -20% 35866
 Source 2 Isotope: Cs-137 Serial No.: 119E2312 Activity: 0.02 units: µCi Assay Date: NA
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 13273 net cpm -20% 5849

3. Technician/Worker Performing Checks:

Name: J. Edwards Title: RCT Date: 12/10/15 Time: 0855

4. Site or Location:

Site/Job: SED / Area 4.1 Location Description: parking lot / woods
 GPS Coordinates (when required): X-Coord: N 42° 32' 27.172" Y-Coord: W 78° 59' 50.352"

Instrument Field Response ²					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l Info: inst. Condition, etc.)
Ratemeter	1min	8575cpm	1min	43599cpm	Y	Y	Y	0903	43.5°	Th-232 JE
Ratemeter			1min	16497cpm	Y	Y	Y	0908	43.7°	Cs-137 JE
Ratemeter	1min	4015cpm	1min	46870cpm	Y	Y	Y	1213	52.0°	Th-232 JE
Ratemeter			1min	11113cpm	Y	Y	Y	1220	52.3°	Cs-137 JE
Ratemeter	1min	9031cpm	1min	43789cpm	Y	Y	Y	1503	53.7°	Th-232 JE
Ratemeter			1min	11532E	Y	Y	Y	1507	53.7°	Cs-137 JE
Bicron	NA	6µrem/hr	NA	3µrem/hr	Y	Y	Y	0910	43.7°	Th-232 JE
Bicron	NA	8µrem/hr	NA	40µrem/hr	Y	Y	Y	1216	52.0°	Th-232 JE
Bicron	NA	7µrem/hr	NA	35µrem/hr	Y	Y	Y	1509	53.6°	Th-232 JE

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Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR 111127
 Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µci Assay Date: 12/30/10
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 22926 net cpm -20% 15284

 Source 2 Isotope: Cs-137 Serial No.: 87F13-48 Activity: 0.02 units: µci Assay Date: 1/20/10
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 13375 net cpm -20% 8919

3. Technician/Worker Performing Checks:

Name: STEVE KUSMAN Title: RET Date: 12/10/15 Time: 0900

4. Site or Location: Site/Job: 4.1

Location Description: WOODS
 GPS Coordinates (when required): X-Coord: N 42° 32' 28.3" Y-Coord: W 78° 59' 50.9"

Instrument Field Response ²					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time (m/s)	Bkg Counts (cpm) or uRem/hr	Source Cnt Time (m/s)	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l Info: Inst. Condition, etc.)
Ratemeter	1	7913	1	25685	Y	Y	Y	0900	42.3	Th232 SK
Ratemeter	1	7913	1	11559	Y	Y	Y	0900	42.3	Cs137 SK
Ratemeter	1	8236	1	20445	Y	Y	Y	1230	54.5	Th232 SK
Ratemeter	1	8236	1	20445 11879	Y	Y	Y	1230	54.5	Cs137 SK
Ratemeter	1	8509	1	21117	Y	Y	Y	1500	52.8	Th232 SK
Ratemeter	1	8509	1	12123	Y	Y	Y	1500	52.8	Cs137 SK
Bicron	NA	6	NA	17	Y	Y	Y	0900	42.3	Th232 SK
Bicron	NA	6	NA	17	Y	Y	Y	1230	54.5	Th232 SK
Bicron	NA	6	NA	17	Y	Y	Y	1500	52.8	Th232 SK

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability