MJW TECHNICAL SERVICES

Rev 1 10/18/15

Instrument Field Response Check Log

1. **Instrument Information**[1]

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.: 87E13-48 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: 10/26/15 Time: 0900

4 **Site or Location:** Site/Job: 2.2 Location Description: DOT

GPS Coordinates (when required): X-Coord: N42.47474° Y-Coord: W078.69512

	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	1 MIN	7803	1 MIN	19966	Y	Y	Y	0900	35.6	Th232
Ratemeter	1 MIN	7803	1 MIN	11187	Y	Y	Y	0900	35.6	Cs137
Ratemeter	1 MIN	7588	1 MIN	19603	Y	Y	Y	1315	53.4	Th232
Ratemeter	1 MIN	7588	1 MIN	11122	Y	Y	Y	1315	53.4	Cs137
Ratemeter	1 MIN	7850	1 MIN	20172	Y	Y	Y	1530	52.6	Th232
Ratemeter	1 MIN	7850	1 MIN	11457	Y	Y	Y	1530	52.6	Cs137
Bicron	NA	7	NA	18	Y	Y	Y	0900	35.6	
Bicron	NA	5	NA	18	Y	Y	Y	1315	53.4	
Bicron	NA	5	NA	17	Y	Y	Y	1530	52.6	

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

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Instrument Field Response Check Log

1. **Instrument Information**[1]
   Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 206098 Cal. Due Date: 09/01/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
   Bicron MicroRem Meter: Serial No. _____ Cal. Due Date: _____

2. **Check Source Information:**
   Source 1 Isotope: Th-232 Serial No.: 111 Activity: <0.1 units: µCi Assay Date: 12/30/10
   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: µCi 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: 10/26/15 Time: 0913

4. **Site or Location:** Site/Job: Area 2.2 Location Description: Woods
   GPS Coordinates (when required): X-Coord: N 42.47474° Y-Coord: W 078.69572°

	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	1 min	8757 cpm	1 min	45115 cpm	Y	Y	Y	0925	39.5	Th-232 JE
Ratemeter			1 min	10704 cpm	Y	Y	Y	0930	37.5	Cs-137 JE
Ratemeter										
Ratemeter										
Bicron	NA		NA							
Bicron	NA		NA							
Bicron	NA		NA							
Bicron	NA		NA							

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

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Instrument Field Response Check Log

1. **Instrument Information**[1]
   Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 206098 Cal. Due Date: 09/01/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
   Bicron MicroRem Meter: Serial No. _____ Cal. Due Date: _____

2. **Check Source Information:**
   Source 1 Isotope: Th-232 Serial No.: 111 Activity: <0.1 units: uCi Assay Date: 12/30/10
   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.: 119E2312 Activity: 002 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: 10/26/16 Time: 1322

4. **Site or Location:** Site/Job: Area 2.2 Location Description: Woods
   GPS Coordinates (when required): X-Coord: N 42.47474° Y-Coord: W 078.69512°

	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	1 min	8061 cpm	1 min	45,135 cpm	Y	Y	Y	1326	54.6	Th-232 JE
Ratemeter			1 min	10,229 cpm	Y	Y	Y	1333	54.8	Cs-137 JE
Ratemeter										
Ratemeter										
Bicron	NA		NA							
Bicron	NA		NA							
Bicron	NA		NA							
Bicron	NA		NA							

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