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% 20 uRem/hr -20% 14 ~~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: 10/8/12 Time: 0900

4 **Site or Location:** Site/Job: 4.2 Location Description: WOODS

GPS Coordinates (when required): X-Coord: N 42° 32' 28.4" Y-Coord: W 78° 54' 51.[illegible]"

	Instrument Field Response[2]				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	7856 cpm	1	20132 cpm	Y	Y	Y	0900	36.8	Th232 SK
Ratemeter	1	7856 cpm	1	11330 cpm	Y	Y	Y	0900	36.8	Cs137 SK
Ratemeter	1	7883 cpm	1	20382 cpm	Y	Y	Y	1230	42.9	Th232 SK
Ratemeter	1	7883 cpm	1	11652 cpm	Y	Y	Y	1230	42.9	Cs137 SK
Ratemeter	1	8174 cpm	1	20873 cpm	Y	Y	Y	15:35	46.0	Th232 SK
Ratemeter	1	8174 cpm	1	11607 cpm	Y	Y	Y	15:35	46.0	Cs137 SK
Bicron	NA	6 uRem/h	NA	17 uRem/h	Y	Y	Y	0900	36.8	Th232 SK
Bicron	NA	6 uRem/h	NA	18 uRem/h	Y	Y	Y	1230	42.9	Th232 SK
Bicron	NA	6 uRem/h	NA	17 uRem/h	Y	Y	Y	15:35	46.0	Th 232 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

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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% 20 uRem/hr -20% 14 ~~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: 10/9/15 Time: 0900

4. **Site or Location:** Site/Job: 4.1 Location Description: WOODS

GPS Coordinates (when required): X-Coord: N42°32'28.2" Y-Coord: W 78°59'50.6"

	Instrument Field Response[2]				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 cpm	1	20300 cpm	Y	Y	Y	0900	39.8	Th232 SK
Ratemeter	1	8093 cpm	1	11502 cpm	Y	Y	Y	0900	39.8	Cs137 SK
Ratemeter	1	8076 cpm	1	20475 cpm	Y	Y	Y	1245	58.8	Th232 SK
Ratemeter	1	8076 cpm	1	11783 cpm	Y	Y	Y	1245	58.8	Cs137 SK
Ratemeter	1	8739 cpm	1	20395 cpm	Y	Y	Y	1515	57.2	Th232 SK
Ratemeter	1	8739 cpm	1	12014 cpm	Y	Y	Y	1515	57.2	Cs137 SK
Bicron	NA	6 uRem/hr	NA	17 uRem/hr	Y	Y	Y	0900	39.8	Th232 SK
Bicron	NA	6 uRem/hr	NA	17 uRem/hr	Y	Y	Y	1245	58.8	Th232 SK
Bicron	NA	5 uRem/hr	NA	16 uRem/hr	Y	Y	Y	1515	57.7	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

MJW TECHNICAL SERVICES

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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: 9/1/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
   Bicron MicroRem Meter: Serial No. N/A Cal. Due Date: N/A

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: 10/15/15 Time: 1005

4. **Site or Location:** Site/Job: Area 3.2 Location Description: Farm
   GPS Coordinates (when required): X-Coord: NA Y-Coord: NA

	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	9431 cpm	1 min	44832 cpm	Y	Y	Y	1045	55.7	Th-232 JE
Ratemeter	1 min	9431 cpm	1 min	10972 cpm	Y	Y	Y	1058	56.3	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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Rev 1 10/18/15

Instrument Field Response Check Log

1. **Instrument Information**[1]
   Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 206098 Cal. Due Date: 9/1/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
   Bicron MicroRem Meter: Serial No. N/A Cal. Due Date: N/A

2. **Check Source Information:**
   Source 1 Isotope: Th-232 Serial No.: 111 Activity: JE 10/15/15 <0.1 <0.01 units: µCi Assay Date: 12/20/10
   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: 10/15/15 Time: 1354

4. **Site or Location:** Site/Job: Area 3.1 Location Description: cornfield
   GPS Coordinates (when required): X-Coord: N 42°28'54.9" Y-Coord: W 078°40'39.7"

	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	9993 cpm	1 min	11597 cpm	Y	Y	Y	1400	64.4	Cs-137 JE
Ratemeter	1 min	9793	1 min	47539 cpm	Y	Y	Y	1408	64.1	Th-232 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: 9/1/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
   Bicron MicroRem Meter: Serial No. N/A Cal. Due Date: N/A

2. **Check Source Information:**
   Source 1 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% 53273 net cpm -20% 8849

   Source 2 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

3. **Technician/Worker Performing Checks:**
   Name: J. Edwards Title: RCT Date: 10/15/15 Time: 1640

4. **Site or Location:** Site/Job: Area 3.1 Location Description: cornfield
   GPS Coordinates (when required): X-Coord: N42°28'54.9" Y-Coord: W078°40'39.7"

	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	9761 cpm	1 min	11888 cpm	Y	Y	Y	1645	56.3	Cs-137 JE
Ratemeter	1 min	9761 cpm	1 min	47819 cpm	Y	Y	Y	1650	55.9	Th-232 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

MJW TECHNICAL SERVICES

Instrument Field Response Check Log

1. **Instrument Information**[1]
   Ratemeter: Make/Model: BICRON MICRO REM Serial No. A274U Cal. Due Date: 8/4/16
   Detector 1: Make/Model: INTERNAL Serial No. N/A
   Detector 2: Make/Model: _____ Serial No. _____
2. **Check Source Information:**
   Source 1 Isotope: Th232 Serial No.: 116 Activity: <0.1 units: uCi Assay Date: 12/30/10
   Instrument Response Acceptance Range (source cpm - bkg +/-20%): ~~net~~ cpm + 20% 42926 ~~net~~ cpm -20% 15284

   Source 2 Isotope: _____ Serial No.: _____ Activity: _____ units: _____ Assay Date: _____
   Instrument Response Acceptance Range (source cpm - bkg +/-20%): ~~net~~ cpm + 20% _____ ~~net~~ cpm -20% _____
3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: RCT Date: 10/16/15 Time: 0957
4. **Site or Location:** Site/Job: 3.2 Location Description: FARM
   GPS Coordinates (when required): X-Coord: N 42° 28' 50.3" Y-Coord: W 078° 40' 27.2"

Instrument Field Response[2]					Use Acceptance Criteria					Remarks
Det. No. (1 / 2)	BKg Cnt Time	Bkg ~~(avg of 3)~~ ~~(cpm)~~ uR/HR	Source Cnt Time	Source Response ~~(cpm - bkg)~~ ~~Net cpm~~	+/- 20% of source Net cpm (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l info: temperature, inst. Condition, etc.)
N/A	N/A	5	N/A	17 uR/HR	Y	Y	Y	0957	48.2	SK Th 232

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

MJW TECHNICAL SERVICES

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-H1127
   - Detector 2: Make/Model: _____ Serial No. _____
2. **Check Source Information:**
   - Source 1 Isotope: Th 232 Serial No.: 116 Activity: <0.1 units: uci Assay Date: 12/30/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): ~~net~~ cpm + 20% 22926 ~~net~~ cpm -20% 15284
   - Source 2 Isotope: Cs 137 Serial No.: 87E13-48 Activity: .02 units: uci Assay Date: 1/20/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): ~~net~~ cpm + 20% 13375 ~~net~~ cpm -20% 8919
3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: RCT Date: 10/16/15 Time: 1000
4. **Site or Location:** Site/Job: 3.2 Location Description: FARM
   GPS Coordinates (when required): X-Coord: N 42° 25' 50.7" Y-Coord: W 078 40' 27.2"

SOURCE Instrument Field Response[2]					Use Acceptance Criteria					Remarks
~~Det~~ No. (1 / 2)	BKg Cnt Time	Bkg (avg of 3) (cpm)	Source Cnt Time	Source Response (~~cpm - bkg~~) ~~Net cpm~~	+/- 20% of source Net cpm (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l Info: temperature, Inst. Condition, etc.)
Th232	1 MIN	7820	1 MIN.	19105	Y	Y	Y	1000	48.2	SK
Cs137	1 MIN	7820	1 MIN.	11146	Y	Y	Y	1005	48.2	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.
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MJW TECHNICAL SERVICES

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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: 9/1/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112842
   Bicron MicroRem Meter: Serial No. N/A Cal. Due Date: N/A

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% 55798 net cpm -20% 35865
   Source 2 Isotope: Cs-137 Serial No.: 119E2342 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: 10/16/15 Time: 1000

4. **Site or Location:** Site/Job: Area 3.1 Location Description: cornfield
   GPS Coordinates (when required): X-Coord: N 42°28'54.9" Y-Coord: W078°40'39.7"

	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	9563 cpm	1 min	46041 cpm	Y	Y	Y	1005	51.0	Th-232 JE
Ratemeter	1 min	9563 cpm	1 min	11526 cpm	Y	Y	Y	1010	51.2	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

MJW TECHNICAL SERVICES

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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: 9/1/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
   Bicron MicroRem Meter: Serial No. N/A Cal. Due Date: N/A

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: 10/16/15 Time: 1304

4. **Site or Location**: Site/Job: Area 3.1 Location Description: Camfield
   GPS Coordinates (when required): X-Coord: N 42°28'54.9" Y-Coord: W 078°40'39.7"

	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	9176 cpm	1 min	45890 cpm	Y	Y	Y	1308	59.0	Th-232 DE
Ratemeter	1 min	9176 cpm	1 min	11145 cpm	Y	Y	Y	1311	59.0	Cs-137 DE
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

MJW TECHNICAL SERVICES

Instrument Field Response Check Log

1. **Instrument Information**[1]
   - Ratemeter: Make/Model: BICRON MICROREM Serial No. A224U Cal. Due Date: 8/4/16
   - Detector 1: Make/Model: INTERNAL Serial No. N/A
   - Detector 2: Make/Model: _____ Serial No. _____
2. **Check Source Information:**
   - Source 1 Isotope: Th232 Serial No.: 116 Activity: <0.1 units: uCi Assay Date: 12/30/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): ~~net~~ cpm + 20% 22726 ~~net~~ cpm -20% 15284
     uRem/hr + 20% 20 uRem/hr - 20% 14
   - Source 2 Isotope: _____ Serial No.: _____ Activity: _____ units: _____ Assay Date: _____
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20% _____ net cpm -20% _____
3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: RCT Date: 10/16/15 Time: 1400
4. **Site or Location:** Site/Job: 3.2 Location Description: FARM
   GPS Coordinates (when required): X-Coord: _____ Y-Coord: _____

Instrument Field Response[2]					Use Acceptance Criteria					Remarks
Det. No. (1 / 2)	BKg Cnt Time	Bkg ~~(avg of 3)~~ ~~(cpm)~~ uR/Hr	Source Cnt Time	Source Response ~~(cpm - bkg)~~ ~~Net cpm~~	+/- 20% of source Net cpm (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l Info: temperature, inst. Condition, etc.)
N/A	N/A	6	N/A	18 mR/Hr	Y	Y	Y	1400	53.6	SK Th232

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

MJW TECHNICAL SERVICES

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. PR111127
   - Detector 2: Make/Model: _____ Serial No. _____
2. **Check Source Information:**
   - Source 1 Isotope: Th232 Serial No.: 116 Activity: < 0.1 units: μCi Assay Date: 12/30/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): ~~net~~ cpm + 20% 22926 ~~net~~ cpm -20% 15284
   - Source 2 Isotope: Cs137 Serial No.: 87E13-48 Activity: .02 units: μCi Assay Date: 1/20/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): ~~net~~ cpm + 20% 13375 ~~net~~ cpm -20% 3919
3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: RCT Date: 10/16/15 Time: 1410
4. **Site or Location**: Site/Job: 3.2 Location Description: Farm
   GPS Coordinates (when required): X-Coord: _____ Y-Coord: _____

SOURCE	Instrument Field Response[2] GROSS CTS				Use Acceptance Criteria					Remarks
~~Det.~~ No. (1 / 2)	BKg Cnt Time	Bkg (avg of 3) (cpm)	Source Cnt Time	Source Response (~~cpm - bkg~~) ~~Net cpm~~	+/- 20% of source Net cpm (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l info: temperature, inst. Condition, etc.)
Th232	1 MIN	7621	1 MIN	19835 cpm	Y	Y	Y	1410	53.6	SK
Cs137	1 MIN	7621	1 MIN	11161 cpm	Y	Y	Y	1415	53.6	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.
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MJW TECHNICAL SERVICES

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. PR111127
   - Detector 2: Make/Model: _____ Serial No. _____
2. **Check Source Information:**
   - Source 1 Isotope: Th 232 Serial No.: 116 Activity: 40.1 units: uci Assay Date: 12/30/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): ~~net~~ cpm + 20% 22926 ~~net~~ cpm -20% 15284
   - Source 2 Isotope: Cs 137 Serial No.: 87E13-48 Activity: .02 units: uci Assay Date: 1/20/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): ~~net~~ cpm + 20% 13375 ~~net~~ cpm -20% 8919
3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: RCT Date: 10/16/15 Time: 1515
4. **Site or Location:** Site/Job: Area 3,2 Location Description: farm
   GPS Coordinates (when required): X-Coord: _____ Y-Coord: _____

SOURCE Instrument Field Response[2] GROSS CTS					Use Acceptance Criteria					Remarks
~~Det.~~ No. (1 / 2)	BKg Cnt Time	Bkg (avg of 3) (cpm)	Source Cnt Time	Source Response (~~cpm - bkg~~) ~~Net~~ cpm	+/- 20% of source Net cpm (Y/N)	Inst. Calib current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l Info: temperature, inst. Condition, etc.)
Th232	1 min	7496	1 min	19694 cpm	Y	Y	Y	1515	53.6	SK
Cs137	1 min	7496	1 min	10545 cpm	Y	Y	Y	1520	53.6	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

MJW TECHNICAL SERVICES

Instrument Field Response Check Log

1. **Instrument Information**[1]
   - Ratemeter: Make/Model: BICRON MICROREM Serial No. A2244 Cal. Due Date: 8/4/16
   - Detector 1: Make/Model: INTERNAL Serial No. _____
   - Detector 2: Make/Model: _____ Serial No. _____
2. **Check Source Information:**
   - Source 1 Isotope: Th232 Serial No.: 116 Activity: 40.1 units: uCi Assay Date: 12/30/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): ~~net~~ cpm + 20% 22726 ~~net~~ cpm -20% 15284
     uRem/hr +20% 20 uRem/hr - 20% 14
   - Source 2 Isotope: _____ Serial No.: _____ Activity: _____ units: _____ Assay Date: _____
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): ~~net~~ cpm + 20% _____ ~~net~~ cpm -20% _____
3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: RCT Date: 10/16/15 Time: 1515
4. **Site or Location**: Site/Job: 3-2 Location Description: FARM
   GPS Coordinates (when required): X-Coord: _____ Y-Coord: _____

Instrument Field Response[2]					Use Acceptance Criteria					Remarks
Det. No. (1 / 2)	BKg Cnt Time	Bkg ~~(avg of 3)~~ (~~cpm~~) uR/Hr	Source Cnt Time	Source Response (~~cpm - bkg~~) uR/Hr ~~Net cpm~~	+/- 20% of source Net cpm (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l info: temperature, inst. Condition, etc.)
N/A	N/A	7	N/A	17	Y	Y	Y	1515	56.3	SK Th232

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

MW TECHNICAL SERVICES

Rev 1 10/18/15

Instrument Field Response Check Log

1. **Instrument Information**[1]
   Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 206098 Cal. Due Date: 9/1/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
   Bicron MicroRem Meter: Serial No. N/A Cal. Due Date: N/A

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.: 119E2342 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: 10/16/15 Time: 1628

4. **Site or Location:** Site/Job: Area 3.1 Location Description: cornfield
   GPS Coordinates (when required): X-Coord: N 42°28'54.9" Y-Coord: W078°40'39.7"

	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	9218 cpm	1 min	42357 cpm	Y	Y	Y	1632	53.7	Th-232 JE
Ratemeter	1 min	9218 cpm	1 min	11197 cpm	Y	Y	Y	1637	53.5	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

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. 206098 Cal. Due Date: 9/1/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
   Bicron MicroRem Meter: Serial No. N/A Cal. Due Date: N/A

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: Jonathan Edwards Title: RCT Date: 10/19/15 JE corrected 0925 Time: 0925

4. **Site or Location**: Site/Job: Area 3.1 Location Description: Cornfield
   GPS Coordinates (when required): X-Coord: N 42°28'34.9" Y-Coord: W078°40'39.7"

	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	9600 cpm	1 min	46426 cpm	Y	Y	Y	0932	36.5	Th-232 JE
Ratemeter	1 min	9600 cpm	1 min	11509 cpm	Y	Y	Y	0940	36.1	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

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. PR111127
   - Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. **Check Source Information:**
   - Source 1 Isotope: Th232 Serial No.: 116 Activity: <0.1 units: uci Assay Date: 12/30/10
     Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 14 ~~net~~ cpm + 20% 22926 ~~net~~ cpm -20% 15284
   - Source 2 Isotope: Cs137 Serial No.: 87E13-48 Activity: .02 units: uci 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: 10/19/15 Time: 0930

4. **Site or Location:** Site/Job: 3.2 Location Description: FARM
   GPS Coordinates (when required): X-Coord: 78.67417° Y-Coord: 42.48070°

	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	7893 cpm	1MIN	19674 cpm	Y	Y	Y	0935	33.4	Th232 SK
Ratemeter	1MIN	7893 cpm	1MIN	11228 cpm	Y	Y	Y	0940	33.4	Cs137 SK
Ratemeter	1MIN	7552 cpm	1MIN	19351 cpm	Y	Y	Y	1325	54.5	Th232 SK
Ratemeter	1MIN	7557 cpm	1MIN	10692 cpm	Y	Y	Y	1325	54.5	Cs137 SK
Bicron	NA	5 uR/HR	NA	18 uR/Hr	Y	Y	Y	0930	33.4	Th232 SK
Bicron	NA	6 uR/HR	NA	17 uR/Hr	Y	Y	Y	1320	54.5	Th232 SK
Bicron	NA	6 uR/HR	NA	16 uR/Hr	Y	Y	Y	1325	58.6	Th232 SK
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

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. 206098 Cal. Due Date: 9/1/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
   Bicron MicroRem Meter: Serial No. N/A Cal. Due Date: N/A

2. **Check Source Information:**
   Source 1 Isotope: Th232 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.: 119E33-12 Activity: 0.02 units: µCi Assay Date: N/A
   Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 13273 net cpm -20% 8849

3. **Technician/Worker Performing Checks:**
   Name: Jonathan Edwards Title: RCT Date: 10/19/15 Time: 1125

4. **Site or Location**: Site/Job: Area 3.1 Location Description: Cornfield
   GPS Coordinates (when required): X-Coord: N42°28'54.9" Y-Coord: W078°40'39.7"

	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	9264 cpm	1 min	45989 cpm	Y	Y	Y	1132	46.5	Th-232 JE
Ratemeter	1 min	9264 cpm	1 min	11244 cpm	Y	Y	Y	1138	47.8	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

MJW TECHNICAL SERVICES

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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. N/A Cal. Due Date: N/A

2. **Check Source Information:**

Source 1 Isotope: Th 232 Serial No.: 116 Activity: 40.1 units: uCi 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: Cs137 Serial No.: 87E13-48 Activity: .02 units: uCi 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: 10/19/15 Time: 1590

4. **Site or Location**: Site/Job: 3.2 Location Description: Farm

GPS Coordinates (when required): X-Coord: _____ Y-Coord: _____

	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	8854 cpm	1MIN	19517 cpm	Y	Y	Y	1540	58.6	Th232 SK
Ratemeter	1MIN	8854 cpm	1MIN	12422 cpm	Y	Y	Y	1545	58.6	Cs137 SK
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

MJW TECHNICAL SERVICES

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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: 9/1/16
   - Detector 1: Make/Model: Ludlum 44-10 Serial No. PR256142
   - Bicron MicroRem Meter: Serial No. B378A Cal. Due Date: 12/17/15

2. **Check Source Information:**
   - Source 1 Isotope: Th-232 Serial No.: 111 Activity: 40.1 units: nCi Assay Date: 12/30/10
     Response Acceptance Range (+/-20%): uRem/hr +20% 166 uRem/hr -20% 110 net cpm + 20% 53798 net cpm -20% 35866
   - Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: nCi 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: 10/29/15 Time: 0917

4. **Site or Location:** Site/Job: Area 3.2 Location Description: Cornfield
   GPS Coordinates (when required): X-Coord: N 42°28'54.9" Y-Coord: W078°40'39.2"

	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	9683 cpm	1 min	45161 cpm	Y	Y	Y	0924	57.0	Th-232 JE
Ratemeter	1 min	9683 cpm	1 min	11559 cpm	Y	Y	Y	0933	57.6	Cs-137 JE
Ratemeter										
Ratemeter										
Bicron	NA	6 uRem/hr	NA	139 uRem/hr	Y	Y	Y	0938	58.0	JE Th-232
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

MJW TECHNICAL SERVICES

Rev 1 10/18/15

Instrument Field Response Check Log

1. **Instrument Information**[1]
   Ratemeter: Make/Model: Ludlum 2241 Serial No. 196664 Cal. Due Date: 10/15/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR256142
   Bicron MicroRem Meter: Serial No. B6936 Cal. Due Date 05/05/16

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% 154 uRem/hr -20% 103 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: 10/20/15 Time: 1320

4. **Site or Location:** Site/Job: ~~Area 3.2~~ Area 3.1 (JE 10/20/15) Location Description: cornfield
   GPS Coordinates (when required): X-Coord: N42°28'54.9" Y-Coord: W078°40'39.7"

	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	8929 cpm	1 min	47627 cpm	Y	Y	Y	1325	66.6	Th-232 JE
Ratemeter	1 min	8929 cpm	1 min	11016 cpm	Y	Y	Y	1332	66.7	Cs-137 JE
Ratemeter										
Ratemeter										
Bicron	NA	9 uRem/hr	NA	130 uRem/hr	Y	Y	Y	1337	66.9	Th-232 JE
Bicron	NA		NA							~~Cs-137~~ JE
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

MJW TECHNICAL SERVICES

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Instrument Field Response Check Log

1. **Instrument Information**[1]
   Ratemeter: Make/Model: Ludlum 2241 Serial No. 196664 Cal. Due Date: 10/15/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR256142
   Bicron MicroRem Meter: Serial No. B6936 Cal. Due Date: 05/05/16

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% 154 uRem/hr -20% 103 ~~net~~ cpm + 20% 53798 ~~net~~ cpm -20% 35866

   Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 6.02 units: μC 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: 10/20/15 Time: 1550

4. **Site or Location:** Site/Job: Area 3.1 Location Description: cornfield
   GPS Coordinates (when required): X-Coord: N42°28'54.9" Y-Coord: W078°40'39.7"

	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	9861 cpm	1min	48633 cpm	Y	Y	Y	1555	65.5	JE Th-232
Ratemeter	1min	9861 cpm	1min	11398 cpm	Y	Y	Y	1600	65.5	JE Cs-137
Ratemeter										
Ratemeter										
Bicron	NA	6 μRem/hr	NA	125 μRem/hr	Y	Y	Y	1603	65.3	JE Th-232
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

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: uci Assay Date: 12/30/10
   Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 14 net cpm + 20% 22926 net cpm -20% 15284

   Source 2 Isotope: Cs 137 Serial No.: 87E13-48 Activity: .02 units: uci 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: 10/21/15 Time: 0900

4. **Site or Location:** Site/Job: Area 3.1 Location Description: cornfield
   GPS Coordinates (when required): X-Coord: N 42° 27' 48.0" Y-Coord: W078° 40' 35.2"

	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.	8603 cpm	1 MIN.	19804 cpm	Y	Y	Y	0900	55.7	Th 232 SK
Ratemeter	1 MIN.	8603 cpm	1 MIN	11972 cpm	Y	Y	Y	0900	55.7	Cs 137 SK
Ratemeter	1 MIN	8975 cpm	1 MIN	20965 cpm	Y	Y	Y	1230	65.1	Th 232 SK
Ratemeter	1 MIN	8975 cpm	1 MIN	12498 cpm	Y	Y	Y	1230	65.1	Cs 137 SK
Ratemeter	1 MIN	9007 cpm	1 MIN	19981 cpm	Y	Y	Y	1600	66.2	Th 232 SK
Ratemeter	1 MIN	9007 cpm	1 MIN	12443 cpm	Y	Y	Y	1600	66.2	Cs 137 SK
Bicron	NA	7 uRem/hr	NA	17 uRem/hr	Y	Y	Y	0900	55.7	Th 232 SK
Bicron	NA	7 uRem/hr	NA	17 uRem/hr	Y	Y	Y	1230	65.1	Th 232 SK
Bicron	NA	7 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1600	66.2	Th 232 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

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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. PR111127
   - 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: uci Assay Date: 12/30/10
     Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 14 net cpm + 20% 22926 net cpm -20% 15284
   - Source 2 Isotope: Cs 137 Serial No.: 87E13-48 Activity: .02 units: uci 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: 10/21/15 Time: 0915

4. **Site or Location:** Site/Job: 3.1 Location Description: CORN FIELD
   GPS Coordinates (when required): X-Coord: N 42.48191 Y-Coord: W 078.67772

	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	8897 cpm	1 MIN	20316 cpm	Y	Y	Y	0915	58.4	Th232 SK
Ratemeter	1 MIN	8897 cpm	1 MIN	12485 cpm	Y	Y	Y	0915	58.4	Cs137 SK
Ratemeter	1 MIN	9019 cpm	1 MIN	21199 cpm	Y	Y	Y	1300	66.7	Th232 SK
Ratemeter	1 MIN	9019 cpm	1 MIN	12577 cpm	Y	Y	Y	1300	66.7	Cs137 SK
Ratemeter	1 MIN	9024 cpm	1 MIN	20789 cpm	Y	Y	Y	1500	72.3	Th232 SK
Ratemeter	1 MIN	9034 cpm	1 MIN	12544 cpm	Y	Y	Y	1500	72.3	Cs137 SK
Bicron	NA	7 uRem/hr	NA	18 uRem/hr	Y	Y	Y	0915	58.4	Th232 SK
Bicron	NA	7 uRem/hr	NA	17 uRem/hr	Y	Y	Y	1300	66.7	Th232 SK
Bicron	NA	7 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1500	72.3	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

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Instrument Field Response Check Log

1. **Instrument Information**[1]
   Ratemeter: Make/Model: Ludlum 2241 Serial No. 196664 Cal. Due Date: 10/15/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR256142
   Bicron MicroRem Meter: Serial No. B6936 Cal. Due Date: 05/05/16

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% 154 uRem/hr -20% 103 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: 10/21/15 Time: 0925

4. **Site or Location:** Site/Job: Area 3.1 Location Description: cornfield
   GPS Coordinates (when required): X-Coord: N 42°28'54.9" Y-Coord: W078°40'39.7"

		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	9197 cpm	1 min	47648 cpm	Y	Y	Y	0930	56.4	Th-232 JE
Ratemeter	1 min	9197 cpm	1 min	10948 cpm	Y	Y	Y	0937	56.3	Cs-137 JE
Ratemeter										
Ratemeter										
Bicron	NA	8 µrem/hr	NA	125 µrem/hr	Y	Y	Y	0955	56.3	Th-232 JE
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 Serial No. 196664 Cal. Due Date: 10/15/16
   Detector 1: Make/Model: Ludlum Serial No. PR256142
   Bicron MicroRem Meter: Serial No. B6936 Cal. Due Date: 05/05/16

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% 154 uRem/hr -20% 103 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: 10/21/15 Time: 0713

4. **Site or Location:** Site/Job: Area 3.1 Location Description: Cornfield
   GPS Coordinates (when required): X-Coord: N42°28'54.9" Y-Coord: W078°40'39.7"

	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	9292 cpm	1 min	47753 cpm	Y	Y	Y	1307	66.7	Th-232 JE
Ratemeter	1 min	9292 cpm	1 min	11400 cpm	Y	Y	Y	1315	66.3	Cs-137 JE
Ratemeter										
Ratemeter										
Bicron	NA	9 µrem/hr	NA	130 µrem/hr	Y	Y	Y	1313	66.3	Th-232 JE
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 Serial No. 196664 Cal. Due Date: 10/15/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR256142
   Bicron MicroRem Meter: Serial No. B6936 Cal. Due Date: 05/05/16

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% 154 uRem/hr -20% 103 net cpm + 20% 55398 net cpm -20% 35866
   Source 2 Isotope: Cs-137 Serial No.: 119F23-12 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: 10/21/15 Time: 1534

4. **Site or Location**: Site/Job: Area 3.1 Location Description: Cornfield
   GPS Coordinates (when required): X-Coord: N42°28'54.9" Y-Coord: W078°40'39.7"

	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	8901 cpm	1 min	48490 cpm	Y	Y	Y	1537	68.1	Th-232 JE
Ratemeter	1 min	48490 cpm JE 10/21/14 8901 cpm	1 min	40987 cpm	Y	Y	Y	1544	67.4	Cs-137 JE
Ratemeter										
Ratemeter										
Bicron	NA	8 µrem/hr	NA	133 µrem/hr	Y	Y	Y	1540	67.4	Th-232 JE
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 7241-2 Serial No. 262641 Cal. Due Date: 11/03/15
   Detector 1: Make/Model: Ludlum 44.10 Serial No. PR288429
   Bicron MicroRem Meter: Serial No. 1487 Cal. Due Date: 06/18/16

2. **Check Source Information:**
   Source 1 Isotope: Th232 Serial No.: 111 Activity: 0.1 units: uCi Assay Date: 12/30/10
   Response Acceptance Range (+/-20%): uRem/hr +20% 41 uRem/hr -20% 27 net cpm + 20% 53798 net cpm -20% 35864
   Source 2 Isotope: Cs 137 Serial No.: 119E23-12 Activity: 0.02 units: uCi Assay Date: 6/14
   Response Acceptance Range (+/-20%): uRem/hr +20% ____ uRem/hr -20% ____ net cpm + 20% 13273 net cpm -20% 8849

3. **Technician/Worker Performing Checks:**
   Name: [illegible] Title: RCT Date: 10/22/15 Time: 09:11

4. **Site or Location:** Site/Job: 1.1 & 1.2 Location Description: Driveway by Car
   GPS Coordinates (when required): X-Coord: 47° 28' 12.3 Y-Coord: 078° 41' 06.0

	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	1.0	7149 cpm	1.0	9310 cpm	Y	Y	Y	09:20	60.9°	S.C. taken on concrete Cs137
Ratemeter	1.0	7344 cpm	1.0	9597 cpm	Y	Y	Y	11:10	60.4°	Driveway * Cs137
Ratemeter										
Ratemeter										
Bicron	NA	7.0 uRem/hr	NA	400 uRem/hr	Y	Y	Y	09:11	60.9°	* Th232
Bicron	NA	7.0 uRem/hr	NA	390 uRem/hr	Y	Y	Y	11:00	60.4°	* Th232
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. 262737 Cal. Due Date: 9/2/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR111127
   Bicron MicroRem Meter: Serial No. A2344 Cal. Due Date: 8/4/16

2. **Check Source Information:**
   Source 1 Isotope: Th232 Serial No.: 116 Activity: <0.1 units: uci Assay Date: 12/30/10
   Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 19 net cpm + 20% 22926 net cpm -20% 15284

   Source 2 Isotope: Cs137 Serial No.: 87E13-48 Activity: .02 units: uci 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: 10/23/15 Time: 0900

4. **Site or Location:** Site/Job: 2.1 Location Description: Scoby Dam
   GPS Coordinates (when required): X-Coord: N42.48316 Y-Coord: W 78.70142

	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	7407 cpm	1 MIN	18526 cpm	Y	Y	Y	0900	37.9	Th232 SK
Ratemeter	1 MIN	7407 cpm	1 MIN	10965 cpm	Y	Y	Y	0930	37.9	Cs137 SK
Ratemeter	1 MIN	8606 cpm	1 MIN	19166 cpm	Y	Y	Y	1230	49.4	Th232 SK
Ratemeter	1 MIN	8606 cpm	1 MIN	12192 cpm	Y	Y	Y	1230	49.4	Cs137 SK
Ratemeter	1 MIN	7523 cpm	1 MIN	11171 cpm	Y	Y	Y	1510	52.8	~~Th232~~ Cs137 SK
Ratemeter	1 MIN	7523 cpm	1 MIN	19582 cpm	Y	Y	Y	1510	52.8	~~Cs137~~ Th232 SK
Bicron	NA	6 uRem/hr	NA	16 uRem/hr	Y	Y	Y	0900	37.9	Th232 SK
Bicron	NA	7 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1230	49.4	Th232 SK
Bicron	NA	6 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1510	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

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Instrument Field Response Check Log

1. **Instrument Information**[1]
   Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 206898 Cal. Due Date: 09/01/16
   Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
   Bicron MicroRem Meter: Serial No. N/A Cal. Due Date: N/A

2. **Check Source Information:**
   Source 1 Isotope: Th-232 Serial No.: 111 Activity: 64.1 units: nCi 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% 5273 net cpm -20% 3849

3. **Technician/Worker Performing Checks:**
   Name: J. Edwards Title: RCT Date: 10/23/15 Time: 0902

4. **Site or Location**: Site/Job: Area 2.1 Location Description: Scaby Drum
   GPS Coordinates (when required): X-Coord: N 42.48212° Y-Coord: W 078.70197°

	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	8728 cpm	1 min	41841 cpm	Y	Y	Y	0907	34.7	Th-232 JE
Ratemeter	1 min	8728 cpm	1 min	10549 cpm	Y	Y	Y	0912	34.9	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. N/A Cal. Due Date: N/A

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.: U9E23-12 Activity: 0.02 units: µC 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: 10/23/15 Time: 1229

4. **Site or Location:** Site/Job: Area 2.1 Location Description: Scoby Dam
   GPS Coordinates (when required): X-Coord: N42.48210° Y-Coord: W078.70197°

	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	9314 cpm	1min	46913 cpm	Y	Y	Y	1234	50.1	Th-232 JE
Ratemeter	1min	9314 cpm	1min	11552 cpm	Y	Y	Y	1239	50.3	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. 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% 20 uRem/hr -20% 14 ~~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: 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	7803 cpm	1 MIN	19966 cpm	Y	Y	Y	0900	35.6	Th232 SK
Ratemeter	1 MIN	7803 cpm	1 MIN	11187 cpm	Y	Y	Y	0900	35.6	Cs137 SK
Ratemeter	1 MIN	7588 cpm	1 MIN	19603 cpm	Y	Y	Y	1315	53.4	Th232 SK
Ratemeter	1 MIN	7588 cpm	1 MIN	11122 cpm	Y	Y	Y	1315	53.4	Cs137 SK
Ratemeter	1 MIN	7850 cpm	1 MIN	20172 cpm	Y	Y	Y	1530	52.6	Th232 SK
Ratemeter	1 MIN	7850 cpm	1 MIN	11457 cpm	Y	Y	Y	1530	52.6	Cs137 SK
Bicron	NA	7 uRem/hr	NA	18 uRem/hr	Y	Y	Y	0900	35.6	Th232 SK
Bicron	NA	5 uRem/hr	NA	18 uRem/hr	Y	Y	Y	1315	53.4	Th232 SK
Bicron	NA	5 uRem/hr	NA	17 uRem/hr	Y	Y	Y	1530	52.6	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.

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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. N/A Cal. Due Date: N/A

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.: 119E13-12 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	8757 cpm	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. N/A Cal. Due Date: N/A

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	8061 cpm	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							

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

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. PR111127
   - **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: uci Assay Date: 12/30/10
     Response Acceptance Range (+/-20%): uRem/hr +20% 20 uRem/hr -20% 14 ~~net~~ cpm + 20% 22926 ~~net~~ cpm -20% 15284
   - Source 2 Isotope: Cs 137 Serial No.: 87E13-48 Activity: .02 units: uci 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: 10/27/15 Time: 0845

4. **Site or Location:** Site/Job: AREA 1 Location Description: NYSERDA
   GPS Coordinates (when required): X-Coord: N 42° 27' 17.1" Y-Coord: W 078° 29' 41.5"

	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	8115 cpm	1 MIN	19687 cpm	Y	Y	Y	0845	41.9	Th 232 SK
Ratemeter	1 MIN	8115 cpm	1 MIN	11565 cpm	Y	Y	Y	0845	41.9	Cs 137 SK
Ratemeter	1 MIN	7666 cpm	1 MIN	19014 cpm	Y	Y	Y	1415	59.1	Th 232 SK
Ratemeter	1 MIN	7666 cpm	1 MIN	11034 cpm	Y	Y	Y	1415	59.1	Cs 137 SK
Ratemeter	1 MIN	7384 cpm	1 MIN	19504 cpm	Y	Y	Y	1515	58.8	Th 232 SK
Ratemeter	1 MIN	7384 cpm	1 MIN	10894 cpm	Y	Y	Y	1515	58.8	Cs 137 SK
Bicron	NA	5 uRem	NA	17 uRem/hr	Y	Y	Y	0845	41.9	Th 232 SK
Bicron	NA	6 uRem	NA	18 uRem/hr	Y	Y	Y	1415	59.1	Th 232 SK
Bicron	NA	6 uRem	NA	18 uRem/hr	Y	Y	Y	1515	58.8	Th 232 SK

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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