

CERTIFICATE OF CALIBRATION



S.E. INTERNATIONAL, INC.
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Certificate Number:
14-014
 CAL DATE: 1/3/2014
 CAL DUE DATE: 1/3/2015

Customer Information:

Tetra Tech, Inc.
 Ralph Boedeker
 240 Continental Dr. Suite 200
 Newark, DE 19713 USA

Customer PO:

Instrument Information:

Instrument: Radiation Alert
Type: GM Survey Meter
Model: Monitor 4
Serial: 61810
Make: LND
Tube Model: 712
Detector: Internal
Input Sens: 2.4VDC
Inst Voltage set: 489VDC

Contamination Check:
Geotropism:
Audio Check:
Recieved: Out of Spec:
Mechanical Check:
Battery Check: 9.49VDC
Tolerance: ± 10% ± 20% Out of Spec

Calibration Data:

S.E. International, Inc. Certifies the above described instrument was calibrated in a known radiation field using a Cs¹³⁷ (662keV) beam calibrator. Transfer instrument MDH Industries, Model 2025 X-Ray Monitor with 1800cc Probe. Calibration is traceable to NIST DG8640/87 GM detectors are positioned perpendicular to source. Measurements of uncertainty are ±5%. This calibration conforms to ANSINCNSL Z540.1.1994, ANSI N323-1978. The results are tabulated below. This certificate may not be reproduced, unless in full, without written approval from S.E. International Inc. **TENNESSEE LICENSE# R-51002-C15**

Precision/Constancy Check performed with Cs¹³⁷ Source s/n 010817 | Precision: ± 10% ± 20%

Constancy Check: 1 uCi of Cs¹³⁷ indicates 0.70 mR/hr when placed against the center of the GM tube from the front of unit.

Reading 1: 0.7 mR/hr	Temperature: 16.6 °C
Reading 2: 0.7 mR/hr	Relative Humidity: 41.3%
Reading 3: 0.7 mR/hr	mmHg: 736.5
Mean: 0.70 mR/hr	

Notes:
 Unit: "Left as Found".

Range Multiplier	Refence Calibration Point	Instrument Meter Reading after Calibration	Correction Factors for > +/- 10% *
X100	40mR/hr	43.0 mR/hr	None
X100	10mR/hr	10.5 mR/hr	None
X10	4mR/hr	4.25 mR/hr	None
X10	1mR/hr	1.04 mR/hr	None
X1	0.4mR/hr	0.416 mR/hr	None
X1	0.1mR/hr	0.103mR/hr	None

** = Range calibrated to electronic standard | * Indicates 1 minute average

Cs137 Gamma 6810 Capsule S/N A-369 and Model 28-5A Calibrator S/N 10291 calibrated monthly for decay
 Multimeter S/N 86820529 Cal Date:12/23/2013 Cal
 Due:12/23/2014

Calibrated by: Robert Russell