REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(AMENDED IN ITS ENTIRETY)

NO. : *NC-646-D-130-S* *DATE:* *May 15, 2025* *Page 1 OF 14*

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

MODEL: 3400 Series: Models 3430, 3430-M, 3430 Plus, **3430P, 3430C,** 3440, 3440-M, 3440 Plus, **3440P, 3440C, 3450.**

MANUFACTURER/DISTRIBUTOR:

Troxler Electronic Laboratories
3008 Cornwallis Road, P.O. Box 12057
Research Triangle Park, NC 27709
(919) 549-8661

SEALED SOURCE MODEL DESIGNATION:

AEA Technology/QSA, Inc.
Model No. CDCW556
Capsule Types XN.30 and X1218
Model No. AMNV.997 Capsule Type X.1
Model No. CVN.1 Capsule Type X.1

Eckert & Ziegler Isotope Products
(Formerly Isotope Products Laboratories)
Model No. HEG-137 Capsule Type 3024
Model No. Am1.No2
Model No. 3021 3027
Model No. HEG-252 Capsule Type 3024

ISOTOPE:	MAXIMUM ACTIVITY:
CS-137	333 MBq (9 mCi)
AM-241:BE	1.63 GBq (44 mCi)
CF-252	2.44 MBq (66 µCi)

LEAK TEST FREQUENCY: 12 months

PRINCIPAL USE: (G) Portable Moisture Density Gauges

CUSTOM DEVICE: ____ YES X NO

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

DESCRIPTION:

The model 3400 series gauges are portable gauges designed to measure the moisture content and density of soils, soil-stone aggregates, cement and asphalt treated bases and asphalt surfacing. There are several models within the 3400 series that will be described.

The moisture measurement is based on the principle of neutron thermalization by hydrogen in the test material and incorporates a neutron emitting doubly or triply encapsulated radioactive source (40 millicuries +/- 10% Am-241:Be or 60 microcuries +/- 10% Cf-252} and a helium-3 proportional counter tube. The neutron source is held stationary in the base of the gauge in a threaded cavity by a threaded plug made of stainless steel and surrounded by lead. A "Caution-Radioactive Material" label indicating the radioisotope, quantity, serial number and assay date covers the threaded plug. The base of the gauge is placed on the material being tested. Fast neutrons emitted by the source traverse the material and are thermalized by hydrogen atoms in the sample. The thermal neutrons are then detected by the helium-3 proportional counter and counted over a specified time period. Because of the insensitivity of these detectors to fast neutrons, the number of thermalized neutrons detected is directly proportional to the number of water molecules present in the material. The instrument electronics convert the count data to a moisture content based on an internally stored calibration.

The density measurement is based on Compton scattering and photoelectric absorption of photons by the test material. Measurements can be made in a "direct transmission mode" or a "backscatter" mode. The gamma source is located near the end of the extendable source rod. Proper use of the gauge in the direct transmission mode consists of first making a hole approximately 0.62511 diameter in the test material with the drill rod provided as an accessory. The gauge is then placed over the hole and the operator pulls a trigger on the source rod handle and inserts the source rod into the test material. The source rod can be inserted to depths from 2” to 12” in increments of either 1” or 2”. An "index rod" or "index strip" on the gauge allows the trigger mechanism to be latched at the desired measurement depth. Geiger detectors located in the base of the gauge detect photons that have traversed the test material. The photons are counted over a specified time period and the number of counts detected is converted to a density value based on an internally stored calibration. A backscatter measurement is made by lowering the source rod so that its tip is essentially flush with the surface of the test

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

DESCRIPTION (Cont.):

material. The gauge is designed so that if the operator attempts to pick it up without first returning the source rod to the shielded position, the trigger in the handle releases and the rod retracts to the shielded position. A padlock is provided with the gauge so that the source rod can be locked in the shielded position when the gauge is not in use.

The density measurement uses a sealed source composed of 8 millicuries (+/- 10%) of Cs-137 in special form. The Cs-137 source is placed in the end of the source rod in a source cup and secured by welding. When retracted into the shielded position, the source is surrounded by tungsten or lead. When the operator engages the trigger and lowers the source rod, the spring-loaded tungsten sliding block is moved back allowing the source rod to be inserted into the test material.

The gauge housing consists of two primary components: the aluminum base casting and the top-shell. The base casting holds the detectors, batteries, sources and shielding. The base is covered with a top-shell made of either aluminum or plastic. The electronic circuit boards for the device are attached to both the base casting and top-shell.

Within the 3400 series, there are several models that can be differentiated as described below.

3430-M & 3440-M:
These models use a 60 microcurie (+/- 10%) Cf-252 neutron source instead of an Am-241:Be source for the moisture measurement.

3430, 3440, 3430-Plus, 3440-Plus, **3430P, 3440P, 3430C, 3440C, 3450:**
These model numbers use an 8 millicurie (+/- 10%) Cs-137 source and a 40 millicurie (+/- 10%) Am-241:Be source.

DETAILS OF CONSTRUCTION:

3430, 3430-M, 3440, 3440-M:
These gauges in the 3400 series use similar materials in their construction. The primary materials used are aluminum, lead, tungsten, and stainless steel. When the handle-source assembly is in the safe position, i.e., at the highest vertical setting, the Cs-137 source is contained in the approximate center of a cylindrical tungsten shield 1.75" in diameter and 3.00" high with a 0.640" diameter center hole through which the source rod passes. The thickness of the tungsten in a radial direction is 0.455".

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

DETAILS OF CONSTRUCTION (Cont.):

At the safe position, the source is shielded on the bottom of the gauge by a spring-loaded tungsten sliding block 2.00" high by 0.750" wide. The minimum thickness of tungsten provided by the sliding block on the bottom of the gauge is 0.702". The entire tungsten shielding is mounted in a cast aluminum base. The Cs-137 source has additional shielding in the form of cast lead approximately 0.450" thick to the rear of the gauge tower. This lead shielding protects the user who comes into contact with the rear of the gauge. There is also approximately 0.37" of cast lead shielding surrounding the aluminum boss housing the neutron source. This lead shielding also serves to protect the user.

3450:
The 3450 use similar materials in their construction. The primary materials used are aluminum, lead, tungsten, and stainless steel. The handle-source assembly comes in either an 8 or 12 inch extendable length. The center hole the source rod passes through is 0.750″ leaving a shielding thickness of 0.500″ of tungsten. The lead block behind the gauge tower in the 3430 is not present in this model. Otherwise the 3450 is similar to the 3430.

3430-Plus, **3430P, 3430C,** 3440-Plus, **3440P, 3440C:**
For these models, the cylindrical tungsten shield is replaced by a cylindrical lead shield. The shield diameter was increased from 1.75" to 2.186" to afford the same level of shielding. The sliding block and shielding for the Am-241:Be source remain the same. The Index Rod has been replaced with an extruded metal tower which includes an indexing strip at the back of the tower. This strip serves the same function as the index rod. Furthermore, the extruded tower provides additional mechanical structure and protection for the source rod. The bioshield has been changed from tungsten to lead and the diameter increased to afford the same shielding effectiveness of tungsten. The Plus gauges contain the same tungsten sliding block. The sliding block orientation has been changed. The block now slides towards **the side** of the gauge and out of the measurement path.

The following subsections describe the major components of the original design and the revisions to those components which have occurred since the 3440 gauge's original release in January 1986:

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

DETAILS OF CONSTRUCTION (Cont.):

Original Design:

A. **Extendable Source Rod (Serial Nos.< 25266): The Cs-137 source, 0.238" diameter, was housed inside of a 0.625" diameter x 1.750"** long stainless steel source cup. Atop the Cs-137 source, within the source cup, was a 0.450" diameter x 0.250" long tungsten spacer, followed by a stainless steel spring. The source cup was then screwed onto a stainless steel source rod and welded.

B. 3430 & 3440 Neutron Source Configuration The doubly encapsulated neutron source (Am-241 :Be) was housed within a threaded cup, approximately 0.5” in diameter x 0.7" deep, located in a boss which was cast as part of the gauge's aluminum base. Between the bottom of the cup and the neutron source, was a 0.44" x 0.062" thick lead plug. The neutron source was secured to the boss by a 0.48" long x 0.5” diameter plain steel (zinc plated) threaded source plug. Once installed, the neutron source is immobile.

C. 3430-M & 3440-M Neutron Source Configuration The neutron source (Cf-252) is housed in an aluminum source holder, atop a lead disk and aluminum spacer, which is attached to the cast aluminum base with steel screws. The neutron source is then secured to the source holder by a threaded stainless steel plug. An aluminum handle is then screwed into the source holder for safer handling during insertion into the gauges. Once installed, the neutron source is immobile.

Revisions to the Original Design:

A. Extendable Source Rod (Serial Nos. > 25265): In November 1995, the Agency authorized a change from the source cup design to a threaded plug design. The Cs-137 source is housed within a 0.62511 diameter x 0.725" long stainless steel source plug. The source plug is screwed into the lower end of a stainless steel rod with a similar diameter, which is machined out to hold a 0.448" x 0.250" thick tungsten disk (abuts the source) and a stainless steel spring. The source rod with source plug are then welded.

B. 3430 & 3440 Neutron Source Configuration In March 1997, the Agency authorized a change to the neutron source configuration to permit the use of either doubly or triply encapsulated Am-241:Be sealed sources. In this design, the aluminum base has been modified such that the threaded cup within the boss is larger, approximately 0.688" in diameter x 0.76" deep. The following descriptions briefly

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

DETAILS OF CONSTRUCTION (Cont.):

C. detail the differences in affixing the doubly and triply encapsulated sealed sources to the base:

1. The doubly encapsulated source sits on two lead disks, each disk approximately 0.625" in diameter x 0.062" thick. An aluminum spacer cap, approximately 0.5” in diameter, which has been machined out at one end, is then placed over the source followed by a threaded stainless steel source cap, approximately 0.688" in diameter.

2. The triply encapsulated source is affixed to the gauge as noted above, less the aluminum spacer and one lead disk.

Please note, the 3430-M and 3440-M source holder design is acceptable for use in the new base design.

LABELING:

The 3400 series gauges are labeled in accordance with 10A NCAC 15 .1601 and 10 CFR 20 Subpart J. The labels contain the radiation symbol, isotope, activity, model number, serial number, name of distributor, and the words "CAUTION-RADIOACTIVE MATERIAL."

The labels are made of stainless steel or aluminum, rectangular in shape, and are permanently attached by rivets or screws to the device, or are stickers variously. A copy of the labels are shown in Attachment H. Sizes and locations are shown in Attachment E and F.

DIAGRAM:

Attachment A: Three Dimensional View of the Source Locations for Models **3430, 3440. 3430-Plus. 3440-Plus, 3430P, 3440P, 3430C, and 3440C.**

Attachment B: Three Dimensional View of the Source Locations for Models 3450.

Attachment C: Gauge Source Locations for Models 3430, 3430-M, 3430C, 3430P, 3440, 3440-M, 3440C, 3440P.

Attachment D: Gauge Label Locations for Models 3430, 3430-M, 3430C, 3430P, 3440, 3440-M, 3440C, 3440P.

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

DIAGRAM (Cont.):

Attachment E: Label locations for the Model 3450.

Attachment F: Gauge Source and Label Locations for Models 3430 Plus and 3440 Plus.

Attachment G: Source Locations for Models 3430 Plus and 3440 Plus in Transport Case.

Attachment H: Labels.

CONDITIONS OF NORMAL USE:

The 3400 series portable gauges are designed to be used by trained personnel to measure moisture and density of soils, aggregates and paving materials, typically at temporary job sites. The user will normally be near the device only for the time period necessary to set up the gauge and perform the measurement. The gauge has a recommended working life of 30 or more years under normal use conditions and with proper maintenance. However, the gauge should be returned to Troxler Electronics Laboratories, Inc. (hereafter Troxler) every five years for a thorough manufacturer's inspection, to include an extensive inspection of the extendable source rod and its welds.

The device is designed for the following environments:

Operating temperature	-10°C to 70°C ambient
Pressure	Atmospheric
Vibration	Ranges from zero to mild (tested @ a displacement of 0.1" @ 12.5 Hz)
Corrosion	Ranges from zero to corrosive
Fire	+327°C (to melt the lead shielding used in the base casting around the Am-241:Be source and the lead bioshield in the 3430 Plus, 3430P, 3430C and 3440 Plus, 3440P, 3440C)

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

PROTOTYPE TESTING:

The 3400 series model gauges underwent prototype testing for mechanical, structural, and radiological integrity using measurement methodologies and testing procedures found in ANSI Standard N538-1979. This prototype testing included stray radiation measurements of gamma dose rates at 5 cm, 30 cm, and 100 cm for the gauges in both the "on" and "off' configurations; testing of the gauges' safety features at room temperature and at an elevated use temperature of 105°C, and at a decreased use temperature of **-40**°C; a leak test of the radioactive source after the safety feature/temperature testing; and an engineering evaluation of the likelihood of source retention in the source housing following a severe accident involving fire. The results of the testing showed: (1) no safety feature failure or stray radiation increase over the range of temperatures tested; (2) no loss of radioactive material from the sealed source; and (3)no loss of the shielding integrity of the device at temperatures below 327°C. Although a 327°C temperature would not, based on the ANSI classification of the source capsule, result in leakage of radioactive material, such a temperature would melt the lead shielding used in the cylindrical shield and in the base of the gauge. At this temperature, there would be a loss of some degree of shielding around the Cs-137 source rod and the Am-241:Be capsules although the capsule would remain captive in the source rod and base of the gauge respectively. The results of the prototype testing support the assignment of an ANSI standard rating of ANSI-54-164-154-Rl. ANSI testing for the 3430 Plus and 3440 Plus were conducted by the applicant. Results of that testing indicate an ANSI standard rating of ANSI-54-154-154-Rl.

The 3450 prototype testing meets the requirements of ANSI-54-663-664-R2, following the testing procedures in ANSI Standard N43.8-1979. All appears similar except that the manufacturers statements cite retention of source up to 660°C, instead of shielding integrity up to 327°C.

The sealed sources used in the device have been tested by their manufacturers and have achieved the following ANSI (ANSI N-43.6-1997 or ISO 2919-1999) or older equivalent classifications:

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

PROTOTYPE TESTING (Cont.):

Manufacturer	Model	ANSI Classification
AEA Technology/QSA, Inc.	Model No. CDC.W556 Capsule Types XN.30 and X1218	97C64444
AEA Technology/QSA, Inc.	Model No. AMNV.997 Capsule Type X.1	97C66545
AEA Technology/QSA, Inc.	Model No. CVN.1 Capsule Type X.1	Unknown (Historical)
Eckert & Ziegler Isotope Products	Model No. HEG-137, or HEG-252 Capsule type 3024	77C66535
Eckert & Ziegler Isotope Products	Model No. Am1.No2	77C66545
Eckert & Ziegler Isotope Products	Model No. 3021	99C63433
Eckert & Ziegler Isotope Products	Model No. 3027	77C66544

EXTERNAL RADIATION LEVELS:

The following dose rates were reported by the manufacturer for Model 3430 moisture and density gauge containing a nominal 296 MBq (8.0 mCi) of Cs-137 and 1.48 GBq (40 mCi) of Am-241:Be. Gamma measurements were performed with a Ludlum 14C survey Meter calibrated March 9, 1990, and neutron measurements were performed with a Nuclear Research Corp Model NP-2 survey meter calibrated March 22, 1990.

Table 1

Distance		**Maximum Radiation Level 3430 Gauge**			
		Without case		**With case**	
(cm)	**(inches)**	**(microSv/h)**	**(mrem/h)**	**(microSv/h)**	**(mrem/h)**
surface	surface	274	27.4	107	10.7
30	11.81	30	3.0	22	2.2
100	39.37	4	0.4	3	0.3

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

EXTERNAL RADIATION LEVELS (Cont):

The following dose rates were reported by the manufacturer for Model 3440 moisture and density gauge containing a nominal 296 MBq (8.0 mCi) of Cs-137 and 1.48 GBq (40 mCi) of Am-241:Be. Gamma measurements were performed with a Ludlum 14C survey Meter calibrated September, 1987, and neutron measurements were performed with a Nuclear Research Corp Model NP-2 survey meter calibrated March 1988.

Table 2

Distance		**Maximum Radiation Level 3440**			
		Without case		**With case**	
(cm)	**(inches)**	**(microSv/h)**	**(mrem/h)**	**(microSv/h)**	**(mrem/h)**
Surface	Surface	205	20.5	132	13.2
30	11.81	32	3.2	26	2.6
100	39.37	6.5	0.65	6	0.6

The following dose rates were reported by the manufacturer for Model 3430-M and 3440-M moisture and density gauge containing a nominal 296 MBq (8.0 mCi) of Cs-137 and 2.22 MBq (0.06 mCi) of Cf-252. Gamma measurements were performed with a Ludlum 14C survey Meter calibrated January 7, 1991, and neutron measurements were performed with a Nuclear Research Corp Model NP-2 survey meter calibrated April 18, 1991.

Table 3

Distance		**Maximum Radiation Level 3430-M/3440-M**			
		Without case		**With case**	
(cm)	**(inches)**	**(microSv/h)**	**(mrem/h)**	**(microSv/h)**	**(mrem/h)**
Surface	Surface	340	34.0	130	13.0
30	11.81	40	4.0	30	3.0
100	39.37	9	0.9	6	0.6

The following dose rates were reported by the manufacturer for Model 3450 moisture and density gauge containing a nominal 296 MBq (8.0 mCi) of Cs-137 and 1.48 GBq (40 mCi) of Am-241:Be. Gamma measurements were performed with a Bicron Micro Rem Survey meter, Serial Number B464Y Calibrated February 1998, and neutron measurements were performed with a Nuclear Research Corp Model NP-2 survey meter Serial Number 183404 calibrated February 1998.

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

EXTERNAL RADIATION LEVELS (Cont):

Table 4

Distance		**Maximum Radiation Level 3450**			
		Without case		**With case**	
(cm)	**(inches)**	**(microSv/h)**	**(mrem/h)**	**(microSv/h)**	**(mrem/h)**
Surface	Surface	70	7.0*	40	4.0*
30	11.81	20	2.0	12	1.2
100	39.37	4	0.4	3	0.3

** Gamma only measurement*

QUALITY ASSURANCE AND CONTROL:

Troxler Electronic Laboratories maintains a quality assurance and control program which has been deemed acceptable for licensing purposes by the North Carolina Radiation Protection Section. A copy of the program is on file with the Radiation Protection Section.

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE:

• The device shall be distributed to persons specifically licensed by the NRC or an Agreement State.

• Handling, storage, use, transfer, and disposal: To be determined by the licensing authority.

• The device shall be leak tested at intervals not to exceed 12 months using techniques capable of detecting 185 Bq (0.005 µCi) of removable contamination.

• This registration sheet and the information contained within the references shall not be changed without the written consent of the North Carolina Department of Health and Human Services.

• The 3400 series devices require periodic maintenance of two specific gauge components by the gauge user. The scraper ring/sliding block require periodic cleaning and lubrication, and the source rod bearings require lubrication. The maintenance should be performed according to the· manufacturer's instructions located in the operation and instruction manual. In addition, the gauge should be returned every five years for a thorough manufacturer's inspection of the gauge, to include an extensive inspection of the extendable source rod and its pertinent welds. Servicing of the source rod, including but not limited to source replacement, general servicing, repair, and/or disposal, shall be done by the manufacturer.

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE (Cont.):

• The device shall be operated in accordance with the written operating and safety instructions given in the device manual. The source rod **shall not** be driven or forced into the material to be tested; rather, a hole must be formed in the test material with the "drill rod" accessory provided with the gauge. The licensee should not attempt to remove the source rod from the gauge unless specifically authorized by their specific license.
• Use of these gauges is limited to individuals who have completed an approved training class in the basic principles of radiation safety and the proper use of these gauges. Please note, Troxler provides a training program for gauge users.

• Any time the gauge is not being used to make a measurement or is not under the physical surveillance of the operator, the source rod should be locked in the safe position. The operator should periodically inspect the source rod release mechanism and the gauge for loose and worn components. If any damaged components are found, the gauge should be returned immediately to the manufacturer for servicing.

SAFETY ANALYSIS SUMMARY:

• Based on our review of the information and test data cited below and the past history of similar designs, we continue to conclude that the these devices are acceptable for licensing purposes.

• Furthermore, we continue to conclude that these devices would be expected to maintain their integrity for normal and accidental conditions of use which might occur during the uses specified in this registration sheet.

• The Models 3401/3401-B and 3411/3411-B are included with the 3400 series gauges referenced in this sheet for licensing purposes. These gauges are no longer manufactured by Troxler. However, they will be accepted by Troxler for servicing and disposal. These models have been transferred to SSDR# NC-646-D-830-S.

• The Model 3450 Registration Certificate (NC-646-D-138-S) has been moved to this registry certificate and is still in active distribution.

• The Model 3451 Registration Certificate (NC-646-D-138-S) has been moved to inactive status (See SSDR # NC-646-D-832-S).

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

SAFETY ANALYSIS SUMMARY (Cont.):

- The documentation enclosed with the device upon shipment to the user shall include the following:
  1. manual of operation and instruction,
  2. special form certificate,
  3. type "A" package testing results,
  4. a copy of the final leak test results made prior to packaging,
  5. bill of lading,
  6. an emergency response information sheet,
  7. Troxler gauge certificate,
  8. Troxler transportation guide.

REFERENCES:

The following supporting documents for these models are hereby incorporated by reference and are made a part of this registry document.

- All information and engineering drawings submitted by Troxler in the application for a safety analysis of the 3400 series gauges and currently contained in the gauge SS&D review file;
- The operating and instruction manual for the 3400 series gauges;
- Testing results for the classification of the Type "A" packages for 3430 and 3440 gauges;
- Test results from prototype testing carried out on the 3400 series gauges;
- Troxler Quality Assurance manual, Revision 4, June 26, 1997; and
- Sealed Source & Device Registry Certificate No. NC-646-D-130-S originally issued in October of 1984.
- Letter dated February 25, 2000, signed by Stephen A. Browne, Corporate Radiation Safety Officer.
- Letter with attachments dated November 21, 2001 and facsimile dated November 28, 2001, both signed by Stephen A. Browne, Corporate RSO.
- Letter with attachments dated February 07, 2007, signed by Stephen A. Browne, Corporate R.S.O. and electronic message with attachment dated February 14, 2007.
- Electronic message with attachments dated February 21, 2007 from Stephen A. Browne, Corporate R.S.O.
- Application for amendment dated October 4, 2024, signed by William F. Troxler, Jr. President & CEO, with additional electronic communications from Robyn Meyers dated, December 17, 2024, and December 18, 2024, March 16, 2025, May 12, 2025, and May 13, 2025.

DEVICE TYPE: *Portable Surface Moisture and Density Gauges*

ISSUING AGENCY:

North Carolina Department of Health and Human Services, Division of Health Service Regulation, Radiation Protection Section, Radioactive Materials Branch.

Date: 5/15/2025 Reviewer: Caleb Smith

Caleb Smith, HP II

Date: 5/15/2025 Concurrence:

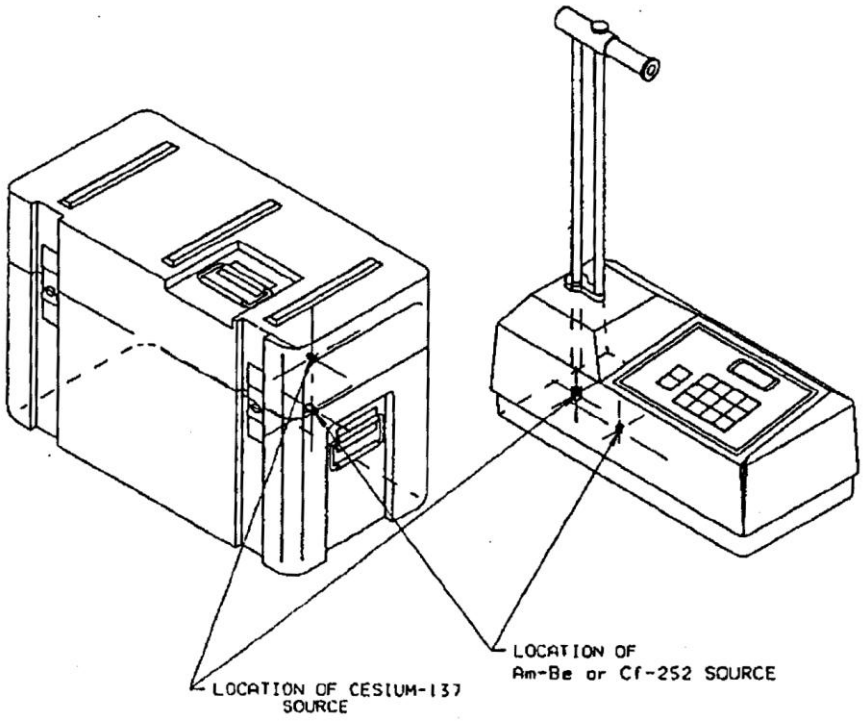
Chinwe Ekwuribe, HP II

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(AMENDS IN ITS ENTIRETY) - Remove for Inactivation, or new

NO. : NC-646-D-130-S DATE: May 15, 2025 ATTACHMENT 1 of 8

DEVICE TYPE: Portable Surface Moisture and Density Gauges

Attachment A: Three Dimensional View of the Source Locations for Models 3430, 3440. 3430-Plus. 3440-Plus, **3430P, 3440P, 3430C, and 3440C.**

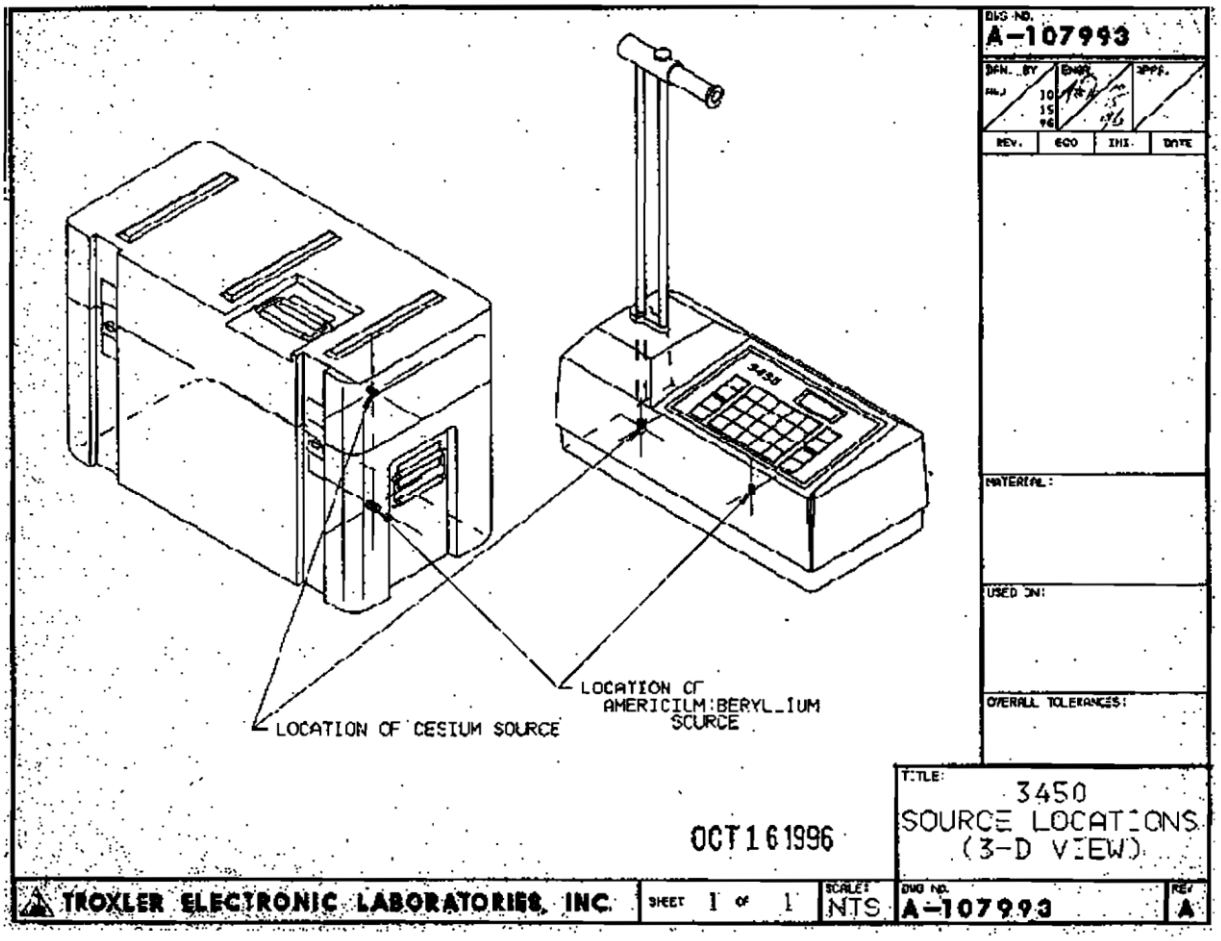


REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(AMENDS IN ITS ENTIRETY) - Remove for Inactivation, or new

NO. : NC-646-D-130-S DATE: May 15, 2025 ATTACHMENT 2 of 8

DEVICE TYPE: Portable Surface Moisture and Density Gauges

Attachment B: Three Dimensional View of the Source Locations for Model 3450



REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
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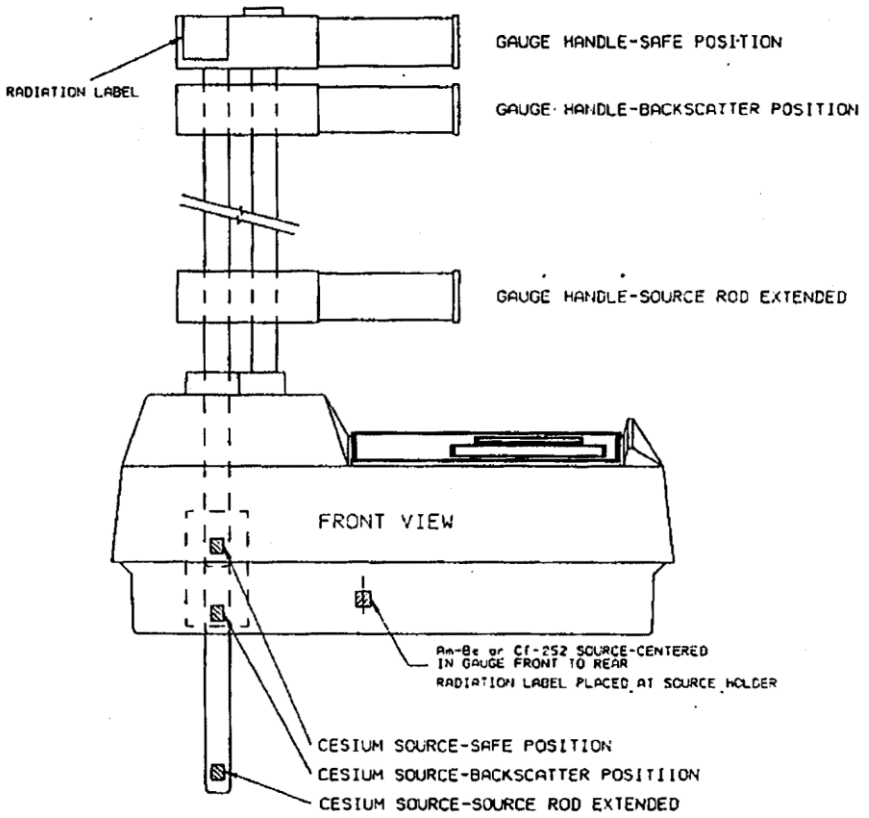
NO. : NC-646-D-130-S DATE: May 15, 2025 ATTACHMENT 3 of 8

DEVICE TYPE: Portable Surface Moisture and Density Gauges

Attachment C: Gauge Source Locations for Models 3430, 3430-M, **3430C, 3430P,** 3440, 3440-M, **3440C, 3440P**

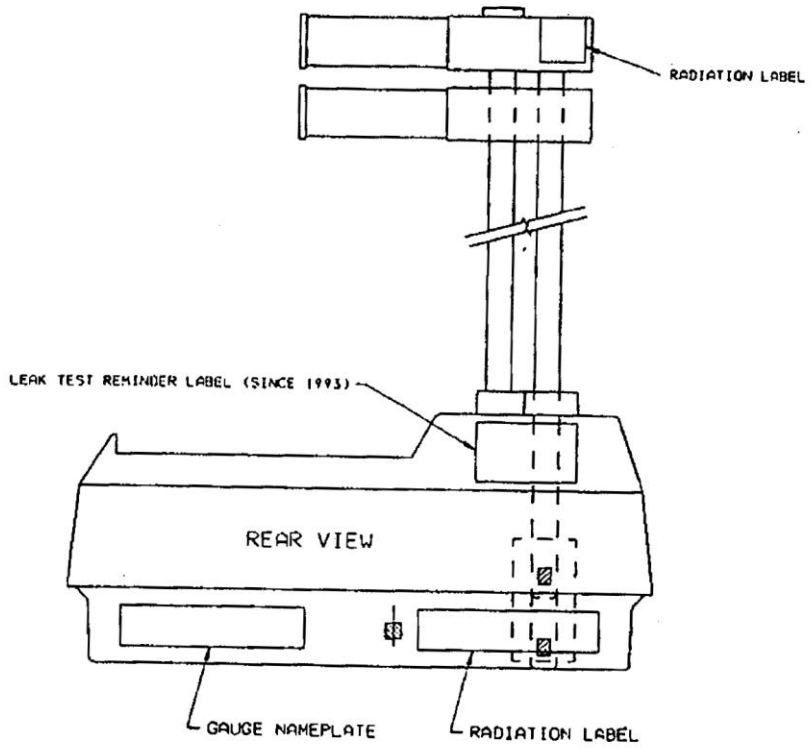


REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(AMENDS IN ITS ENTIRETY) - Remove for Inactivation, or new

NO. : NC-646-D-130-S DATE: May 15, 2025 ATTACHMENT 4 of 8

DEVICE TYPE: Portable Surface Moisture and Density Gauges

Attachment D: Gauge Label Locations for Models 3430, 3430-M, 3440, 3440-M

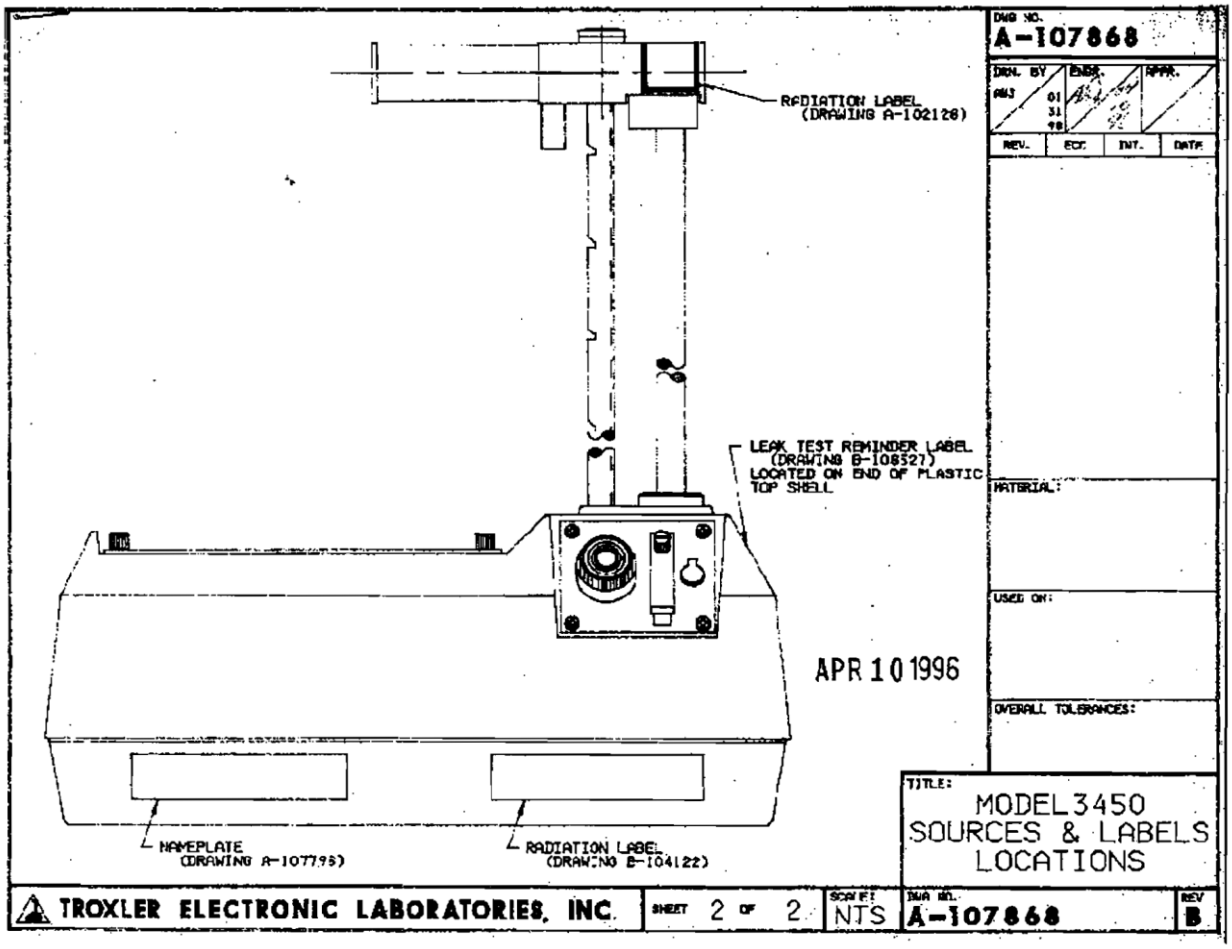


REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(AMENDS IN ITS ENTIRETY) - Remove for Inactivation, or new

NO. : NC-646-D-130-S DATE: May 15, 2025 ATTACHMENT 5 of 8

DEVICE TYPE: Portable Surface Moisture and Density Gauges

Attachment E: Label locations for the Model 3450

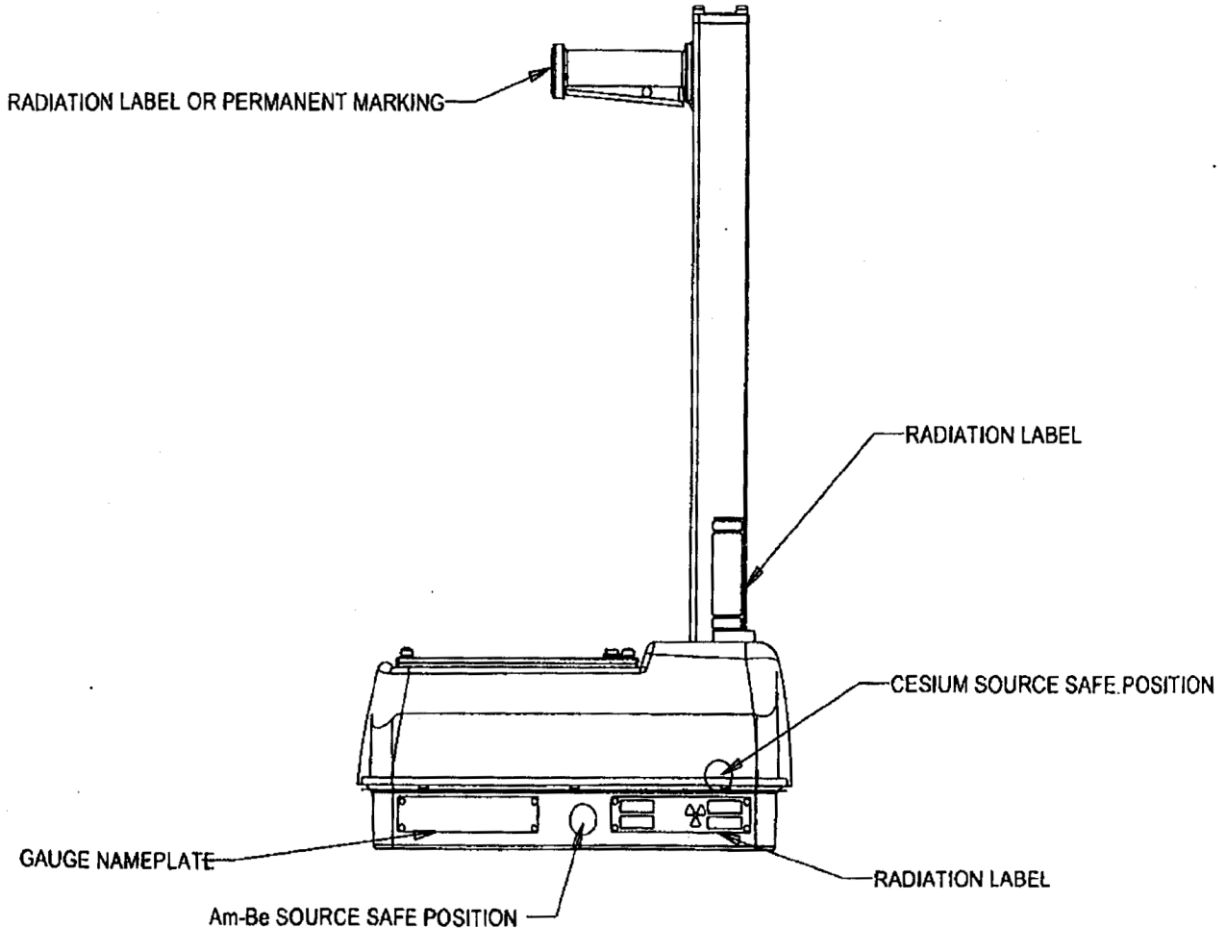


REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(AMENDS IN ITS ENTIRETY) - Remove for Inactivation, or new

NO. : NC-646-D-130-S DATE: May 15, 2025 ATTACHMENT 6 of 8

DEVICE TYPE: Portable Surface Moisture and Density Gauges

Attachment F: Gauge Source and Label Locations for Models 3430 Plus, **3430C, 3430P,** and 3440 Plus, **3430C, 3430P.**

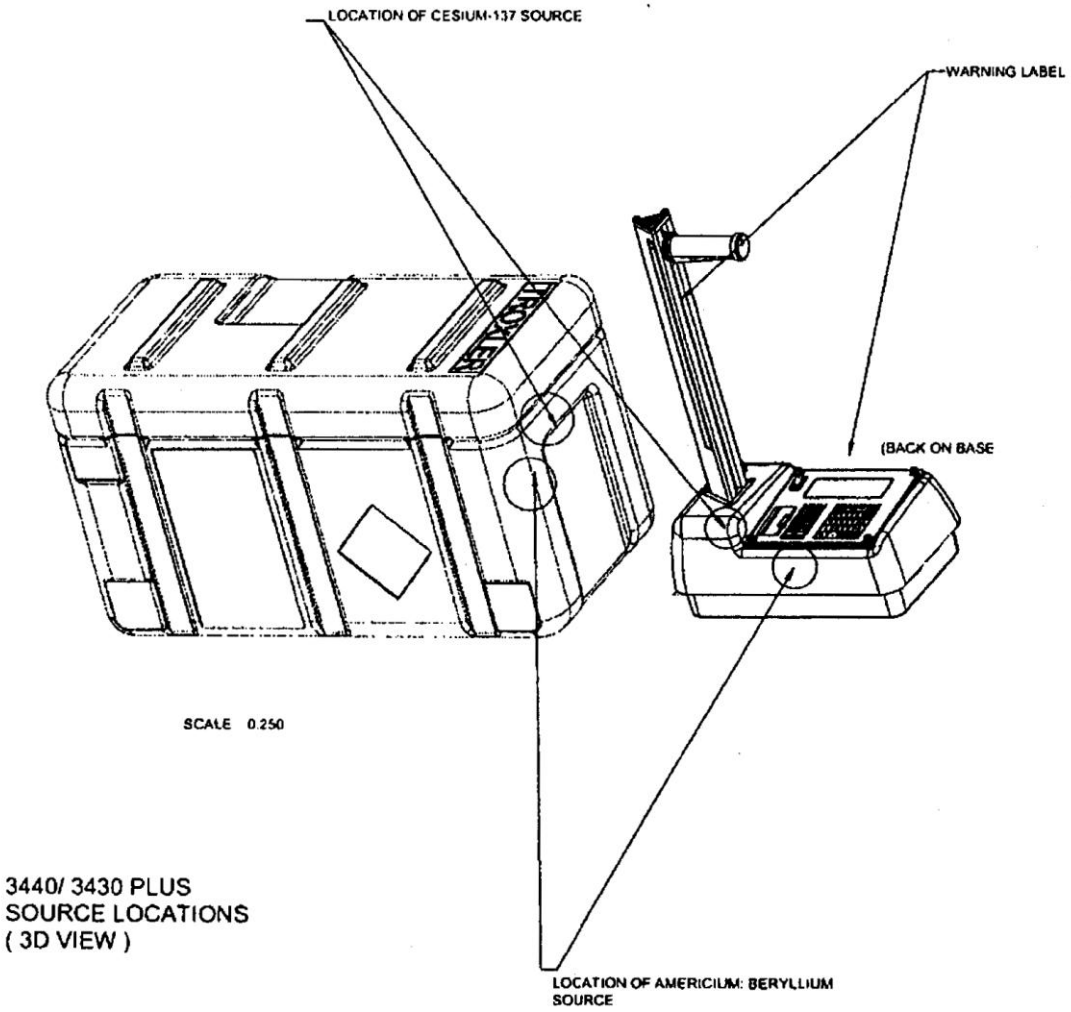


REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(AMENDS IN ITS ENTIRETY) - Remove for Inactivation, or new

NO. : NC-646-D-130-S DATE: May 15, 2025 ATTACHMENT 7 of 8

DEVICE TYPE: Portable Surface Moisture and Density Gauges

Attachment G: Source Locations for Models 3430 Plus, **3430C, 3430P,** and 3440 Plus, **3430C, 3430P,** in Transport Case



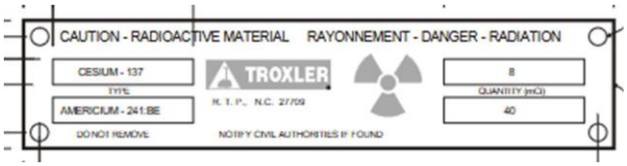
REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(AMENDS IN ITS ENTIRETY) - Remove for Inactivation, or new

NO. : NC-646-D-130-S DATE: May 15, 2025 ATTACHMENT 8 of 8

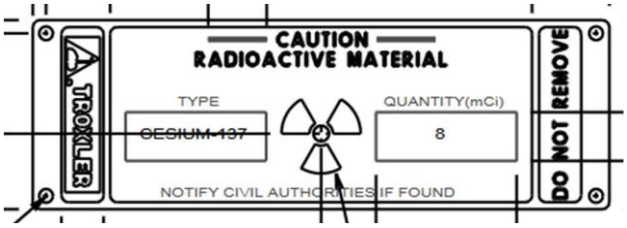
DEVICE TYPE: Portable Surface Moisture and Density Gauges

Attachment H: Labels

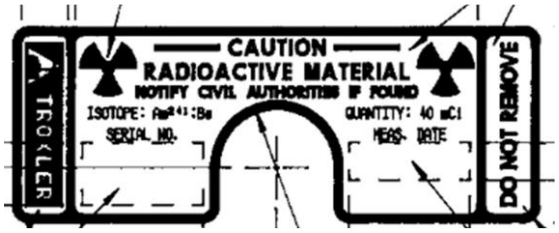
Metallic Radiation Label



Radiation Label Sticker – Cesium Source



Radiation Label Sticker– Americium Source



Metallic Nameplate label. General information such as web address and patent information will be in center area of this label.

Sample, appropriate model designation will be present on label