Golder Associates Inc.

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www.golder.com

August 31, 2007

Mr. Craig Gordon
US Nuclear Regulatory Commission
Division of Nuclear Safety
475 Allendale Road
King of Prussia, PA 19406

03031907/2007001

RE: GOLDER ASSOCIATES INC. INSPECTION ON AUGUST 22, 2007
LICENSE NUMBER 29-28576-01

Dear Mr. Gordon:

Please find the following information regarding details and documentation that was requested during your inspection at our Mt Laurel office on August 22, 2007. Mr. Kevin Dunsmore (RSO) was not at the Mt Laurel office during your inspection. Since his return, much of the requested information was located in files throughout the office. It is our intent to relocate all such files to a central location in the Mt. Laurel office file room. The following items represent issues from notes prepared by office personnel that you met during the inspection as well as discussed with Mr. Dunsmore over the telephone on August 22, 2007:

- 2002 NOV letter and response addressed internal audits. Our files indicate audits were completed at Lansing, MI and Richmond, VA offices in 2002 and have not been found for subsequent years. We conducted an internal audit in Mt. Laurel on August 28, 2007. Copies of these audits are included in Attachment 1. We have scheduled audits for both Lansing and Richmond for the third week of October.

- Contact information and training certificates for the delegated RSOs at other offices are included in the organizational chart in Attachment 2.

- Inventory list and tracking of instruments, and leak test information in chronological order is included in Attachment 3. Additional documentation for decommissioned instruments is forthcoming from Troxler Electronics.

- Emergency local contact information and travel documentation that is sent with each instrument included in Attachment 4.

- A current list of gauge users is included in Attachment 5. This also includes personnel using dosimeters, and also DOT Hazmat training. Personnel delinquent in DOT Hazmat training have been scheduled for a DOT Hazmat training course by Troxler Electronics October 10, 2007, in Essington, PA. All personnel with the possibility of instrument use have been put under dosimeter monitoring.

- A copy of the New York State License is included in Attachment 6.

- The Troxler storage room in the Mt Laurel office is being secured with a wire mesh (fence) material over the open roof. We will continue to lock the Field Equipment Office door until the roofing has been permanently secured.

- Golder Associates Inc. owns a Ludlum Model 19 microR meter which is temporarily in the field at one of the sites we are working at and will be returned to the Mt Laurel office during September. The file for the survey meter and calibration/maintenance has been established in the Mt Laurel office central files. Copies of the invoice and calibration are included in Attachment 7. This also includes directions to the current location of survey meter. Survey meter is scheduled for return to the office in mid-September.

Please feel free to call the undersigned at 856-793-2005 if you have any further questions.

Very truly yours,

GOLDER ASSOCIATES INC.

Kevin T. Dunsmore
Radiation Safety Office

James P. Valenti, P.G.
Senior Consultant

Attachments

Attachment 1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

February 7, 2002

Docket No. 03031907 License No. 29-28576-01

Peter P. Swinick
Principal-in-Charge
Golder Associates, Inc
1951 Old Cuthbert Road, Suite 301
Cherry Hill, NJ 08034

SUBJECT: INSPECTION 03031907/2002001, GOLDER ASSOCIATES, INC, CHERRY HILL, NEW JERSEY SITE AND NOTICE OF VIOLATION

Dear Mr. Swinick:

On January 28, 2002, Jenny Johansen of this office conducted a safety inspection at the above address of activities authorized by the above listed NRC license. The inspection was an examination of your licensed activities as they relate to radiation safety and to compliance with the Commission's regulations and the license conditions. The inspection consisted of observations by the inspector, interviews with personnel, and a selected examination of representative records. Additional information provided in a telephone conversation on February 5, 2002 between Lynn Huselton of your organization and Ms. Johansen was also examined as part of the inspection. During the discussions of our findings with you by telephone on February 6, 2002, the inspector expressed our concern over the control of your licensed program in that lines of communication and reporting responsibilities have not been established between the Radiation Safety Officer (RSO) and those individuals appointed as RSOs at your Lansing, MI and Richmond, VA sites authorized by the license. In your response to this letter, please discuss the steps you have taken to assure that the RSO has appropriate oversight of the content and implementation of your licensed radiation safety program, including the activities at the Virginia and Michigan sites.

Based on the results of this inspection, it appears that your activities were not conducted in full compliance with NRC requirements. A Notice of Violation is enclosed that categorizes the violation by severity level in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions, "(Enforcement Policy), NUREG 1600. You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. In your response, you should document the specific actions taken and any additional actions you plan to prevent recurrence. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. After reviewing your response to this Notice, including your proposed corrective actions and the results of future inspections, the NRC will determine whether further NRC enforcement action is necessary to ensure compliance with NRC regulatory requirements.

In accordance with 10 CFR 2.790, a copy of this letter will be placed in the NRC Public Document Room and will be accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html.

Your cooperation with us is appreciated.

Sincerely,

John D. Kinneman, Chief
Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety

Enclosure:
Notice of Violation

cc:
Lynn A. Huselton, Radiation Safety Officer
State of New Jersey

NOTICE OF VIOLATION

Golder Associates, Inc
Cherry Hill, NJ

Docket No. 03031907
License No. 29-28576-01

During an NRC inspection conducted on January 28, 2002, one violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy), NUREG-1600, the violation is listed below:

> 10 CFR 20.1101(a) and (c) require, in part, that a licensee develop, document, and implement a radiation protection program commensurate with the scope and extent of licensed activities and sufficient to ensure compliance with the provisions of Part 20, and periodically (at least annually) review the radiation protection program content and implementation.
>
> Contrary to the above, as of January 28, 2001, the licensee had not periodically (at least annually) reviewed the radiation protection program content and implementation. Specifically, the licensee had no formal audit program which includes the review and documentation of the radiation safety program content and implementation at the Virginia and Michigan authorized locations of use and the licensee has not documented audits performed at the New Jersey site.
>
> This is a Severity Level IV violation (Supplement IV).

Pursuant to the provisions of 10 CFR 2.201, Golder Associates, Inc is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, with a copy to the Regional Administrator, Region I, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, any response which contests an enforcement action shall be submitted under oath or affirmation.

Your response will be placed in the NRC Public Document Room (PDR) and on the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html. To the extent possible, it should, therefore, not include any personal privacy, proprietary, or safeguards information so that it can be made

publically available without redaction. However, if you find it necessary to include such information, you should clearly indicate the specific information that you desire not to be placed in the PDR, and provide the legal basis to support your request for withholding the information from the public.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated This 7 day of February 2002

Golder Associates Inc.

1951 Old Cuthbert Road, Suite 301
Cherry Hill, NJ 08034
Telephone (856) 616-8166
Fax (856) 616-1874

March 5, 2002

United States Nuclear Regulatory Commission
Washington, D.C. 20555
ATTN: Document Control Desk

RE: REPLY TO NOTICE OF VIOLATION

The 'Notice of Violation' Docket No. 03031907 dated February 11, 2002, states the following in pertinent part:

> 10CFR 20.1101(a) and (c) require, in part that a licensee develop, document, and implement a radiation protection program commensurate with the scope and extent of licensed activities and sufficient to ensure compliance with the provisions of Part 20, and periodically (at least annually) review the radiation protection program content and implementation.
>
> Contrary to the above, as of January 28, 2001, the licensee had not periodically (at least annually) reviewed the radiation protection program content and implementation. Specifically, the licensee had no formal audit program, which includes the review and documentation of the radiation safety program content and implementation at the Virginia and Michigan authorized locations of use and the licensee has not documented audits performed at the New Jersey site.

In reply to the above, as it would pertain to (1) the reason for the violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that have been taken to avoid further violations, and (4) the date when full compliance will be achieved, Golder Associates Inc. offers the following:

Part A - New Jersey 10 CFR 20.11 (a) and (c) Documentation

1. Although the Radiation Safety Officer (RSO) at the New Jersey site on a routine basis performed reviews of the radiation protection program content and implementation, formal documentation could not be produced for all reviews. This was an oversight by the RSO and a partial misinterpretation of 10 CFR 20.11.
2. Following the NRC inspection conducted on January 28, 2002, an internal audit was completed, documented, and filed, dated January 29, 2002.
3. As a corrective step to avoid this in the future, internal audits will be preformed on a bi-annual basis and documentation of the audits will be supplied to the Golder Associates Inc. Human Resource Department in the New Jersey office as well as maintained on-site storage, so there are no deficiencies in audit performance records.
4. Full compliance date: January 29, 2002.

Part B – Virginia and Michigan authorized locations:

1. Through miscommunication between New Jersey site RSO and appointed Michigan and Virginia site location RSOs, the required documentation was complete but not currently available in the New Jersey office at the time of the audit.

2. Following the NRC inspection conducted on January 28, 2002, copies of all required documentation was forwarded from the Michigan and Virginia site locations and is currently on file at the New Jersey site.
3. As a corrective step to avoid this in the future, a documentation procedures list was compiled and issued to the Michigan and Virginia locations on February 18, 2002. This procedure list states in detail all the information that is required to be submitted to the New Jersey site RSO. These procedures will be followed up with routine correspondence to the Michigan and Virginia site location from the New Jersey site to insure that information is kept at a current status. In addition, off-site performance audits will be completed by the RSO of the New Jersey site at the Michigan and Virginia site locations on an annual basis. Documentation of these performance audits will be kept on file at the New Jersey site, and the Michigan and Virginia site locations.
4. a. Full compliance date for the documentation requirement from Michigan and Virginia site locations to the New Jersey site: January 29, 2002
   b. Full compliance date for annual performance audits at Michigan and Virginia site locations by the RSO at the New Jersey site: March 29, 2002.

If there are any questions or comments in regard to this **Reply To Notice Of Violation**, or if there is any other way we can be in assistance, please do not hesitate to contact us.

Very truly yours,

GOLDER ASSOCIATES INC.

Peter P. Swinick
Principal-in Charge

PPS/lrl
G:\FIELD EQUIPMENT\NOV RESPONSE.DOC

cc: Regional Administrator
United States Nuclear Regulatory Commission
Region 1
475 Allendale Road
King of Prussia, PA 19406-1415

Richmond, VA

3-15-02

Appendix F

Portable Gauge Audit Checklist

Note: All areas indicated in audit notes may not be applicable to every license and may not need to be addressed during each audit.

Licensee's name: Golden Associates License No. 29-28576-01

Auditor: Lynn A. Ausecon (RSO) Date of Audit 3/15/02 Telephone No. 856-616-8166

(Signature)

1. AUDIT HISTORY

a. Last audit of this location conducted on (date) N/A.

b. Were previous audits conducted yearly? [10 CFR 20.1101] NO

c. Were records of previous audits maintained? [10 CFR 20.2102] N/A

d. Were any deficiencies identified during the last two audits or two years, whichever is longer? N/A

e. Were corrective actions taken? (Look for repeated deficiencies). N/A

2. ORGANIZATION AND SCOPE OF PROGRAM

a. If the mailing address or places of use changed, was the license amended? YES

b. If ownership changed or bankruptcy was filed, was prior NRC consent obtained or was NRC notified? N/A

c. If the RSO was changed, was the license amended? Does the new RSO meet NRC training requirements? NO

d. If the designated contact person for NRC changed, was NRC notified? N/A

e. Does the license authorize all of the NRC-regulated radionuclides contained in the gauges possessed? YES

f. Are the gauges as they are described in the Sealed Source and Device (SSD) Registration Certificate or Sheet? YES Are copies of (or access to) SSD Certificates available? YES Does the licensee have the manufacturers' manuals for operation and maintenance? YES [10 CFR 32.210]

g. Are the actual uses of gauges consistent with the authorized uses listed on the license? YES

h. Is the RSO fulfilling his/her duties? YES

3. TRAINING AND INSTRUCTIONS TO WORKERS

a. Were all workers who are likely to exceed 100 mrem/yr instructed per 10 CFR 19.12? Was refresher training provided, as needed? YES YES

b. Did each gauge operator attend an approved course before using the gauges? YES

c. Are training records maintained for each gauge operator? YES

d. Did interviews with operators reveal that they know the emergency procedures? YES

e. Did this audit include observation of operators using the gauge in a field situation? NO Operating gauge? NO Performing routine cleaning and lubrication? NO Transporting gauge? NO Storing gauge? NO YES

f. Did the operator demonstrate safe handling and security during transportation, use, and storage? YES

g. Was HAZMAT training (required at least once every three years) provided as required? [49 CFR 172.700, 49 CFR 172.701, CFR 172.702, 49 CFR 172.703, 49 CFR 172.704] YES

4. RADIATION SURVEY INSTRUMENTS

a. If the licensee possesses its own survey meter, does the survey meter meet NRC's criteria? N/A

b. If the licensee does not possess a survey meter, are specific plans made to have one available? YES

c. Is the survey meter needed for non-routine maintenance calibrated as required? N/A [10 CFR 20.1501]

d. Are calibration records maintained? [10 CFR 20.2103(a)] N/A

5. GAUGE INVENTORY

a. Is a record kept showing the receipt of each gauge? [10 CFR 30.51(a)(1)] YES

b. Are all gauges received physically inventoried every 6 months? YES

c. Are records of inventory results with appropriate information maintained? YES

6. PERSONNEL RADIATION PROTECTION

a. Are ALARA considerations incorporated into the radiation protection program? YES [10 CFR 20.1101(b)]

b. Is documentation kept showing that unmonitored users receive less than 10 percent of limit? NO

c. Did unmonitored users' activities change during the year which could put them over 10 percent of limit? NO

d. If yes to c. above, was a new evaluation performed?

e. Is external dosimetry required (user receiving greater than 10 percent of limit)? Is dosimetry provided to users? Yes

   i. Is the dosimetry supplier NVLAP-approved? [10 CFR 20.1501(c)] Yes

   ii. Are the dosimeters exchanged monthly for film badges and at the industry-recommended frequency for TLDs? Quarterly

   iii. Are dosimetry reports reviewed by the RSO when they are received? Yes

   iv. Are the records NRC forms or equivalent? [10 CFR 20.2104(d), 10 CFR 20.2106(c)] Yes

   - NRC-4 "Cumulative Occupational Exposure History" completed? Yes
   - NRC-5 "Occupational Exposure Record for a Monitoring Period" completed? Yes

   v. If a worker declared her pregnancy, did licensee comply with 10 CFR 20.1208? N/A Were records kept of embryo/fetus dose per 10 CFR 20.2106(e)? N/A

f. Are records of exposures, surveys, monitoring, and evaluations maintained? [10 CFR 102, 10 CFR 20.2103, 10 CFR 20.2106] Yes

7. PUBLIC DOSE

a. Are gauges stored in a manner to keep doses below 100 mrem in a year? [10 CFR 1301(a)(1)] Yes

b. Has a survey or evaluation been performed per 10 CFR 20.1501(a)? No Have there been any additions or changes to the storage, security, or use of surrounding areas that would necessitate a new survey or evaluation? No

c. Do unrestricted area radiation levels exceed 2 mrem in any one hour? [10 CFR 0.1301(a)(2)]

d. Are gauges being stored in a manner that would prevent unauthorized use or removal? [10 CFR 20.1801] No survey Yes

e. Are records maintained? [10 CFR 20.2103, 10 CFR 20.2107] Yes

8. OPERATING AND EMERGENCY PROCEDURES

a. Have operating and emergency procedures been developed? Yes

b. Do they contain the required elements? Yes

c. Does each operator have a current copy of the operating and emergency procedures, including current telephone numbers? Yes

9. LEAK TESTS

a. Was each sealed source leak tested every 6 months or at other prescribed intervals? Yes

b. Was the leak test performed as described in correspondence with NRC and according to the license? Yes

c. Are records of results retained with the appropriate information included? Yes

d. Were any sources found leaking and if yes, was NRC notified? no N/A

10. MAINTENANCE OF GAUGES

a. Are manufacturer's procedures followed for routine cleaning and lubrication of the gauge? Yes

b. Does the source or source rod remain attached to the gauge during cleaning? Yes

c. Is non-routine maintenance performed where the source or source rod is detached from the gauge? Y If yes, was it performed according to license requirements (e.g., extent of work, individuals performing the work, procedures, dosimetry, survey instrument, compliance with 10 CFR 20.1301 limits)? Yes

11. TRANSPORTATION

a. Were DOT-7A or other authorized packages used? Yes [49 CFR 173.415, 49 CFR 173.416(b)]

b. Are package performance test records on file? Yes [illegible]

c. Are special form sources documented? [49 CFR 173.476(a)] Yes

d. Did the package have 2 labels (ex. Yellow-II) with TI, Nuclide, Activity, and Hazard Class? [49 CFR 172.403, 49 CFR 173.441] Yes

e. Was the package properly marked? Yes [49 CFR 172.301, 49 CFR 172.304, 49 CFR 172.310, 49 CFR 172.324]

f. Was the package closed and sealed during transport? Yes [49 CFR 173.475(f)]

g. Were shipping papers prepared and used? Yes [49 CFR 172.200(a)]

h. Did the shipping papers contain proper entries (Shipping name, Hazard Class, Identification Number (UN Number), Total Quantity, Package Type, Nuclide, RQ, Radioactive Material, Physical and Chemical Form, Activity, category of label, TI, Shipper's Name, Certification and Signature, Emergency Response Phone Number, Cargo Aircraft Only [if applicable])? [49 CFR 172.200, 49 CFR 72.201, 49 CFR 172.202, 49 CFR 172.203, 49 CFR 172.204, 49 CFR 172.604] Yes

i. Were the shipping papers within the driver's reach and readily accessible during transport? Yes [49 CFR 177. 817(e)]

j. Was the package secured against movement? [49 CFR 177. 834] Yes

k. Was the vehicle placarded, if needed? [49 CFR 172.504] N/A

l. Were overpacks, if needed, used properly? [49 CFR 173.25] N/A

m. Were any incidents reported to DOT? [49 CFR 171.15, 16] N/A

12. AUDITOR'S INDEPENDENT SURVEY MEASUREMENTS (IF MADE)

a. Describe the type, location, and results of measurements. Do any radiation levels exceed regulatory limits? NOT MADE

13. NOTIFICATION AND REPORTS

a. Was any radioactive material lost or stolen? Were reports made? [10 CFR 20.2201, 10 CFR 30.50] NO N/A

b. Did any reportable incidents occur? Were reports made? [10 CFR 20.2202, 10 CFR 30.50] NO

c. Did any overexposures and high radiation levels occur? Were they reported? [10 CFR 20.2203, 10 CFR 30.50] N/A NO N/A

d. If any events (as described in items a through c above) did occur, what was the root cause? N/A Were the corrective actions appropriate? N/A

e. Is the licensee aware of the telephone number for the NRC Emergency Operations Center? YES [(301) 816-5100]

14. POSTING AND LABELING

a. Is NRC-3 "Notice to Workers" posted? [10 CFR 19.11] YES

b. Are NRC regulations and license documents posted or is a notice posted stating where these documents are located? [10 CFR 19.11, 10 CFR 21.6] YES

c. Is there any other posting and labeling? [10 CFR 20.1902, 10 CFR 20.1904] YES

15. RECORDKEEPING FOR DECOMMISSIONING

a. Are records kept of information important to decommissioning? [10 CFR 30.35(g)]

b. Do records include all information outlined? [10 CFR 30.35(g)] N/A N/A

16. BULLETINS AND INFORMATION NOTICES

a. Are NRC bulletins, NRC Information Notices, and NMSS Newsletters, received? YES, AND LOCATED CHARLES HILL, NJ

b. Is appropriate training and action taken in response? YES

17. SPECIAL LICENSE CONDITIONS OR ISSUES

a. Did the auditor review special license conditions or other issues (e.g., non-routine maintenance)? YES

18. DEFICIENCIES IDENTIFIED IN AUDIT; CORRECTIVE ACTIONS

a. Summarize problems and/or deficiencies identified during the audit. NO DEFICIENCIES

b. If problems and/or deficiencies were identified in this audit, describe the corrective actions planned or taken. Are corrective actions planned or taken at ALL licensed locations (not just location audited)? NA DEFICIENCIES

c. Provide any other recommendations for improvement. NO

19. EVALUATION OF OTHER FACTORS

a. Is senior licensee management appropriately involved with the radiation protection program and/or RSO oversight? YES

b. Does RSO have sufficient time to perform his/her radiation safety duties? YES

c. Does licensee have sufficient staff to support the radiation protection program? YES

LANSING, MI.
3/26/02

Appendix F

Portable Gauge Audit Checklist

Note: All areas indicated in audit notes may not be applicable to every license and may not need to be addressed during each audit.

Licensee's name: [illegible] Associates License No. 29-28536-01

Auditor: Lynn A. Hudson Date of Audit 3-26-02 Telephone No. 956-616-9166

(Signature)

1. AUDIT HISTORY

a. Last audit of this location conducted on (date) N/A.

b. Were previous audits conducted yearly? [10 CFR 20.1101] No

c. Were records of previous audits maintained? [10 CFR 20.2102] N/A

d. Were any deficiencies identified during the last two audits or two years, whichever is longer? N/A

e. Were corrective actions taken? (Look for repeated deficiencies). N/A

2. ORGANIZATION AND SCOPE OF PROGRAM

a. If the mailing address or places of use changed, was the license amended? YES

b. If ownership changed or bankruptcy was filed, was prior NRC consent obtained or was NRC notified? N/A

c. If the RSO was changed, was the license amended? Does the new RSO meet NRC training requirements? N/A

d. If the designated contact person for NRC changed, was NRC notified? N/A

e. Does the license authorize all of the NRC-regulated radionuclides contained in the gauges possessed? YES

f. Are the gauges as they are described in the Sealed Source and Device (SSD) Registration Certificate or Sheet? Are copies of (or access to) SSD Certificates available? Does the licensee have the manufacturers' manuals for operation and maintenance? [10 CFR 32.210] YES YES YES

g. Are the actual uses of gauges consistent with the authorized uses listed on the license? YES

h. Is the RSO fulfilling his/her duties? YES

3. TRAINING AND INSTRUCTIONS TO WORKERS

a. Were all workers who are likely to exceed 100 mrem/yr instructed per 10 CFR 19.12? Was refresher training provided, as needed? YES YES

b. Did each gauge operator attend an approved course before using the gauges? YES

c. Are training records maintained for each gauge operator? YES

d. Did interviews with operators reveal that they know the emergency procedures? YES

e. Did this audit include observation of operators using the gauge in a field situation? NO Operating gauge? NO Performing routine cleaning and lubrication? NO Transporting gauge? NO Storing gauge? NO

f. Did the operator demonstrate safe handling and security during transportation, use, and storage? N/A

g. Was HAZMAT training (required at least once every three years) provided as required? [49 CFR 172.700, 49 CFR 172.701, CFR 172.702, 49 CFR 172.703, 49 CFR 172.704] YES

4. RADIATION SURVEY INSTRUMENTS

a. If the licensee possesses its own survey meter, does the survey meter meet NRC's criteria? ~~YES~~ NO

b. If the licensee does not possess a survey meter, are specific plans made to have one available? YES

c. Is the survey meter needed for non-routine maintenance calibrated as required? NO [10 CFR 20.1501]

d. Are calibration records maintained? [10 CFR 20.2103(a)] N/A

5. GAUGE INVENTORY

a. Is a record kept showing the receipt of each gauge? [10 CFR 30.51(a)(1)] YES

b. Are all gauges received physically inventoried every 6 months? YES

c. Are records of inventory results with appropriate information maintained? YES

6. PERSONNEL RADIATION PROTECTION

a. Are ALARA considerations incorporated into the radiation protection program? YES [10 CFR 20.1101(b)]

b. Is documentation kept showing that unmonitored users receive less than 10 percent of limit? NO

c. Did unmonitored users' activities change during the year which could put them over 10 percent of limit? NO

d. If yes to c. above, was a new evaluation performed?

e. Is external dosimetry required (user receiving greater than 10 percent of limit)? Is dosimetry provided to users? YES YES

i. Is the dosimetry supplier NVLAP-approved? [10 CFR 20.1501(c)] YES

ii. Are the dosimeters exchanged monthly for film badges and at the industry-recommended frequency for TLDs? NO

iii. Are dosimetry reports reviewed by the RSO when they are received? YES

iv. Are the records NRC forms or equivalent? [10 CFR 20.2104(d), 10 CFR 20.2106(c)] YES

- NRC-4 "Cumulative Occupational Exposure History" completed?
- NRC-5 "Occupational Exposure Record for a Monitoring Period" completed?

v. If a worker declared her pregnancy, did licensee comply with 10 CFR 20.1208? N/A Were records kept of embryo/fetus dose per 10 CFR 20.2106(e)?

f. Are records of exposures, surveys, monitoring, and evaluations maintained? [10 CFR 102, 10 CFR 20.2103, 10 CFR 20.2106] YES

7. PUBLIC DOSE

a. Are gauges stored in a manner to keep doses below 100 mrem in a year? YES [10 CFR 1301(a)(1)]

b. Has a survey or evaluation been performed per 10 CFR 20.1501(a)? NO Have there been any additions or changes to the storage, security, or use of surrounding areas that would necessitate a new survey or evaluation? NO

c. Do unrestricted area radiation levels exceed 2 mrem in any one hour? [10 CFR 0.1301(a)(2)] N/A

d. Are gauges being stored in a manner that would prevent unauthorized use or removal? [10 CFR 20.1801] YES

e. Are records maintained? [10 CFR 20.2103, 10 CFR 20.2107] YES

8. OPERATING AND EMERGENCY PROCEDURES

a. Have operating and emergency procedures been developed? YES

b. Do they contain the required elements? YES

c. Does each operator have a current copy of the operating and emergency procedures, including current telephone numbers? YES

9. LEAK TESTS

a. Was each sealed source leak tested every 6 months or at other prescribed intervals? YES

b. Was the leak test performed as described in correspondence with NRC and according to the license? YES

c. Are records of results retained with the appropriate information included? YES

d. Were any sources found leaking and if yes, was NRC notified? NO/N/A

10. MAINTENANCE OF GAUGES

a. Are manufacturer's procedures followed for routine cleaning and lubrication of the gauge? N/A

b. Does the source or source rod remain attached to the gauge during cleaning? N/A

c. Is non-routine maintenance performed where the source or source rod is detached from the gauge? If yes, was it performed according to license requirements (e.g., extent of work, individuals performing the work, procedures, dosimetry, survey instrument, compliance with 10 CFR 20.1301 limits)?

11. TRANSPORTATION

a. Were DOT-7A or other authorized packages used? [49 CFR 173.415, 49 CFR 173.416(b)]

b. Are package performance test records on file? YES @ MONICA

c. Are special form sources documented? [49 CFR 173.476(a)] YES

d. Did the package have 2 labels (ex. Yellow-II) with TI, Nuclide, Activity, and Hazard Class? YES [49 CFR 172.403, 49 CFR 173.441]

e. Was the package properly marked? [49 CFR 172.301, 49 CFR 172.304, 49 CFR 172.310, 49 CFR 172.324] YES

f. Was the package closed and sealed during transport? YES [49 CFR 173.475(f)]

g. Were shipping papers prepared and used? [49 CFR 172.200(a)] YES

h. Did the shipping papers contain proper entries (Shipping name, Hazard Class, Identification Number (UN Number), Total Quantity, Package Type, Nuclide, RQ, Radioactive Material, Physical and Chemical Form, Activity, category of label, TI, Shipper's Name, Certification and Signature, Emergency Response Phone Number, Cargo Aircraft Only [if applicable])? YES [49 CFR 172.200, 49 CFR 72.201, 49 CFR 172.202, 49 CFR 172.203, 49 CFR 172.204, 49 CFR 172.604]

i. Were the shipping papers within the driver's reach and readily accessible during transport? YES [49 CFR 177. 817(e)]

j. Was the package secured against movement? [49 CFR 177. 834] YES

k. Was the vehicle placarded, if needed? [49 CFR 172.504] N/A

l. Were overpacks, if needed, used properly? [49 CFR 173.25] N/A

m. Were any incidents reported to DOT? [49 CFR 171.15, 16] NO

12. AUDITOR'S INDEPENDENT SURVEY MEASUREMENTS (IF MADE)

a. Describe the type, location, and results of measurements. Do any radiation levels exceed regulatory limits? N/A

13. NOTIFICATION AND REPORTS

a. Was any radioactive material lost or stolen? No Were reports made? N/A [10 CFR 20.2201, 10 CFR 30.50]

b. Did any reportable incidents occur? Were reports made? [10 CFR 20.2202, 10 CFR 30.50]

c. Did any overexposures and high radiation levels occur? ~~Yes~~ No ~~Yes~~ N/A ~~(illegible)~~ Were they reported? [10 CFR 20.2203, 10 CFR 30.50]

d. If any events (as described in items a through c above) did occur, what was the root cause? Were the corrective actions appropriate? N/A

*e. Is the licensee aware of the telephone number for the NRC Emergency Operations Center? [(301) 816-5100] YES

14. POSTING AND LABELING

a. Is NRC-3 "Notice to Workers" posted? [10 CFR 19.11] YES

*b. Are NRC regulations and license documents posted or is a notice posted stating where these documents are located? [10 CFR 19.11, 10 CFR 21.6] YES

*c. Is there any other posting and labeling? [10 CFR 20.1902, 10 CFR 20.1904] YES

15. RECORDKEEPING FOR DECOMMISSIONING

a. Are records kept of information important to decommissioning? [10 CFR 30.35(g)] N/A

b. Do records include all information outlined? [10 CFR 30.35(g)] N/A

16. BULLETINS AND INFORMATION NOTICES

a. Are NRC bulletins, NRC Information Notices, and NMSS Newsletters, received? YES

b. Is appropriate training and action taken in response? YES

17. SPECIAL LICENSE CONDITIONS OR ISSUES

a. Did the auditor review special license conditions or other issues (e.g., non-routine maintenance)? N/A

18. DEFICIENCIES IDENTIFIED IN AUDIT; CORRECTIVE ACTIONS

a. Summarize problems and/or deficiencies identified during the audit.

No Problems

b. If problems and/or deficiencies were identified in this audit, describe the corrective actions planned or taken. Are corrective actions planned or taken at ALL licensed locations (not just location audited)? N/A

c. Provide any other recommendations for improvement. NS

19. EVALUATION OF OTHER FACTORS

a. Is senior licensee management appropriately involved with the radiation protection program and/or RSO oversight? YES

b. Does RSO have sufficient time to perform his/her radiation safety duties? YES

c. Does licensee have sufficient staff to support the radiation protection program? YES

Radiation Safety Program Audit Checklist

Licensee name Golder Associates License No. 29-28576-01

Auditor's name (print) Kevin Dunsmore Date of Audit 8/28/07

Auditor's signature Kevin Dunsmore

Audit Item	Yes	No	Comments
1. Audit History			
a. Last audit at this location (date)?		✓	
b. Were previous audits conducted yearly?		✓	
c. Were any deficiencies noted during the last two audits? Any deficiencies repeated?			N/A
d. Were corrective actions taken?			N/A
2. Organization and Scope of Program			
a. If the mailing address or place of use changed, was the license amended?	✓		
b. If the RSO changed, was the license amended? Does the new RSO meet the training requirements?	✓		
c. Does the license authorize all of the radionuclides in the gauges possessed?	✓		
d. Are the actual uses of gauges consistent with the authorized uses on the license?	✓		
e. Is the RSO fulfilling his/her duties?		✓	RSO CHANGED-
3. Training and Instructions to Workers			
a. Have all workers received initial radiation safety training? Refresher training?	✓		
b. Have all workers received required Hazmat training? Refresher training?		✓	DOT HAZMAT Refresher Needed
c. Are training records maintained for each individual?	✓		
d. Did interviews/observations reveal gauge operators know emergency procedures? Leak testing procedures? Service procedures? Transportation procedures?	✓		
4. Radiation Detection Instruments			
a. Is a survey meter available for radiation measurements? Frisker for contamination measurements?	✓		
b. Have the instruments been calibrated within the last year?	✓		

c. Are calibration records maintained?	✓		
d. Are operation checks performed prior to use?	✓		
5. Gauge Inventory			
a. Is a record kept showing receipt of each gauge?	✓		
b. Are all gauges physically inventoried at least every six months?	✓		
c. Are records of inventories maintained?	✓		
6. Personnel Radiation Protection			
a. Are ALARA considerations incorporated into the radiation safety program?	✓		
b. Are all branch office personnel assigned TLD badges?	✓		
c. Do all personnel wear their TLD badges in the restricted area and when handling gauges? Are badges properly stored when not in use?	✓		
d. Are TLD badges exchanged at least quarterly and processed by a NVLAP accredited organization?	✓		
e. Are dosimetry reports reviewed by the RSO when received?	✓		
f. If a worker declared her pregnancy, were the applicable requirements met?		N/A	no Pregnancies
g. Were radiation and contamination surveys in restricted and unrestricted areas performed quarterly?		✓	
h. Are records of surveys maintained?		✓	
7. Public Dose			
a. Are gauges used and stored in a manner to keep public doses below 100 mrem in a year?	✓		
b. Has a survey or evaluation been performed to demonstrate public dose limits are met? (indicate the date)		✓	will From Here Forward
c. Have there been any changes in the use or storage of gauges or in the use of surrounding areas that would necessitate a new survey or evaluation?		✓	
d. Are unrestricted area radiation levels less than 2 mrem in any one hour?		✓	
e. Are gauges stored in a manner to prevent unauthorized use or removal?	✓		
f. Are records maintained?	✓		
8. Operating and Emergency Procedures			
a. Are current copies of operating and emergency procedures available to each	✓		

INDIVIDUAL

individual?			
b. Did any emergencies occur? Were they properly handled?		✓	
9. Leak Tests			
a. Was each customer gauge leak tested upon receipt?	✓		
b. Are leak tests performed in accordance with procedures?	✓		
c. Is each gauge in inventory leak tested at least every 6 months?	✓		
d. Are records of leak test results maintained for each gauge?	✓		
e. Were any sources found leaking?		✓	
10. Maintenance of Gauges			
a. Are procedures followed for cleaning and lubrication of gauges?	✓		
b. When the source rod is removed from the gauge is it stored in a shielded pig?		N/A	Do not remove Source Rod
c. Do personnel observe good ALARA practices?	✓		
11. Transportation			
a. Are DOT 7A packages used for transport of gauges? Is documentation of package testing maintained?	✓		
b. Is special form source documentation maintained?	✓		
c. Packages have two labels (e.g. Yellow-II) on opposite sides with TI, nuclide, activity, and hazard class? Cargo only label?	✓		
d. Packages are properly marked?	✓		
e. Packages are inspected prior to shipment?	✓		
f. Packages are sealed (cases locked)?	✓		
g. Shipping papers are properly prepared for all gauges shipped?	✓		Include Local Contact for Emergency
h. Bill of lading (shipping papers) and emergency instructions are within drivers reach during transport?	✓		
i. Packages are not carried in passenger compartment of vehicle?	✓		
j. Packages are secured against movement in vehicle?	✓		
12. Notifications and Reports			
a. Was any radioactive material lost or stolen? Were reports made?		✓	

b. Did any overexposures occur? Were reports made?		✓	
c. If any events occurred, was the root cause determined and corrective actions taken?		N/A	
13. Posting and Labeling			
a. "Notice to Workers" posted?	✓		
b. Notice posted stating where workers can read a copy of the regulations and license?		✓	Posted After this Audit

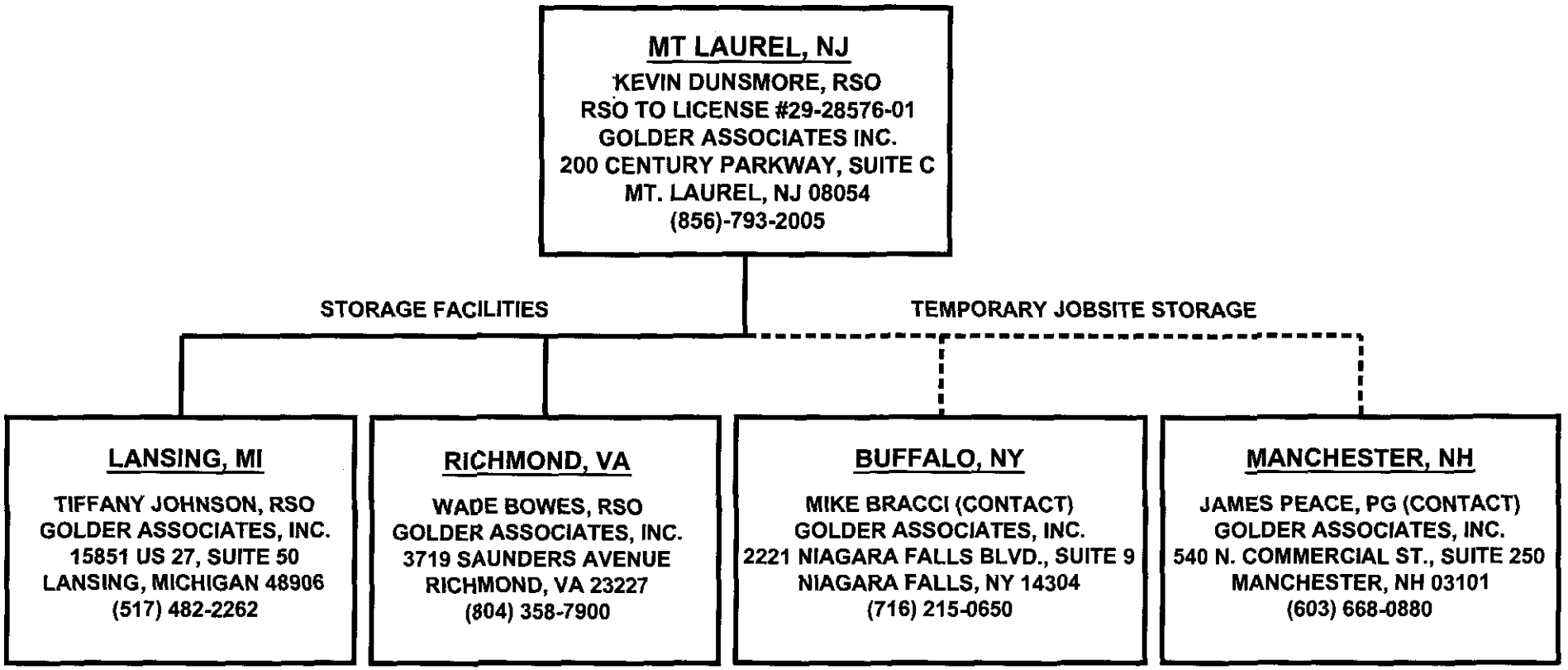
14. Summary of Deficiencies Identified During Audit (attach additional sheets as necessary)

Deficiencies	Proposed Corrective Actions/Planned Completion Date
RSO was changed last year was not aware of yearly audits will do from this date forward including Lansing & Richmond. DOT refreshers needed for many employees need DOT training. Scheduled for Oct 10th in Philly.	

15. Other Recommendations for Improvement (attach additional sheets as necessary)

- need to do survey of storage facility for Radiation protection
- Local Emergency Contact information has been made available for travel Paper/packets.

Attachment 2



Golder Associates
Philadelphia USA

Certificate of Completion

This certifies that

Kevin Dunsmore

has successfully completed the

Radiation Safety Officer Class

conducted by the training department of

Troxler Electronic Laboratories, Inc.

Greg Farnen

Greg Farnen
Instructor

3/5/2003
Date

William F. Troxler, Jr.
President

TROXLER
Troxler Electronic Laboratories, Inc.
PO Box 12057 • 3008 Cornwallis Rd. • Research Triangle Park, NC 27709
Phone: (919) 549-8661 • Fax: (919) 549-0761 • Web site: www.troxlerlabs.com

Enrollment ID: **2173**

Certificate of Completion

This certifies that

Tiffany Johnson

has successfully completed the

Troxler Radiation Safety Officer Course

conducted by the training department of

Troxler Electronic Laboratories, Inc.

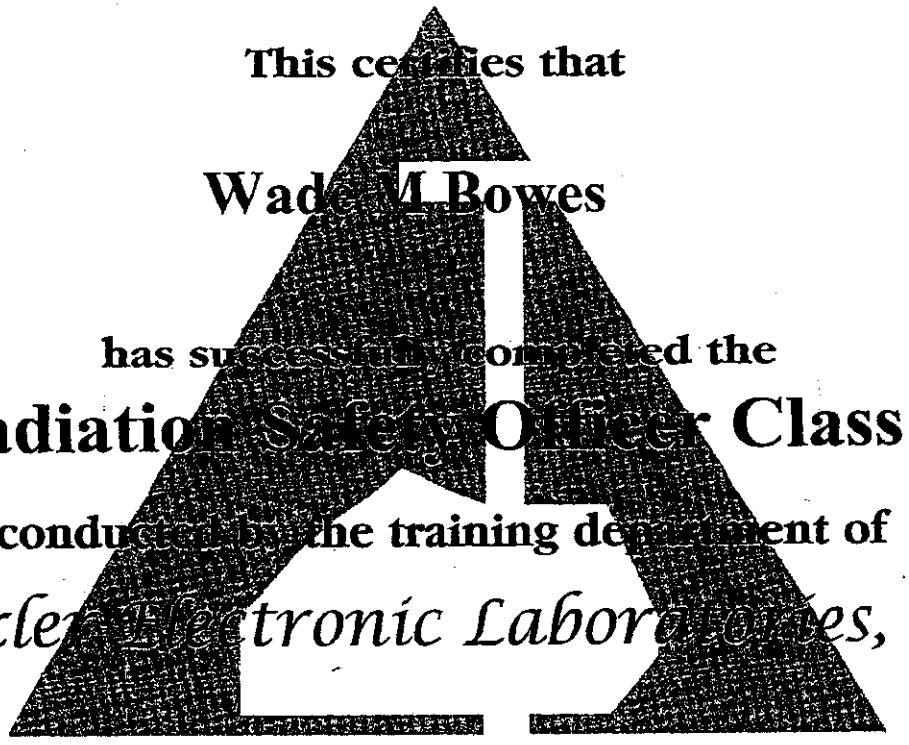
Greg Farnen
Greg Farnen
Instructor

June 13, 2001
Date

William F. Troxler, Jr.
President

TROXLER

Certificate of Completion



This certifies that

Wade M Bowes

has successfully completed the

Radiation Safety Officer Class

conducted by the training department of

Troxler Electronic Laboratories, Inc.

Harvey Dunlevy

Harvey Dunlevy
Instructor

02/06/2003
Date

William F. Troxler, Jr.
President

Enrollment ID: 2718

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Certificate of Completion

This certifies that

James S Peace

has successfully completed the

Nuclear Gauge Safety Training Class

conducted by the training department of

Troxler Electronic Laboratories, Inc.

Harvey Dunlevy

Harvey Dunlevy
Instructor

9/27/2006
Date

William F. Troxler, Jr.
President

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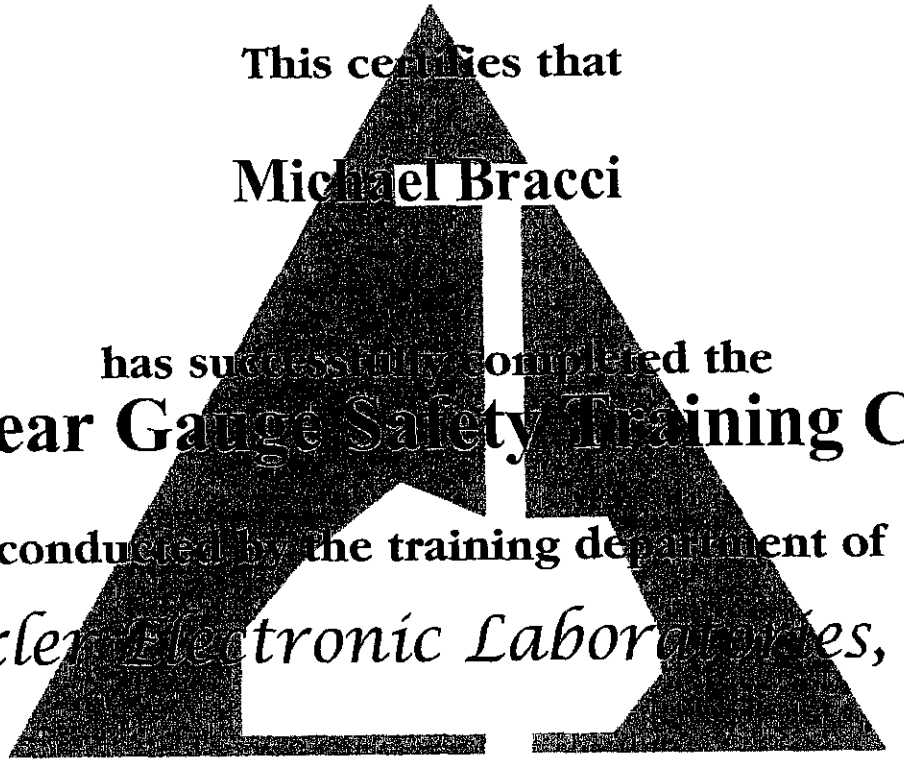
Enrollment ID: **19811**

Certificate of Completion



This certifies that

Michael Bracci

has successfully completed the

Nuclear Gauge Safety Training Class

conducted by the training department of

Troxler Electronic Laboratories, Inc.

Greg Farnen
Instructor

4/17/2003
Date

William F. Troxler, Jr.
President

Enrollment ID: 3346

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PO Box 12057 • 3008 Cornwallis Rd. • Research Triangle Park, NC 27709
Phone: (919) 549-8661 • Fax: (919) 549-0761 • Web site: www.troxlerlabs.com

Attachment 3

Troxler Tracking Information

Model # 3430 **Source Serial #** 752945
Serial # 21429 4716884

Date Out	Date In	Received By	Project Title	Project Number	Location
		Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
13-Apr-05	17-Apr-05	Gregg DeHaven	Grows North	023-6169-004	Morrisville PA
	17-May-05	Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
24-May-06	23-Jun-06	Steven Mansfield	East Granby Landfill	063-6924	Granby, MA
N/A	23-Jun-06	Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
17-Aug-06	22-Aug-06	Chris Leaf	Kluk Associates (Stored in Cherry Hill)	063-6420	Cherry Hill, NJ
13-Sep-07	4-Dec-06	Steven Mansfield	East Granby Landfill	063-6924	Granby, MA
8-Dec-06	13-Dec-06	Chris Leaf	Kluk Associates (Stored in Cherry Hill)	063-6420	Cherry Hill, NJ
N/A	13-Dec-06	Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
30-May-07	31-May-07	Chris Leaf	Audobon Associates	073-86065	Audobon , NJ
N/A	31-May-07	Kevin Dunsmore			Mt. Laurel Office

Troxler Tracking Information

Model # 3440
Serial # 33581

Source Serial # 750-9267
47-2415

Date Out	Date In	Received By	Project Title	Project Number	Location
29-Jul-02	10-Oct-02	Mike Nash	Grows Slope Cap	023-6148	Morrisville,PA
N/A	10-Oct-02	K. Dunsmore	Lab		Cherry Hill,NJ
14-Oct-02	22-Nov-02	Brent Barbich	Keystone Landfill	973-6407	Hanover PA
N/A	22-Nov-02	K. Dunsmore	Lab		Cherry Hill NJ
15-Jan-03	15-Mar-03	Brent Barbich	Keystone Landfill	973-6407	Hanover, Pa
N/A	15-Mar-03	K. Dunsmore	Lab		Cherry Hill NJ
17-Mar-03	10-Sep-03	M.Day	Grows Slope Cap	033-6200	Morrisville,PA
N/A	10-Sep-03	K. Dunsmore	Lab		Cherry Hill NJ
14-Oct-03	23-Dec-03	J. Huffman	Keystone Landfill	973-6407	Hanover PA
N/A	23-Dec-03	K. Dunsmore	Lab		Cherry Hill NJ
12-Apr-04	13-Apr-04	Brent Barbich	Keystone Landfill	973-6407	Hanover PA
N/A	13-Apr-04	K. Dunsmore	Lab		Cherry Hill NJ
19-Apr-04	7-Dec-04	Mark Day	Conestoga Landfill	043-6264	Morgantown, Pa
N/A	7-Dec-04	K. Dunsmore	Lab		Cherry Hill, NJ
28-Dec-04	2-Jan-05	Brent Barbich	Keystone Landfill	973-6407	Hanover PA
6-May-05	2-Aug-05	Brent Barbich	Ford Edison	033-8894-002	Edison, NJ
23-Aug-05	29-Jan-06	S. Mansfield	Chicopee Landfill	053-6887	Chicopee MA (Manchester Proj)
N/A	29-Jan-06	K Dunsmore	Lab		Cherry Hill NJ
N/A	23-May-06	K Dunsmore	Lab		Cherry Hill NJ
26-Dec-06	26-Dec-06	Mike Hart	Global Landfill	943-6183	Old Bridge, NJ
14-Feb-07	16-Feb-07	Mike Flanagan	Grows North	023-6469	Morrisville,PA
N/A	16-Feb-07	K. Dunsmore			Mt. Laurel Office
19-Apr-07		Mark Day	Mountain View	073-86034	Green Castle, PA

Troxler Tracking Information

Model # 3440
Serial # 18945

Source Serial # 50-8575
47-14405

Date Out	Date In	Received By	Project Title	Project Number	Location
9-Oct-96	28-Apr-97	Sam Taylor	ISRT, Ma	957-1263.006	Woburn, Ma
N/A	28-Apr-97	Lynn Huselton			Lab - Mt. Laurel, NJ
28-Apr-97	30-May-97	Jim Single	CCSWA / MSOF Cell 1 & 2 / Pa	967-2055	Honeybrook, Pa
2-Jun-97	30-May-97	Lynn Huselton			Lab - Mt. Laurel, NJ
2-Jun-97	11-Jun-97	Brian Marshall	Repair		Baltimore, Md
N/A	11-Jun-97	Lynn Huselton			Lab - Mt. Laurel, NJ
26-Jun-97	3-Jul-97	Joe Passarelli	ACUA / NJ	937-2019	Atlantic County, NJ
N/A	3-Jul-97	Lynn Huselton			Lab - Mt. Laurel, NJ
7-Jul-97	7-Aug-97	Trevor Taylor	Global PRP / RAWP / NJ	943-6183.0010	Old Bridge, NJ
7-Aug-97	11-Aug-97	Lynn Huselton			Lab - Mt. Laurel, NJ
11-Aug-97	28-Aug-97	Steve Milka	King George County Landfill / Va	973-6233.002	King George, Va
N/A	2-Sep-97	Lynn Huselton	Needs Repair		Lab - Mt. Laurel, NJ
19-Dec-97	16-Feb-98	Repair Dept.		6090002410	Research Triangle Park, NC
N/A	16-Feb-98	Lynn Huselton			Lab - Mt. Laurel, NJ
21-Feb-98	11-Mar-98	Chris Leaf	Hampton Inn / NJ	987-2076.001	Bridgeport, NJ
30-Mar-98	8-Apr-98	Chris Leaf	Hampton Inn / NJ	987-2076.001	Bridgeport, NJ
N/A	8-Apr-98	Lynn Huselton			Lab - Mt. Laurel, NJ
23-Apr-98	29-May-98	Dave Cedarholm	Coakley Landfill / NH	963-6813.300	Greenland, NH
19-Jun-98	1-Jun-98	Repair Dept.		6090002410	Research Triangle Park, NC
N/A	19-Jun-98	Lynn Huselton			Lab - Mt. Laurel, NJ
13-Jul-98	15-Jul-98	Frank Habermehl	Newco / Pinelands Park / NJ	963-6326.9B	Egg Habor Township, NJ
15-Jul-98	17-Jul-98	Joe Passarelli	ACUA / Structural Fill / NJ	967-2058.002	Pleasantville, NJ
17-Jul-98	16-Oct-98	Frank Habermehl	Newco / Pinelands Park / NJ	963-6326.9B	Egg Habor Township, NJ
N/A	16-Oct-98	Lynn Huselton			Lab - Mt. Laurel, NJ
2-Jul-99	2-Jul-99	Michael Nash	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
14-Jul-99	14-Jul-99	Michael Nash	BET / NJ	983-6478	Tinton Falls, NJ
N/A	19-Jul-99	Lynn Huselton			Lab - Mt. Laurel, NJ
19-Jul-99	19-Jul-99	Michael Nash	BET / NJ	983-6478	Tinton Falls, NJ
N/A	29-Jul-99	Lynn Huselton			Lab - Mt. Laurel, NJ
29-Jul-99	29-Jul-99	Gregory Dehaven	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
N/A	29-Jul-99	Lynn Huselton			Lab - Mt. Laurel, NJ
5-Aug-99	5-Aug-99	Michael Nash	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ

Troxler Tracking Information

N/A	5-Aug-99	Lynn Huselton			Lab - Mt. Laurel, NJ
10-Aug-99	10-Aug-99	Michael Nash	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
N/A	10-Aug-99	Lynn Huselton			Lab - Mt. Laurel, NJ
12-Aug-99	31-Aug-99	Michael Nash	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
N/A	31-Aug-99	Lynn Huselton			Lab - Mt. Laurel, NJ
1-Sep-99	1-Sep-99	Michael Nash	Colonial / Eaglepoint / NJ		Woodbury, NJ
2-Sep-99	2-Sep-99	Michael Nash	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
N/A	8-Sep-99	Lynn Huselton			Lab - Mt. Laurel, NJ
8-Sep-99	8-Sep-99	Michael Nash	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
9-Sep-99	9-Sep-99	Michael Nash	RAAE / Hopatcong LF QA / NJ		Hopatcong, NJ
N/A	15-Sep-99	Lynn Huselton			Lab - Mt. Laurel, NJ
15-Sep-99	15-Sep-99	Michael Nash	BET / NJ	983-6478	Tinton Falls, NJ
N/A	30-Sep-99	Lynn Huselton			Lab - Mt. Laurel, NJ
30-Sep-99	14-Dec-99	Tom Heasley	WSI / Moretown LF / Vt	993-6854	Moretown, Vt
N/A	14-Dec-99	Lynn Huselton			Lab - Cherry Hill, NJ
7-Jul-00	27-Nov-00	Tom Heasley	Chicopee Landfill / Ma	993-6859	Chicopee, Ma
27-Nov-00	27-Dec-00	Mike Zarenski	Teradyne / Ma	993-6871	Boston, Ma
N/A	27-Dec-00	Lynn Huselton			Lab - Cherry Hill, NJ
26-Jun-01	27-Jun-01	Gregory Dehaven	Grows / Pa	003-6580	Morrisville, Pa
N/A	27-Jun-01	Lynn Huselton	Needs Repair		Lab - Cherry Hill, NJ
N/A		Kevin Dunsmore	" "		" "
N/A	2-Mar-04	Kevin Dunsmore	" "		" "
N/A	31-Aug-04	Kevin Dunsmore	" "		" "
N/A	28-Feb-05	Kevin Dunsmore	" "		" "
N/A	28-Aug-05	Kevin Dunsmore	" "		" "
N/A	28-Feb-06	Kevin Dunsmore	" "		" "
N/A	26-Sep-06	Kevin Dunsmore	" "		" "
26-Sep-07			Troxler (Disposal)		RTP, NC

Troxler Tracking Information

Model # 3440
Serial # 18627

Source Serial #47-14085
50-8208

Date Out	Date In	Received By	Project Title	Project Number	Location
2-Jan-97	19-May-97	Don Antevy	Medley Landfill / Fl	967-9004.003	Medley, Fl
N/A	20-May-97	Lynn Huselton			Lab - Mt. Laurel, NJ
22-May-97	29-May-97	Dave Mitchell	Kodak / WRLF Closure / NY	973-9152.002	Rochester, NY
N/A	29-May-97	Lynn Huselton			Lab - Mt. Laurel, NJ
11-Jun-97	8-Jul-97	Trevor Taylor	Global PRP / RAWP / NJ	943.6183.0010	Old Bridge, NJ
N/A	8-Jul-97	Lynn Huselton			Lab - Mt. Laurel, NJ
16-Jul-97	6-Aug-97	Brian Marshall	Repair		Baltimore, Md
6-Aug-97	11-Aug-97	Bill McBride	WMI / Keystone Landfill / Pa	973-6407.0001	Littlestown, Pa
N/A	11-Aug-97	Lynn Huselton			Lab - Mt. Laurel, NJ
11-Sep-97	3-Nov-97	Dave Mitchell	CWM / Laghit / NY	973-9166.002	Model City, NY
N/A	3-Nov-97	Lynn Huselton			Lab - Mt. Laurel, NJ
17-Nov-97	25-Nov-97	Jim Single	NEWCO / Pinelands Park / NJ	963-6326	Pinelands Park, NJ
N/A	25-Nov-97	Lynn Huselton			Lab - Mt. Laurel, NJ
5-Dec-97	10-Dec-97	Joe Passarelli	ACUA / Structural Fill / NJ	967-2058.002	Atlantic County, NJ
N/A	10-Dec-97	Lynn Huselton			Lab - Mt. Laurel, NJ
15-Dec-97	17-Dec-97	Joe Passarelli	ACUA / Structural Fill / NJ	967-2058.002	Atlantic County, NJ
N/A	17-Dec-97	Lynn Huselton			Lab - Mt. Laurel, NJ
26-Dec-97	14-Aug-98	Frank Adams	S. Broward RRF / Fl	977-9008.0002	Fort Lauderdale, Fl
14-Aug-98	2-Dec-98	Jeff Beriswill	IMCA / Fld Dam Const / Fl	973-7776.0060	Tampa, Fl
N/A	29-Dec-98	Lynn Huselton			Lab - Mt. Laurel, NJ
29-Dec-98	5-Jan-99	Chuck Nordcliff	Repair		Research Triangle Park, NC
N/A	5-Jan-99	Lynn Huselton			Lab - Mt. Laurel, NJ
30-Mar-99	6-Apr-99	Frank Habermehl	NEWCO / Pinelands Park / NJ	963-6326.006C	Pinelands Park, NJ
N/A	6-Apr-99	Lynn Huselton			Lab - Mt. Laurel, NJ
8-Apr-99	12-Oct-99	Tom Heasley	WSI / Moretown LF / Vt	993-6854	Moretown, Vt
N/A	3-Nov-99	Lynn Huselton			Lab - Cherry Hill, NJ
3-Nov-99	3-Nov-99	Michael Nash	BET / NJ	983-6478	Tinton Falls, NJ
N/A	3-Nov-99	Lynn Huselton			Lab - Cherry Hill, NJ
28-Feb-00	7-Jun-00	Chris Leaf	WMPA / Grows / Pa	993-6571	Morrisville, Pa
N/A	7-Jun-00	Lynn Huselton			Lab - Cherry Hill, NJ
21-Sep-00	22-Sep-00	Frank Habermehl	Mt. Laurel / Devonshire Field / NJ	993-6574	Mount Laurel, NJ
N/A	22-Feb-01	Lynn Huselton			Lab - Cherry Hill, NJ

Troxler Tracking Information

22-Feb-01	7-Aug-01	Chris Gee	Blackburn / MSW Landfill / NC	013-6697	Newton, NC
N/A	7-Aug-01	Lynn Huselton			Lab - Cherry Hill, NJ
15-Apr-02	21-Nov-02	Mark Day	Hyland / Cell 2 / NY	013-6080	Angelica, NY
N/A	23-Nov-02	K. Dunsmore			Lab- Cherry Hill,NJ
3-Apr-03	3-Sep-03	J. Rizzo	Hyland / Cell 2 / NY	013-6080	Angelica, NY
N/A	4-Sep-03	K. Dunsmore			Lab- Cherry Hill,NJ
9-Dec-03	8-Apr-04	A. Donohue	Grows North	023-6169	Morrisville, Pa
30-Apr-04	14-May-04		Troxler For Repair		RTP, NC
N/A	14-May-04	Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
14-May-04	16-Jun-04	Mike Bracci	Buffalo Office	Chaffee Landfill	Niagara Falls NY
	16-Jun-04	Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
21-Jul-04	21-Jul-04	Gregg DeHaven	Grows North	023-6169	Morrisville, Pa
10-Nov-04	10-Nov-04	Brent Barbich	Keystone Landfill	973-6407-002	Hanover, PA
17-Nov-04	19-Nov-04	Rick Smith	Panther Tech Project	043-6323	Iselin, NJ
N/A	19-Nov-04	Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
N/A	28-Feb-05	Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
22-Mar-05	22-Mar-05	Rick Smith	Panther Tech Project	043-6323	Iselin, NJ
N/A	22-Mar-05	Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
N/A	31-Aug-05	Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
N/A	28-Feb-06	Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
N/A	29-Sep-06	Kevin Dunsmore	Lab Cherry Hill		Cherry Hill NJ
12-Nov-06	23-Nov-06	M. Flanagan	Ford Edison	033-8894	Edison NJ
N/A	23-Nov-06	Kevin Dunsmore	Lab Cherry Hill		Mt. Laurel, NJ
N/A	28-Feb-07	Kevin Dunsmore	Lab Cherry Hill		Mt. Laurel, NJ
25-Jun-07	29-Jun-07	Gregg DeHaven	Ford Edison	033-8894	Edison NJ
N/A	29-Jun-07	Kevin Dunsmore	Lab Cherry Hill		Mt. Laurel, NJ
10-Jul-07	10-Jul-07	Gregg DeHaven	Ford Edison	033-8894	Edison NJ
N/A	10-Jun-07	Kevin Dunsmore	Lab Cherry Hill		Mt. Laurel, NJ
3-Aug-07	13-Aug-07	Frank Malinky	Ford Edison	033-8894	Edison NJ
N/A	13-Aug-07	Kevin Dunsmore			Mt. Laurel Office

Troxler Tracking Information

Model # 3440
Serial # 18790

Source Serial #47-14248
50-8380

Date Out	Date In	Received By	Project Title	Project Number	Location
N/A	27-Dec-96	Lynn Huselton			Lab - Mt. Laurel, NJ
6-Mar-97	12-Mar-97	Bill McBride	Newco / Pinelands Park / NJ	963-6326	Egg Habor, NJ
N/A	12-Mar-97	Lynn Huselton			Lab - Mt. Laurel, NJ
2-Apr-97	2-Jun-97	Bob Pedersen	Maws / Pine Grove / Oh	977-7095	Amanda, Oh
2-Jun-97	21-Jul-97	Bob Pedersen	Peoples / Closure Cover / Mi	977-7092	Birch Run, Mi
21-Jul-97	19-Aug-97	Monir Ahmed	Dafter / Cell 2 / Mi	977-7109	Dafter, Mi
N/A	19-Aug-97	Lynn Huselton			Lab - Mt. Laurel, NJ
22-Oct-97	19-Jun-98	Collin Gagne	Bedford County Landfill / Va	977-8033	Bedford, Va
19-Jun-98	10-Aug-98	Tim Martin	H.E. Sargent / Dam CQC / Va	987-8060	Richmond, Va
10-Aug-98	14-Aug-98	Brian Perino	ENSR / Central Landfill / RI	987-8060	Johnston, RI
N/A	14-Aug-98	Lynn Huselton			Lab - Mt. Laurel, NJ
2-Dec-98	28-Dec-98	Chuck Nordcliff	Repair		Research Triangle Park, NC
N/A	28-Dec-98	Lynn Huselton			Lab - Mt. Laurel, NJ
28-Dec-98	29-Dec-98	Frank Habermehl	Newco / Pinelands Park / NJ	963-6326.9B	Egg Habor Township, NJ
N/A	29-Dec-98	Lynn Huselton			Lab - Mt. Laurel, NJ
19-Apr-99	5-May-99	Tom Heasley	WSI/ Moretown Landfill / Vt	993-6854	Waterbury, VT
N/A	5-May-99	Lynn Huselton			Lab - Mt. Laurel, NJ
6-May-99	6-May-99	Cori Stanley	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
N/A	6-May-99	Lynn Huselton			Lab - Mt. Laurel, NJ
1-Jun-99	1-Jun-99	Michael Nash	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
2-Jun-99	2-Jun-99	Michael Nash	BET / NJ	983-6478	Tinton Falls, NJ
N/A	2-Jun-99	Lynn Huselton			Lab - Mt. Laurel, NJ
4-Jun-99	4-Jun-99	Michael Nash	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
N/A	4-Jun-99	Lynn Huselton			Lab - Mt. Laurel, NJ
11-Jun-99	11-Jun-99	Michael Nash	BET / NJ	983-6478	Tinton Falls, NJ
N/A	11-Jun-99	Lynn Huselton			Lab - Mt. Laurel, NJ
25-Jun-99	25-Jun-99	Michael Nash	BET / NJ	983-6478	Tinton Falls, NJ
N/A	25-Jun-99	Lynn Huselton			Lab - Mt. Laurel, NJ
28-Jun-99	28-Jun-99	Gregory DeHaven	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
N/A	28-Jun-99	Lynn Huselton			Lab - Mt. Laurel, NJ
2-Jul-99	2-Jul-99	Gregory DeHaven	BET / NJ	983-6478	Tinton Falls, NJ

Troxler Tracking Information

N/A	2-Jul-99	Lynn Huselton			Lab - Mt. Laurel, NJ
6-Jul-99	6-Jul-99	Michael Nash	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
N/A	6-Jul-99	Lynn Huselton			Lab - Mt. Laurel, NJ
8-Jul-99	8-Jul-99	Michael Nash	BET / NJ	983-6478	Tinton Falls, NJ
N/A	8-Jul-99	Lynn Huselton			Lab - Mt. Laurel, NJ
12-Jul-99	12-Jul-99	Michael Nash	ACUA / Structural Fill / NJ	983-6483	Pleasantville, NJ
N/A	12-Jul-99	Lynn Huselton			Lab - Mt. Laurel, NJ
27-Jul-99	29-Jul-99	Michael Nash	RAAE / Hopatcong LF QA / NJ		Hopatcong, NJ
9-Aug-99	7-Dec-99	Cori Stanley	Shelton LF / Ct	993-6515	Shelton, Ct
N/A	7-Dec-99	Lynn Huselton			Lab - Cherry Hill, NJ
8-Mar-00	8-Mar-00	Cori Stanley	BET / NJ	983-6478	Tinton Falls, NJ
N/A	8-Mar-00	Lynn Huselton			Lab - Cherry Hill, NJ
30-Mar-00	6-Jun-00	Chris Leaf	WMPA / Grows / Pa	993-6571	Morrisville, Pa
N/A	6-Jun-00	Lynn Huselton			Lab - Cherry Hill, NJ
13-Jun-00	19-Jun-00	Gregory DeHaven	KBI / NJ		Philadelphia, Pa
N/A	19-Jun-00	Lynn Huselton			Lab - Cherry Hill, NJ
3-Jul-00	26-Oct-00	Cori Stanley	Berks / Pa	003-6595	Berks, Pa
N/A	3-Nov-00	Lynn Huselton			Lab - Cherry Hill, NJ
3-Nov-00	3-Nov-00	Jim McLaughlin	Devoe / NJ	973-6384.011	Pennsauken, NJ
N/A	10-Dec-00	Lynn Huselton			Lab - Cherry Hill, NJ
10-Dec-00	11-Oct-02	Mike Flanagan	Sharkey / NJ	943-6198	Troy Hills NJ
N/A	11-Oct-02	Kevin Dunsmore			Lab - Cherry Hill, NJ
21-Nov-04	12-Dec-02	Jon Rizzo	CWM (Buffalo)	023-9328	Buffalo NY
N/A	19-Mar-04	Kevin Dunsmore			Lab - Cherry Hill, NJ
19-Mar-04	15-Oct-03	Mike Flanagan	Sharkey / NJ	943-6198	Troy Hills NJ
N/A	15-Oct-03	Kevin Dunsmore			Lab - Cherry Hill, NJ
10-May-04	3-Jun-04	Brent Barbich	Keystone Landfill	973-6407	Hanover, PA
N/A	3-Jun-04	Kevin Dunsmore			Lab - Cherry Hill, NJ
10-Jun-04	15-Jul-04	Mike Bracci	Chaffee Landfill		Chaffee, NY
N/A	16-Jul-04	Kevin Dunsmore			Lab - Cherry Hill, NJ
N/A	28-Feb-05	Kevin Dunsmore			Lab- Cherry Hill
11-Nov-05	22-Nov-05		Troxler Electronics		RTP, North Carolina
N/A	25-Nov-05	Kevin Dunsmore			Lab-Cherry Hill
N/A	28-Feb-06	Kevin Dunsmore			Lab-Cherry Hill
N/A	31-Oct-06	Kevin Dunsmore			Mt. Laurel Office
19-Mar-07	Still Out	Mike Bracci	Chaffee Landfill	053-9450	Chaffee, NY

New Jersey Leak Tests				
18627	18790	18945	33581	21429
Leak Test	Leak Test	Leak Test	Leak Test	Leak Test
Feb-95	Sep-94	Aug-95	Feb-03	Dec-05
Aug-95	Apr-95	Mar-96	Sep-03	Feb-06
Feb-96	Aug-95	Oct-96	Mar-04	Aug-06
Jul-96	Sep-95	Mar-97	Aug-04	Feb-07
Jan-97	Apr-96	Jun-97	Feb-05	Jun-07
May-97	May-96	Jan-98	Aug-05	
Jul-97	Feb-97	Jun-98	Feb-06	
Dec-97	Jul-97	Dec-98	Sep-06	
Jun-98	Apr-98	Jun-99	Feb-07	
Dec-98	Dec-98	Feb-00	Jun-07	
Feb-00	Jun-99	Jul-00		
Sep-02	Jul-02	Sep-02		
Feb-03	Jul-03	Feb-03		
Jul-03	Sep-03	Sep-03		
Aug-03	Mar-04	Mar-04		
Jan-04	Aug-04	Aug-04		
Feb-04	Feb-05	Feb-05		
May-04	Aug-05	Aug-05		
Aug-04	Feb-06	Feb-06		
Feb-05	Oct-06	Sep-06		
Aug-05	Apr-07	Disposal		
Feb-06				
Sep-06				
Feb-07				
Jun-07				

Attachment 4

Golder Associates Inc.

200 Century Parkway, Suite C
Mt. Laurel, NJ USA 08054
Telephone (856) 793-2005
Fax (856) 793-2006
www.golder.com

Nuclear Gauge Emergency Contact Information

In case of emergency please immediately contact:

Kevin Dunsmore, Radiation Safety Officer
Golder Associates, Inc.
200 Century Parkway, Suite C
Mt. Laurel, NJ 08054

Office Phone: (856) 793-2005 extension 34328
(Between 9-5 Weekdays)

Mobile Number: (856) 373-6576
(After 5PM, and weekends)

Home Number: [redacted]
(If unreachable on previous numbers)

PERSONAL INFORMATION WAS REMOVED BY NRC. NO COPY OF THIS INFORMATION WAS RETAINED BY THE NRC.

TROXLER NUCLEAR GAUGE EMERGENCY RESPONSE INFORMATION REQUIRED FOR TRANSPORTATION

(Reference: DOT P5800.5 ERG93, and 49 CFR)

Call Troxler Electronic Laboratories, Inc, at (919) 549-9539 for Emergency Assistance

1. PROPER SHIPPING NAME:

- RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, 7, UN3332

POTENTIAL HAZARDS

2. HEALTH HAZARDS

- Radiation presents minimal risk to lives of persons during transportation accidents.
- Undamaged packages are safe; damaged packages or materials released from packages can cause external radiation hazards. Contamination is not suspected.
- Packages (cartons, boxes, drums, articles, etc.) identified as "Type A" by marking on packages or by shipping papers contain non-life endangering amounts. Radioactive sources may be released if packages are damaged in moderately severe accidents.
- Packages (large and small, usually metal) identified as "Type B" by marking on packages or by shipping papers contain potentially life-endangering amounts. Because of design, evaluation, and testing of packages, life-endangering releases are not expected in accidents except those of utmost severity.
- Commonly available instruments can detect most of these materials.
- Water from cargo fire control is not expected to cause pollution.

3. FIRE OR EXPLOSION

- Packagings can be consumed without content loss from sealed source capsule.
- Radioactive source capsules and Type B packages are designed to withstand temperatures of 1475 °F (800 °C).

EMERGENCY ACTION

4. IMMEDIATE PRECAUTIONS

- Priority response actions may be performed before taking radiation measurements.
- Priorities are life saving, control of fire and other hazards, and first aid.
- Isolate hazard area and deny entry. Notify Radiation Authority of accident conditions.
- Delay final cleanup until instruction or advice of Radiation Authority.
- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighter's protective clothing will provide adequate protection against internal radiation exposure, but not external radiation exposure.

5. FIRE

- Do not move damaged packages; move undamaged packages out of fire zone.
- Small Fires: Dry chemical, CO_2 water spray or regular foam.
- Large Fires: Water spray, fog (flooding amounts)

6. SPILL OR LEAK

- Do not touch damaged packages or spilled material.
- Slightly damaged or damp outer surfaces seldom indicate failure of inner container.
- If source is identified as being out of package, stay away and await advice from Radiation Authority.

7. FIRST AID

- Use first aid treatment according to the nature of the injury.
- Persons exposed to special form sources are not likely to be contaminated with radioactive material.

U.S. Department
of Transportation
**Research and
Special Programs
Administration**

400 Seventh St., S.W.
Washington, D.C. 20590

**IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE NUMBER USA/0673/S, REVISION 1**

This certifies that the sources described have been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency[1] and the United States of America[2] for the transport of radioactive materials.

1. Source Identification - AEA Technology QSA, Inc. Models XN30/0, XN30/1, and XN30/2 (All models maunufactured on or after May 22, 1980).

2. Source Description - Cylindrical single encapsulations made of stainless steel and tungsten inert gas or laser seal welded. Approximate exterior dimensions are 6.0 mm (0.24 in.) in diameter and 10.3 mm (0.41 in.) in length. Minimum wall thickness is 0.47 mm (0.02 in.). Construction shall be in accordance with attached AEA Technology QSA, Inc. Drawing No. RBA10251, Rev. A (2 pages).

3. Radioactive Contents - No more than either 4.44 GBq (120.0 mCi) of Cesium-137 (Model XN30/0), or 18.5 GBq (500.0 mCi) of Americium-241 (Model XN30/1), or 18.5 MBq (500.0 uCi) of Cobalt-60 (Model XN30/2). The Cs-137 is either chemically bonded within a borosilicate glass polymer or is in the form of a solid resin bead. The Am-241 is in the form of an oxide mixed with a beryllium powder that is then pressed into a solid pellet. The Co-60 is in the form of a metal.

4. Quality Assurance - Records of Quality Assurance activities required by Paragraph 310 of the IAEA regulations[1] shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors and consignees in the United States exporting or importing shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.

5. Expiration Date - This certificate expires June 30, 2009. On November 30, 2004, this certificate supersedes, in its entirety, all previously issued revisions of USA/0673/S.

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1 "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

2 Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

CERTIFICATE USA/0673/S, REVISION 1

This certificate is issued in accordance with paragraph 804 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the petition and information dated October 1, 2004 submitted by AEA Technology QSA, Inc., Burlington, MA, and in consideration of other information on file in this Office.

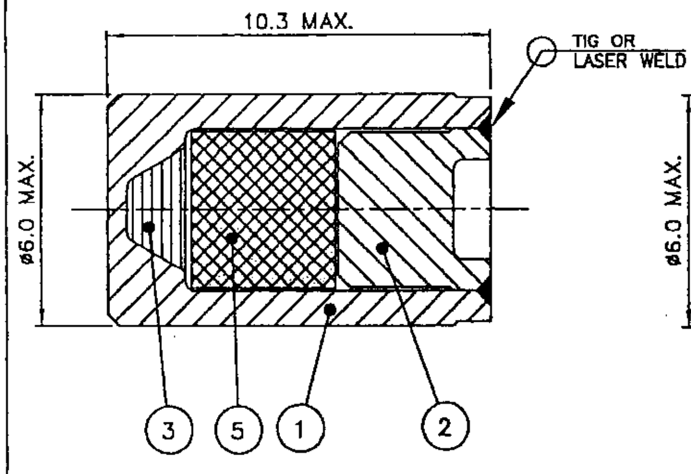
Certified by:

OCT 15 2004

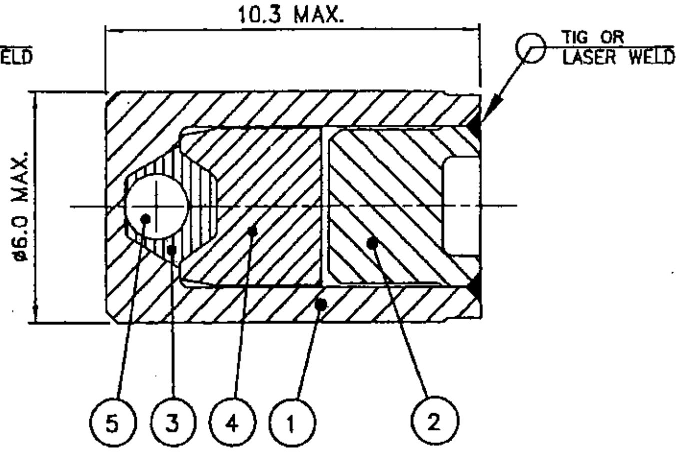
Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

(DATE)

Revision 1 - Issued to specify manufacturing dates.

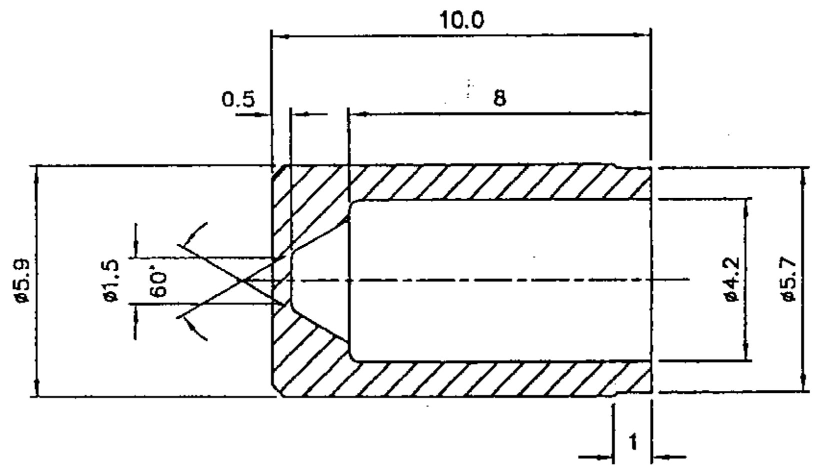


XN30/1

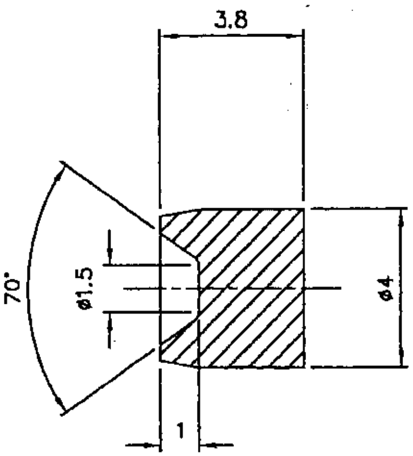


XN30/0

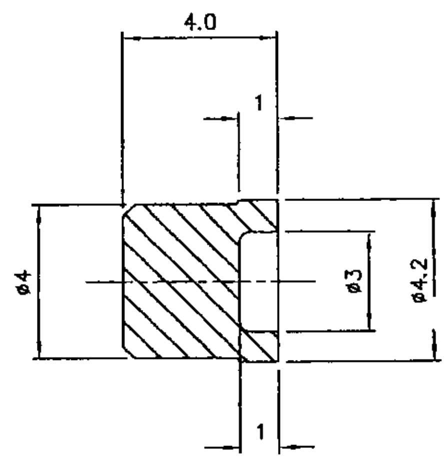
ITEM	DESCRIPTION		QTY.
1	BODY	STAIN. STL.	1
2	LID	STAIN. STL.	1
3	CERAMIC FIBRE PACKING		A/R
4	SPACER ALUMINIUM ALLOY		1
5	ACTIVE MATERIAL		A/R



ITEM 1



ITEM 4



ITEM 2

APPROVALS	
[signature]	16 Apr 04
[signature]	21 Apr 04

DIMENSIONS IN MILLIMETERES
UNLESS OTHERWISE STATED TOLERANCES:

X ±0.5
X.X ±0.1
X.XX ±0.05
ANGULAR ±5°

INTERNAL N7
EXTERNAL N6

AEA TECHNOLOGY QSA
40 NORTH AVE, BURLINGTON, MA 01803

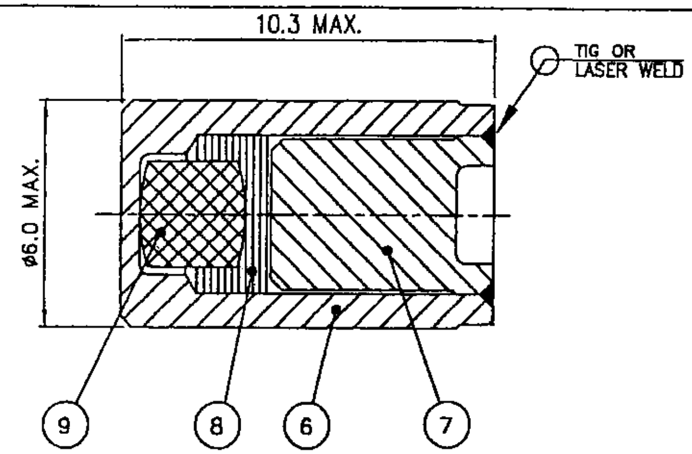
DESCRIPTIVE DRAWING

TITLE XN30/0, /1 & /2 CAPSULE ASSEMBLY

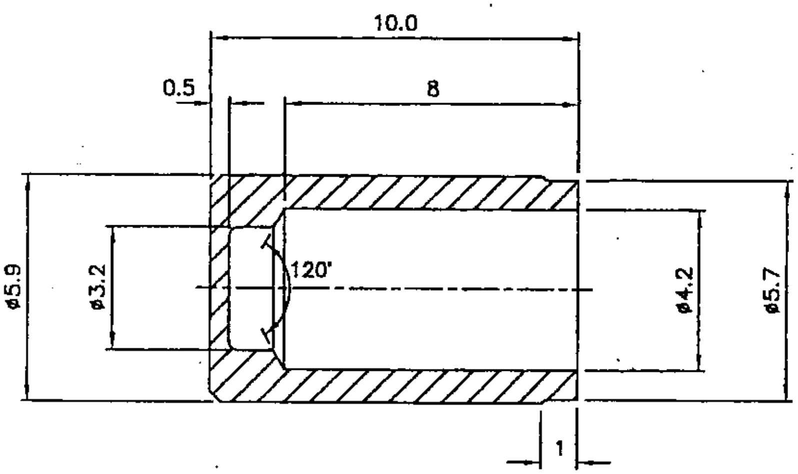
SIZE	DWG. NO.		REV
A	RBA10251		A
	SCALE: NONE	SHEET 1 OF 2	

ERF #	828

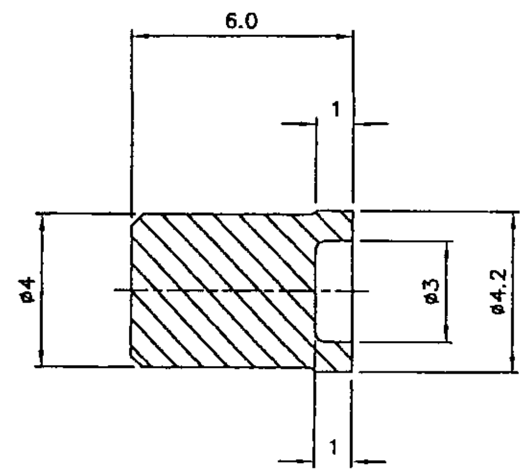
ITEM	DESCRIPTION		QTY.
6	BODY	STAIN. STL.	1
7	LID	STAIN. STL.	1
8	CERAMIC FIBRE PACKING		A/R
9	ACTIVE MATERIAL		A/R



XN30/2



ITEM 6



ITEM 7

APPROVALS		
R. [signature]	11 Apr 04	
L. [signature]	21 Apr 04	

DIMENSIONS IN MILLIMETERES
UNLESS OTHERWISE STATED TOLERANCES:
X ±0.5
X.X ±0.1
X.XX ±0.05
ANGULAR ±5'
INTERNAL N7
EXTERNAL N6

AEA TECHNOLOGY QSA
40 NORTH AVE, BURLINGTON, MA 01803

DESCRIPTIVE DRAWING

TITLE XN30/0, /1 & /2 CAPSULE ASSEMBLY

ERF #	828

SIZE	DWG. NO.	RBA10251	REV
A	SCALE: NONE	SHEET 2 OF 2	A

U.S. Department
of Transportation
**Research and
Special Programs
Administration**

400 Seventh St., S.W.
Washington, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE NUMBER USA/0632/S, REVISION 3

This certifies that the sources described have been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency[1] and the United States of America[2] for the transport of radioactive materials.

1. Source Identification - AEA Technology QSA, Inc Model Nos. AX1, X.1, and X.1/2 (All models manufactured on or after May 17, 1977).

2. Source Description - Cylindrical double encapsulations made of stainless steel and tungsten inert gas or laser seal welded. Approximate outer dimensions of all models are 7.9 mm (0.31 in.) in diameter and 10.15 mm (0.4 in.) in length. Construction shall be in accordance with attached AEA Technology QSA, Inc. Drawing No. RBA10880, Rev. D.

3. Radioactive Contents - No more than either 3.7 GBq (100.0 mCi) of Americium-241 or 13.0 GBq (351.0 mCi) of Californium-252. The Am-241 is in oxide form and mixed with beryllium powder and pressed into a solid pellet. The Cf-252 is in the form of a metal wire or an oxide solid ceramic.

4. Quality Assurance - Records of Quality Assurance activities required by Paragraph 310 of the IAEA regulations[1] shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors and consignees in the United States exporting or importing shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.

5. Expiration Date - This certificate expires June 15, 2008. On November 30, 2004, this certificate supersedes, in its entirety, all previously issued revisions of USA/0632/S.

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1 "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

2 Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

CERTIFICATE USA/0632/S, REVISION 3

This certificate is issued in accordance with paragraph 804 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the petition and information dated October 1, 2004 submitted by AEA Technology QSA, Inc., Burlington, MA, and in consideration of other information on file in this Office.

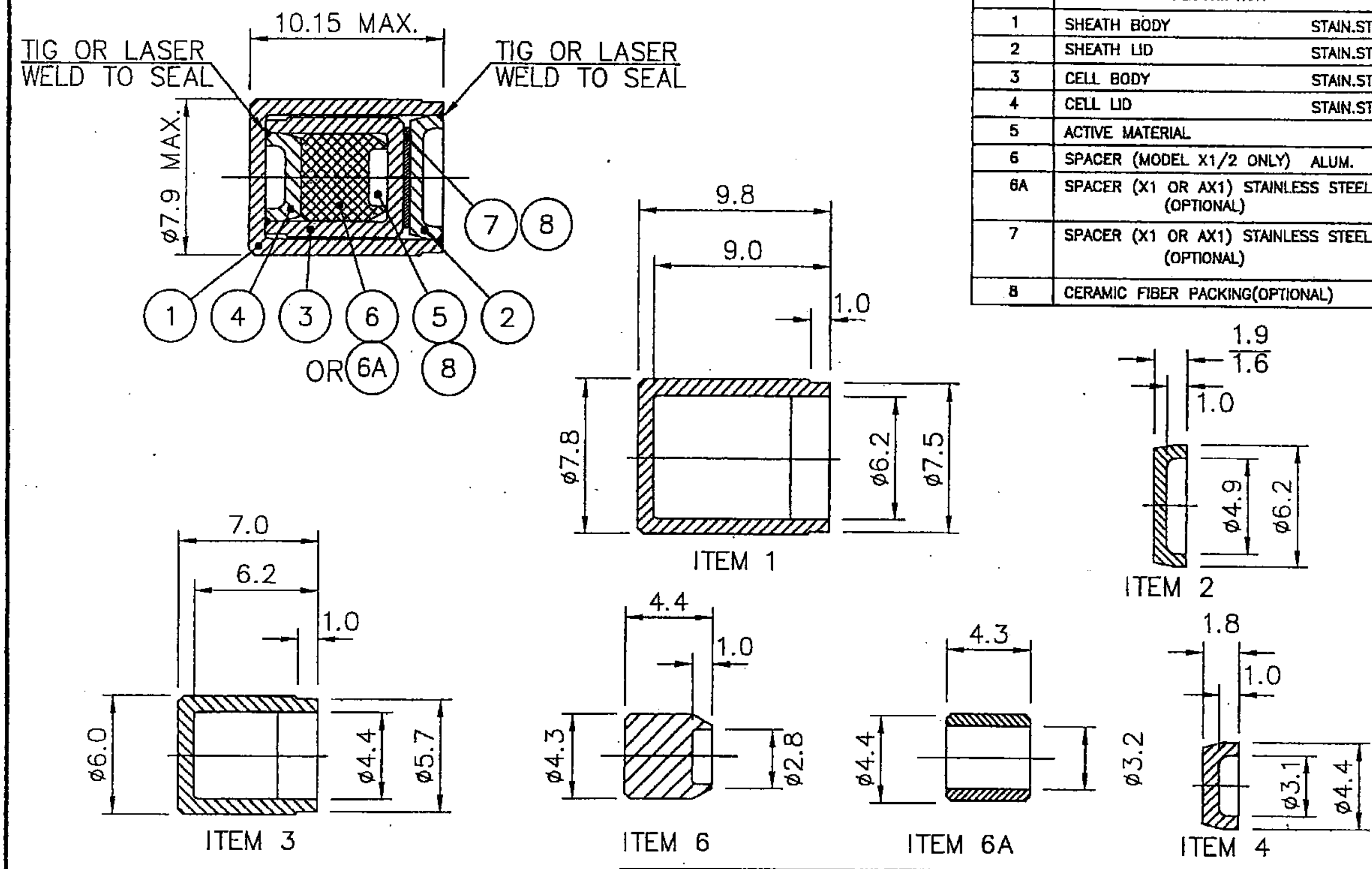
Certified by:

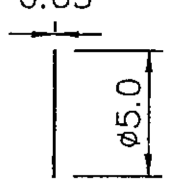
OCT 15 2004

Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

(DATE)

Revision 3 - Issued to specify manufacturing dates.





ITEM 7

ITEM No.	DESCRIPTION		QTY.
1	SHEATH BODY	STAIN.STL.	1
2	SHEATH LID	STAIN.STL.	1
3	CELL BODY	STAIN.STL.	1
4	CELL LID	STAIN.STL.	1
5	ACTIVE MATERIAL		1
6	SPACER (MODEL X1/2 ONLY)	ALUM.	AR
6A	SPACER (X1 OR AX1) STAINLESS STEEL (OPTIONAL)		AR
7	SPACER (X1 OR AX1) STAINLESS STEEL (OPTIONAL)		AR
8	CERAMIC FIBER PACKING(OPTIONAL)		AR

ERF #	732

APPROVALS

R. [signature]	1 DEC 03
L. [signature]	1 DEC 03

DIMENSIONS IN MILLIMETERES UNLESS OTHERWISE STATED TOLERANCES:
X ±0.5
X.X ±0.1
X.XX ±0.05
ANGULAR ±6'
INTERNAL N7
EXTERNAL N8

AEA TECHNOLOGY QSA
40 NORTH AVE, BURLINGTON, MA 01803

DESCRIPTIVE DRAWING

TITLE AX1, X1 & X1/2 CAPSULE ASSY

SIZE A | DWG. NO. RBA10880 | REV D
SCALE: NONE | SHEET 1 OF 1

NRC FORM 374 U.S. NUCLEAR REGULATORY COMMISSION PAGE 1 OF 4 PAGES
Amendment No. 11

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	In accordance with the letter dated September 28, 2006,
1. Golder Associates, Inc.	3. License number 29-28576-01 is amended in its entirety to read as follows:
2. 200 Century Parkway, Suite C Mount Laurel, New Jersey 08054	4. Expiration date March 31, 2011
	5. Docket No. 030-31907 Reference No.

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Cesium 137	A. Sealed sources (Troxler Dwg. A-102112, QSA Model CDCW556, or IPL Model HEG-137)	A. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
B. Americium 241	B. Sealed neutron sources (Troxler Dwg. A-102451, QSA Model AMNV.997, IPL Model Am1.NO2, Troxler Dwg. C-106580 or IPL Model Nos. 3021 or 3027)	B. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
C. Americium 241	C. Sealed neutron Sources (Troxler Dwg. 102113)	C. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State

9. Authorized use:

A. and B. In Troxler 3400 Series Model Nos. 3430, 3430-M, 3440, 3440-M, 3450, and 3451 portable gauging devices for measuring physical properties of materials.

A. and C. In Troxler Model 3411B portable gauging devices for measuring physical properties of materials.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
29-28576-01

Docket or Reference Number
030-31907

Amendment No. 11

CONDITIONS

10. Licensed material may be used or stored at the licensee's facilities located at 200 Century Parkway, Suite C, Mount Laurel, New Jersey; 15851 South US Highway 27, Suite 50, Lansing Michigan; 3719 Saunders Avenue, Richmond, Virginia, and may be used at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material, including areas of exclusive Federal jurisdiction within Agreement States.

    If the jurisdiction status of a Federal facility within an Agreement State is unknown, the licensee should contact the Federal agency controlling the job site in question to determine whether the proposed job site is an area of exclusive Federal jurisdiction. Authorization for use of radioactive materials at job sites in Agreement States not under exclusive Federal jurisdiction shall be obtained from the appropriate state regulatory agency.

11. A. Licensed material shall be used by, or under the supervision and in the physical presence of, individuals who have received the training described in the letter dated February 18, 2002.

    B. The Radiation Safety Officer for this license is Kevin T. Dunsmore.

12. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d), 40.36(b), and 70.25(d) for establishing financial assurance for decommissioning.

13. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State.

    B. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.

    C. Sealed sources need not be tested if they are in storage and are not being used; however, when they are removed from storage for use or transferred to another person and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
29-28576-01

Docket or Reference Number
030-31907

Amendment No. 11

D. The leak test shall be capable of detecting the presence of 0.005 microcurie (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 becquerels) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.

E. Tests for leakage and/or contamination, limited to leak test sample collection, shall be performed by the licensee or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services. The licensee is not authorized to perform the analysis; analysis of leak test samples must be performed by persons specifically licensed by U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.

F. Records of leak test results shall be kept in units of microcuries.

14. Sealed sources or source rods containing licensed material shall not be opened or sources removed or detached from source rods or gauges by the licensee, except as specifically authorized.

15. The licensee shall conduct a physical inventory every six months, or at other interval approved by the U.S. Nuclear Regulatory Commission, to account for all sealed sources and/or devices received and possessed under the license.

16. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport or storage, or when not under the direct surveillance of an authorized user.

17. Any cleaning, maintenance, or repair of the gauges that requires detaching the source or source rod from the gauge shall be performed only by the manufacturer or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.

18. A. If the licensee uses unshielded sealed sources extended more than 3 feet below the surface, the licensee shall use surface casing that extends from the lowest depth to 12 inches above the surface and other appropriate procedures to reduce the probability of the source or probe becoming lodged below the surface. If it is not feasible to extend the casing 12 inches above the surface, the licensee shall implement procedures to ensure that the cased hole is free of obstruction before making measurements.

B. If a sealed source or a probe containing sealed sources becomes lodged below the surface and it becomes apparent that efforts to recover the sealed source or probe may not be successful, the licensee shall notify the U.S. Nuclear Regulatory Commission and submit the report required by 10 CFR 30.50(b)(2) and (c). The licensee shall not abandon the sealed source or probe without obtaining the Commission's prior written consent.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
29-28576-01

Docket or Reference Number
030-31907

Amendment No. 11

19. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

20. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Letter dated February 18, 2002 (ML020670544)
B. Letter dated September 28, 2006 (ML062720290)
C. Facsimile dated October 27, 2006 (ML063030295)

For the U.S. Nuclear Regulatory Commission

Date November 3, 2006

By ***Original signed by Jenny Johansen***

Jenny Johansen
Materials Security and Industrial Branch
Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406
Friday, November 03, 2006 7:48:36 AM

Attachment 5

Troxler Certified Personnel (Philadelphia Operations)			
Mount Laurel	**Dosimetery**	**Safety Training Date**	**DOT Training date**
Brent Barbich	yes	8/3/2000	
Mike Coyle	yes	10/21/2004	10/21/2004
Bob Davis	yes	12/5/1990	
Mark Day	yes	5/2/2000	8/3/2000
Gregg DeHaven	yes	6/22/1999	6/22/1999
Kevin Dunsmore	yes	7/2/2002	7/2/2002
Rachel Greengas	yes	11/2/2005	11/2/2005
Chris Leaf	yes	5/11/1994	
Newark			
David Kun Li	yes	7/26/2006	7/26/2006
John Loureiro	yes	11/2/2005	11/2/2005
Frank Malinky	yes	8/11/2004	8/11/2004
Tanya Sharko	no	11/2/2005	11/2/2005
Conshohocken/ Bristol			
Mike Flanagan	yes	4/28/1999	4/28/1999
Kevin Barbour	yes	7/11/2002	8/9/2005

Attachment 6

STATE OF NEW YORK
DEPARTMENT OF HEALTH

MAR 19 2007

Flanigan Square, 547 River Street, Troy, New York 12180-2216

March 13, 2007

Michael Bracci, RSO
Golder Associates, Inc.
2221 Niagara Falls Boulevard
Niagara Falls, New York 14304-8069

License: C2528
Amendment: 2
Reference: DL: 07-043

Dear Mr. Bracci:

Enclosed is Amendment number 2 to New York State Department of Health (formerly Labor) Radioactive Materials License number C2528, which names you as Radiation Safety Officer (RSO). As RSO, you should become familiar with Code Rule 38 regulations and the conditions of your company's license.

Please note: this license replaces New York State Department of Labor Radioactive Materials License number 2528-3688, previously issued to your firm.

If you have any questions, please contact this office at (518) 402-7550 or at the address above.

Sincerely,

William T. Varcasio

William T. Varcasio
Associate Radiophysicist
Bureau of Environmental Radiation
Protection, Industrial Unit

NEW YORK STATE DEPARTMENT OF HEALTH

RADIOACTIVE MATERIALS LICENSE

Pursuant to the Public Health Law and Industrial Code Rule 38, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing radioactive material(s) for the purpose(s), and at the place(s) designated below. The license is subject to all applicable rules, regulations, and orders now or hereafter in effect of all appropriate regulatory agencies and to any conditions specified below.

1. NAME OF LICENSEE		3. LICENSE NUMBER
Golder Associates, Inc.	FEIN: 25-1401091 Phone: (716) 731-1560	**C2528** 4. EXPIRATION DATE April 30, 2009
2. ADDRESS OF LICENSEE		5a. REFERENCE / b. AMENDMENT NO.
2221 Niagara Falls Boulevard Niagara Falls, New York 14304-8069		**DL: 07-043** / **2**

6. Radioactive Materials (element in mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Cesium 137	A. Sealed Sources	A. Not to exceed 200 millicuries total.
B. Americium 241: Beryllium	B. Sealed Sources	B. Not to exceed 800 millicuries total.

9. Authorized use:
Conditions 6.A. and 6.B.

A. The licensee is authorized to use any sealed source, or associated portable moisture/density gauge which has been manufactured and distributed in accordance with a specific license issued by an Agreement State or the United States Nuclear Regulatory Commission. Combinations of sources and devices must be compatible for use as stated in a Sealed Source and Device Registration Certificate (i.e., stated in the registration certificate for the source or device).

B. No single source may exceed the maximum activity specified for that nuclide in the Sealed Source and Device Registration Certificate for any device in which the source is to be used.

NEW YORK STATE DEPARTMENT OF HEALTH

RADIOACTIVE MATERIALS LICENSE

3. License Number C2528 **5a. Ref. DL: 07-043** **b. Amend. No. 2**

10. A. Licensed material may be used at temporary job sites of the licensee anywhere within the State of New York, where the Department of Health exercises jurisdiction for regulating the use of radioactive material. This license does not authorize possession of radioactive materials at the address in Condition 2 or at any permanent storage location in New York State.

    B. Overnight storage at temporary locations shall be in accordance with statements referenced in Condition 24 herein, providing that such storage may not be in a residence, or in an attached garage except within a vehicle. Any vehicle used for storage shall be driven only for purposes associated with use or transport of the contained radioactive material, by a person qualified to use the material, and no passengers shall be carried unless they are also involved in work under this license. Vehicular storage shall only be allowed if no other storage is possible and shall not exceed five (5) consecutive nights unless authorization to exceed this limit is obtained from the Department.

    C. Under no circumstances shall radioactive material authorized by this license be transferred to the custody of any person or firm other than the licensee, or be used or stored by another person or firm or its employees; unless that person or firm possesses a valid license to possess and use such radioactive material.

    D. This license is not valid for purposes of reciprocity.

11. Licensed material shall be used by, or under the supervision of, **Michael Bracci** (Radiation Safety Officer), by licensee personnel trained and certified by the device manufacturer. The licensee shall maintain a complete and accurate record of the qualifications of each person permitted to use radiation sources under this license.

12. Sealed Sources containing radioactive materials shall not be opened or removed from gauges by the licensee.

13. A. The licensee is not authorized to dismantle, repair or effect any changes in the source holders/gauges. Any maintenance involving exposure of the source or removal of shielding is prohibited. All other maintenance shall be performed in accordance with the manufacturer's recommendations.

    B. The licensee shall not alter labels attached to gauges, and shall maintain labels in legible condition at all times.

14. The licensee shall instruct persons who engage in work under the license, in accordance with section 38.27(c) of Code Rule 38. Such instruction shall include the licensee's operating and emergency procedures, and other information contained in documents incorporated in Condition 24.

NEW YORK STATE DEPARTMENT OF HEALTH

RADIOACTIVE MATERIALS LICENSE

3. License Number C2528 **5a. Ref. DL: 07-043** **b. Amend. No. 2**

15. The licensee shall maintain a current copy of the license referenced in Condition 24 on file with the Department. A copy of each amendment to that license shall be provided to the Department within 15 days of issuance by the licensing agency. The licensee shall immediately notify the Department by telephone in the event that the referenced license is suspended or terminated.

16. A. The licensee shall maintain a utilization log containing the identification of sources used in New York State, dates of use, the location of use, and the identity of user.

    B. The log shall be made available upon request pursuant to Condition 20.

17. Current copies of the following documents shall be maintained at temporary job sites for Department inspection:

    A. The manufacturer's instruction manual and the licensee's operating and emergency procedures.

    B. A copy of the results of the latest test for leakage and/or contamination performed on the sealed sources.

    C. A copy of this license.

18. A. In the event of a serious incident involving licensed material, including but not limited to, the theft or loss of a gauge, or damage to a gauge, the Department shall be notified immediately by telephone. Subsequent information about the incident acquired by the licensee shall be reported as it is received. All gauge users must carry the NYSDOH's current telephone number in their emergency procedures.

    B. In the event that a gauge is damaged, the gauge and surrounding area shall be surveyed with an appropriate survey meter, and the results of the survey shall be reported to and approved by the Department before the gauge is removed from the site.

NEW YORK STATE DEPARTMENT OF HEALTH

RADIOACTIVE MATERIALS LICENSE

3. License Number C2528 **5a. Ref. DL: 07-043** **b. Amend. No. 2**

19. A. The licensee shall ensure that all persons authorized to use portable gauges comply with safe use and maintenance procedures and that they do not leave a gauge unattended or unsecured at any time, even for a few minutes.

    B. Each gauge shall be maintained as prescribed by the manufacturer. In particular, the licensee must take such actions as are necessary to keep gauges in compliance with the Sealed Source & Device Registry sheets for the devices, including any recalls, safety retrofits, inspections or other actions specified by the device manufacturer.

    C. Licensees shall ensure that gauges are only used by individuals who have received the required training, and who follow prescribed procedures. Any evidence of abuse, mishandling or failure to perform necessary maintenance by a worker must be addressed and corrected.

20. The Licensee shall maintain all records required by Industrial Code Rule 38 (12NYCRR38) and the conditions of the license, and shall, at the request of the Department, bring such records to such location within New York State as the Department may direct for the purpose of inspection.

21. Each gauge shall be inspected on each day of use before use, and upon its return to storage, to ensure proper operation of all safety features including the following:

    A. Turn the gauge over and visually verify that the tungsten sliding block is completely closed, keeping as much distance as possible between you and the base of the gauge. If any portion of the opening is uncovered, the sliding block must be cleaned and returned to the fully closed position before transporting, using, or storing the gauge. The manufacturer's instructions for cleaning the sliding block must be followed.

    B. If a radiation survey meter is available, and in good working order, radiation levels at the gauge surface shall also be checked. The exposure rate should be approximately 10-20 mrem per hour.

    C. If a sliding block is found to be partially or fully open, the Department of Health must be notified by telephone within 24 hours.

22. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport, storage or when not under the direct surveillance of an authorized user.

23. A minimum of two independent physical controls that form tangible barriers shall be used to secure each portable gauge from unauthorized removal, whenever the gauge is not under the control and constant surveillance of an authorized user.

NEW YORK STATE DEPARTMENT OF HEALTH

RADIOACTIVE MATERIALS LICENSE

3. License Number C2528 **5a. Ref. DL: 07-043** **b. Amend. No. 2**

24. Except as specifically provided otherwise in this License, the licensee shall conduct its program in accordance with the statements, representation and procedures contained in the documents, including any enclosures, listed below. The Department's Regulations shall govern, unless the statements, representation and procedures in the licensee's application and correspondence are more restrictive than the Regulations.

A. License Renewal Application dated May 13, 2003, signed by Brian Senefelder, with attachments.

B. License Renewal Request dated April 5, 2006, signed by Lee Anne Lackey.

C. Letter dated February 14, 2007, signed by David Wehn, with attachments.

FOR THE NEW YORK STATE DEPARTMENT OF HEALTH

DATE: 3/13/07
WTV:msw

by: Clayton J. Bradt, CHP
Principal Radiophysicist

Attachment 7

Ludlom 19 Serial # 238749

Location	Last Calibrated	Calibration Due	Notes
Foote Minerals (Malvern ,PA)	purchased 4/4/07	March-07	

Charge #

Atlantic Nuclear

1020 Turnpike Street, Unit 9
Canton, MA 02021
FID #04-2738197

Phone #	Fax #
781-828-9118	781-828-1319

INVOICE

Date	Invoice #
4/4/2007	16173

RECEIVED
APR 16 2007
GOLDER-N.J.

Bill To	Ship To
GOLDER ASSOCIATES ATTN: MARK CASE 200 CENTURY PARKWAY SUITE C MT. LAUREL, NJ 08054	GOLDER ASSOCIATES ATTN: KEVIN DUNSMORE 200 CENTURY PARKWAY SUITE C MT. LAUREL, NJ 08054

Our Sales Order #	P.O. Number	Terms	Via	F.O.B.
AN50290		AMEX	FED-X	PPD

Quantity	Item Code	Description	Price Each	Amount
1	MODEL 19	MICRO R METER	1,095.00	1,095.00
	S & H	SHIPPING & HANDLING - OVERNIGHT AT CUSTOMER REQUEST	97.39	97.39
		PAID IN FULL BY AMERICAN EXPRESS		

SERIAL #
- 238749 -

SALES DRAFT
ATLANTIC NUCLEAR CORP
1020 TURNPIKE ST STE 9
CANTON, MA 02021-2814
TERMINAL 9266693

220040876592 B
04/12/07 09:19AM
FAX XXXXXXXXXX6004
INVOICE 32001 002
AUTH. CODE 113799
AV. CODE AAA

SALE TOTAL $1192.39

CUSTOMER COPY

Sales Tax (0.0%)	$0.00
Total	$1,192.39
Balance Due	$1,192.39

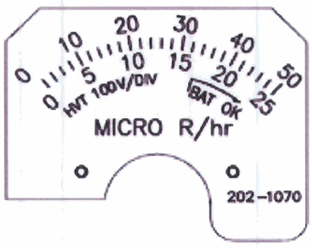
MODEL 19 MicroR Meter

PART NUMBER:48-1615

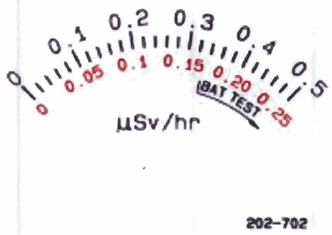
- Built-In *1"* X *1" NaI(Tl)* Gamma Scintillator
- ***5*** Ranges
- Splashproof Shields
- ***Total*** Rangefrom ***0 - 5,000 µR/hr***

WORKING ENVIRONMENT: Splash proof shields for outdoor use
INDICATED USE: Low level **(microR)** gamma survey
DETECTOR: 1" X 1" sodium iodide **(NaI)Tl** scintillator
SENSITIVITY: Typically 175 **cpm/microR/hr (*^{137}Cs gamma*)**
ENERGY RESPONSE: Energy dependent
METER DIAL:0 - 25 **microR/hr, 0** - 50 **microR/hr,** BAT TEST
RANGE SELECTIONS: 0 - 25,O - 50,0 - **250, 0** - **500, 0** - 5000 **microR/hr**
LIGHT: Push-button to activate
LINEARITY: Reading within plus or minus 10% of true value
AUDIO: Built in **unimorph** speaker with **ON/OFF** switch (greater than 60 dB at 2feet)
CALIBRATION CONTROLS: Accessible from front of instrument (protective cover provided)
RESPONSE: Toggle switch for FAST (4 seconds) or SLOW (22 seconds) from 10% to 90% of final reading
RESET: Push-button to zero **meter**
POWER: 2 **each "D"** cell batteries (housed in sealed compartment that is externally accessible)
BATTERY LIFE: Typically 600 hours with alkaline batteries (battery condition can be checked on meter)
METER: 2.5" **(6.4cm)** arc, 1 mA analog type
CONSTRUCTION: Cast and drawn aluminum with beige polyurethane enamel paint
TEMPERATURE RANGE: -4" F(-20" C) **to 122° F(50°** C)
May be certified for operation from -40" **F(-40°** C) to **150° F(65°** C)
SIZE: 7.8"(19.8 cm)H X 3.5"(8.9 cm)W X 8.5"(21.6 cm)L
WEIGHT: 4.5 **lbs(2.1** kg) including batteries

Common Meter Dial



202-1070
0 - 50 µR/hr; 0 - 25 µR/hr



202-702
0 - 0.5 µSv/h; 0 - 0.25 µSv/h

Accessories

Check Source
Headset
Standard Carrying Case
Air and Water Tight Carrying Case

Replacement Parts

Meter Bezel
Meter Movement
Handle
Detector Assembly

Ordering Info, Manual ANSI Test Report Model 19 Response Curve

Return to ludlums.com

For comments or suggestions please contact webmaster at: ludlum@ludlums.com
Page last updated: December 2000

MAPQUEST.

Start: *200* Century Pkwy
Mount Laurel, NJ 08054-1150, US

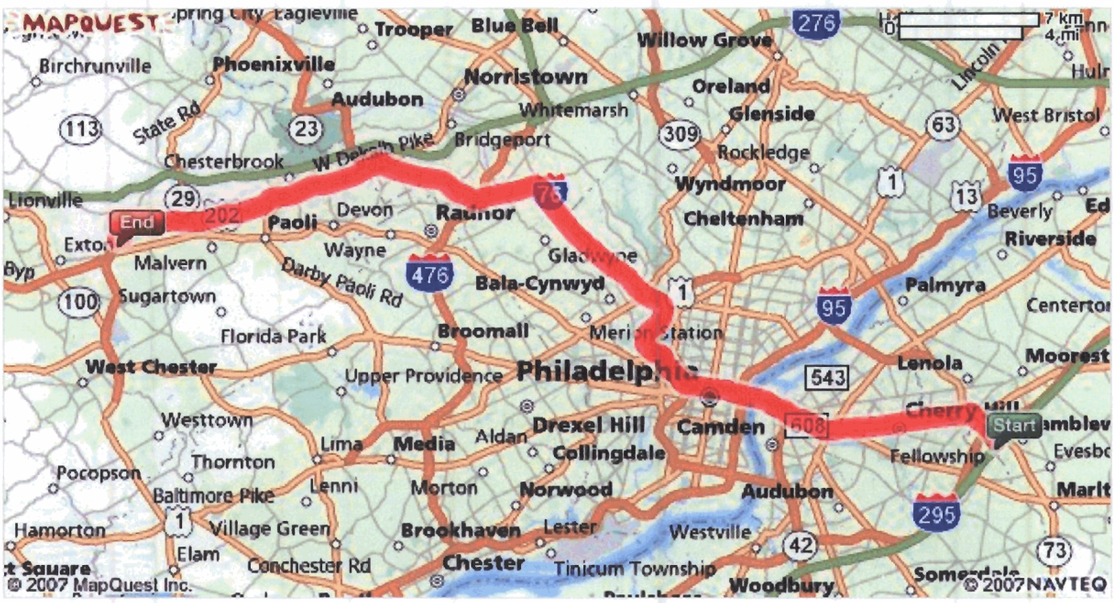
End: 15 S Bacton Hill Rd
Malvern, PA 19355-1502, US

Notes:
Only text visible within note field will print.

Directions	Distance
Total Est. Time: 55 minutes **Total Est. Distance:** 41.31 miles	
START **1:** Start out going NORTH on CENTURY PKWY toward FELLOWSHIP RD.	0.1 miles
2: Turn RIGHT onto FELLOWSHIP RD.	0.1 miles
3: Turn LEFT onto NJ-73 N.	1.2 miles
WEST 38 AVE / B FRANKLIN BR /	5.8 miles
4: Merge onto KAIGHN / NJ-38 W toward RT-41	
WEST 30 5: HADDONFIELD. Turn RIGHT onto ADMIRAL WILSON BLVD / US-30 W.	0.1 miles
WEST 30 **6:** Turn SLIGHT LEFT onto ADMIRAL WILSON BLVD / US-30 W. Continue to follow US-30 W (Portions toll) (Crossing into PENNSYLVANIA).	3.8 miles
7: Take the I-676 W / US-30 W ramp.	<0.1 miles
WEST 30 8: Merge onto US-30 W.	2.6 miles
WEST 76 **9:** Stay STRAIGHT to go onto I-76 W.	15.5 miles
28B-EXIT **10:** Take the US-202 S / US-262 N / US-422 W exit- EXIT 328B-A- toward WEST CHESTER / KING OF PRUSSIA / POTTSTOWN / SWEDESFORD RD.	0.4 miles
SOUTH 202 11: Merge onto US-202 S via EXIT 328A toward WEST CHESTER.	9.5 miles
WEST 401 12: Merge onto CONESTOGA RD / PA-401 W.	0.6 miles
13: Turn LEFT onto PHOENIXVILLE PIKE.	0.8 miles
14: Turn RIGHT onto SWEDESFORD RD.	0.1 miles

15:	Turn LEFT onto S BACTON HILL RD.	<0.1 miles
16:	End at 15 S **Bacton Hill Rd** Malvern, PA 19355-1502, US	

Total Est. Time: 55 minutes Total Est. Distance: 41.31 miles



Start:
200 Century Pkwy
Mount Laurel, NJ **08054-1150,** US

End:
15 S Bacton Hill Rd
Malvern, PA **19355-1502,** US