1306

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE 9/29/83

SUBJECT NRC License Renewal

FROM Arnold R. Gahler
EPA Region 10 Laboratory

TO Joseph C. Wang
Material Licensing Branch
Division of Fuel Cycle and Material Safety
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

'83 OCT -3 A10:53

This refers to renewal of License No. 46-10100-02 and Control No. 14851.

A delay in reply resulted from installation of a new gas chromatograph containing a radioactive source and the anticipation of another instrument with a source. Since the latter has not been received, we will file an amendment when it is installed.

Hopefully, this applicatin for renewal meets the requirements indicated in Brenda E. Brown's letter of May 31, 1983.

COPY SENT REGION V

NRC Form 313 I (12-81) 10 CFR 30 — U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

See attached instructions for details.

Completed applications are filed in duplicate with the Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety, and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 or applications may be filed in person at the Commission's office at 1717 H Street, NW, Washington, D. C. or 7915 Eastern Avenue, Silver Spring, Maryland.

1. APPLICATION FOR: *(Check and/or complete as appropriate)*

	a. NEW LICENSE
	b. AMENDMENT TO LICENSE NUMBER
X	c. RENEWAL OF LICENSE NUMBER 46-10100-02

2. APPLICANT'S NAME *(Institution, firm, person, etc.)*
U.S. Environmental Protection Agency
Region 10 Laboratory
TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
206-442-0370

3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION
Arnold R. Gahler, Laboratory Director
TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
206-442-0370

4. APPLICANT'S MAILING ADDRESS *(Include Zip Code)*
(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)
P.O. Box 549
Manchester, WA 98353

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED *(Include Zip Code)*
7411 Beach Drive East
Port Orchard, WA 98366

(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)

6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL
(See Items 16 and 17 for required training and experience of each individual named below)

	FULL NAME	TITLE
a.	Robert Henry Rieck	Chemist
b.	Phillip Roger Davis	Physical Science Technician
c.		

7. RADIATION PROTECTION OFFICER
Arnold Robert Gahler

Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.

8. LICENSED MATERIAL

LINE NO.	A ELEMENT AND MASS NUMBER	B CHEMICAL AND/OR PHYSICAL FORM	C NAME OF MANUFACTURER AND MODEL NUMBER *(If Sealed Source)*	D MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME
(1)	Hydrogen-3	Titanium Tritide Foils	SLC Model 508-3	Not to exceed 250 Millicuries per source
(2)	Nickel-63	Plated Foil	Tracor detector cell 114400-3201	Not to exceed 20 Millicuries per source
(3)	Nickel-63	Plated Foil	Tracor detector cell 111019-001	Not to exceed 20 Millicuries per source
(4)	Nickel-63	Plated Foil	NER-004, Tracor cell 115500	Not to exceed 20 Millicuries per source

	E DESCRIBE USE OF LICENSED MATERIAL
(1)	For use in Tracor MT222 gas chromatograph for sample analysis.
(2)	For use in Tracor MT222 gas " " " "
(3)	For use in Tracor MT222 gas " " " "
(4)	For use in Tracor 570 gas " " " "

9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Storage in devices only		
(2)	Reference item 8		
(3)			
(4)			

10. RADIATION DETECTION INSTRUMENTS

LINE NO.	TYPE OF INSTRUMENT A	MANUFACTURER'S NAME B	MODEL NUMBER C	NUMBER AVAILABLE D	RADIATION DETECTED (alpha, beta, gamma, neutron) E	SENSITIVITY RANGE (milliroentgens/hour or counts/minute) F
(1)	N/A					
(2)						
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☐ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY

N/A

☐ b. CALIBRATED BY APPLICANT

Attach a separate sheet describing method, frequency and standards used for calibrating instruments.

12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
☐ (1) FILM BADGE ☐ (2) THERMOLUMINESCENCE DOSIMETER (TLD) ☐ (3) OTHER (Specify): _____	N/A	☐ MONTHLY ☐ QUARTERLY ☐ OTHER (Specify):

13. FACILITIES AND EQUIPMENT (Check were appropriate and attach annotated sketch(es) and description(s).

☒ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC.
☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC.
☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.
☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED

Return of source to supplier

b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED. IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE.

15. RADIATION PROTECTION PROGRAM

a. Leak testing sealed sources

A commercial leak-test Kit supplied by Tracor (Tracor Part No. 111131-0001) is used for the the wipe tests. Wipe tests are performed every 6 months by R. Rieck for the nickel-63 foil detector and sent to Tracor for evaluation.

Instructions for conducting the wipe test are supplied with test Kits and are maintained in file with test results.

b. Gas chromatographic detector cells are serviced, if necessary, by the following organizations:

Hydrogen-3 Detectors
Detector Service Center
P.O. Box 1044
Cary, NC 27511
(919) 469-0259
NRC License 092-660-1

Nickel-63 Detectors
Tracor Instruments Group
6500 Tracor Lane
Austin, Texas 78721

c. Temperature control devices are installed on each gas chromatograph to prevent excess temperature exposure for the tritium or nickel foil.

Since leak tests are unnecessary to the tritium foil, the condition of the source will be checked semi-annually by measuring the ionization current of the cell under repeatable conditions of carrier gas flow and cell voltage.

RESPONSIBLILITIES of RPO

a. Ensures that detectors remain in instrumentation except for servicing. Use of devices is limited to gas chromatography. Instrumentation remains in a permanent location in the laboratory.

b. Ensures that devices are shipped properly when removed for servicing by reputable servicing organizations. Entire device is shipped, not radioactive foil.

c. Ensures that periodic leak tests are conducted, standards are met, records filed and reviewed for compliance with NRC regulations, requirements, and license conditions.

d. RPO and R. Rieck home phones are on laboratory telephone alarm for both fire and security. Names and phone numbers are posted near instruments and other parts of building for contact in the event of an emergency. Building maintenance personnel are also on emergency phone.

e. All laboratory personnel are given an annual physical examination by EPA. RPO coordinates this with EPA Regional Safety Officer.

f. Written instructions have been issued to users of gas chromatographs with detectors that the devices will be removed from the instrument only for purposes of shipping for servicing, if required.

   Instructions also include emergency procedures in case of accident and personnel to contact.

g. Detector cells with hydrogen-3 have not been vented since this was not formerly required. The laboratory contains a hood certified annually by EPA for performance. Ventilation is single pass to atmosphere. Venting can be arranged if necessary.

16. Formal Training Radiation Safety

R.H. Rieck - None

In-house training only.

P.R. Davis - None

A.R. Gahler

Courses: 1. Radioactive Tracer Methods (4 hours credit including Laboratory)

Oregon State University, 1965
Dr. C.H. Wang, Director of the Radiation Center

2. Properties of Ionizing Radiation
University of Buffalo, 1959

It is anticipated that EPA will be offering a training course for personnel involved with radioisotopes in laboratory and field instrumentation.

17. Experience

R. H. Rieck - No experience with radiation. 15 years gas chromatography experience with detectors containing radioisotopes.

P. R. Davis - No experience with radiation. Limited experience with gas chromatography

A. R. Gahler - Performed laboratory studies on degradation of C-14 tagged NTA in environmental samples such as lake sediment and water. Low levels used for a year at EPA laboratory, Corvallis, Oregon.

Laboratory experience with gas chromatographs using detectors containing radioisotopes.

Supervised laboratory at Union Carbide Corp. handling isotopes in a radiation section. Isotopes handled:

Tritium - (low levels)
Sulfur - 35 (10 mc)
Zirconium - 95 (low levels)

These were used to study efficiency of analytical separations.

INSTRUCTIONS FOR USING PART #111131-0001 WIPE TEST KITS FOR NICKEL 63 DETECTORS

1. WIPE TEST ARE REQUIRED AT 6 MONTH INTERVALS ON ALL IONIZATION DETECTORS CONTAINING Ni_{63} SOURCES. ALL DETECTORS CONTAINING Ni_{63} ARE SHIPPED WITH TWO WIPE TEST KITS AND A CERTIFICATE OF INSPECTION.
2. THE CERTIFICATE OF INSPECTION SUPPLIED WITH THE DETECTOR GIVES THE RESULTS OF INITIAL WIPE TESTS PERFORMED ON THE OUTSIDE SURFACES OF THE DETECTOR PRIOR TO SHIPMENT. THIS INFORMATION SHOULD BE MAINTAINED FOR INSPECTION BY THE AEC.
3. TWO WIPE TEST KITS ARE INCLUDED TO COVER THE FIRST YEAR'S OPERATION OF THE DETECTOR. ONE WIPE TEST SHOULD BE PERFORMED ON THE DATE SPECIFIED ON THE CERTIFICATE OF INSPECTION. THE SECOND WIPE TEST SHOULD BE PERFORMED SIX MONTHS LATER.
4. ADDITIONAL WIPE TEST KITS (TRACOR PART NUMBER 111131-0001) FOR SUBSEQUENT SURVEYS ARE AVAILABLE FROM:

TRACOR, INC.
6500 TRACOR LANE
AUSTIN, TEXAS 78721

THE WIPE TEST PROCEDURE IS AS FOLLOWS:

STEP 1. REMOVE THE SWAB FROM THE PLASTIC CASE.

STEP 2. MOISTEN THE TIP OF THE SWAB WITH THE SOLVENT PROVIDED IN THE SMALL BROWN BOTTLE.

STEP 3. GRASPING THE HOLDER, RUB THE MOISTENED TIP OF THE SWAB OVER THE OUTSIDE SURFACES OF THE DETECTOR AND ALL SURFACES IMMEDIATELY ADJACENT TO THE DETECTOR. BE PARTICULARLY CAREFUL TO WIPE THE OUTLET TUBE TERMINUS.

STEP 4. REPLACE THE SWAB IN THE PLASTIC CASE, BEING CAREFUL NOT TO TOUCH THE COTTON TIP TO THE PLASTIC.

STEP 5. FILL IN THE INFORMATION REQUESTED BELOW.

STEP 6. PLACE THIS SHEET ALONG WITH THE PLASTIC CASE CONTAINING THE SWAB IN THE SHIPPING CONTAINER PROVIDED AND MAIL BY THE PARCEL POST TO:

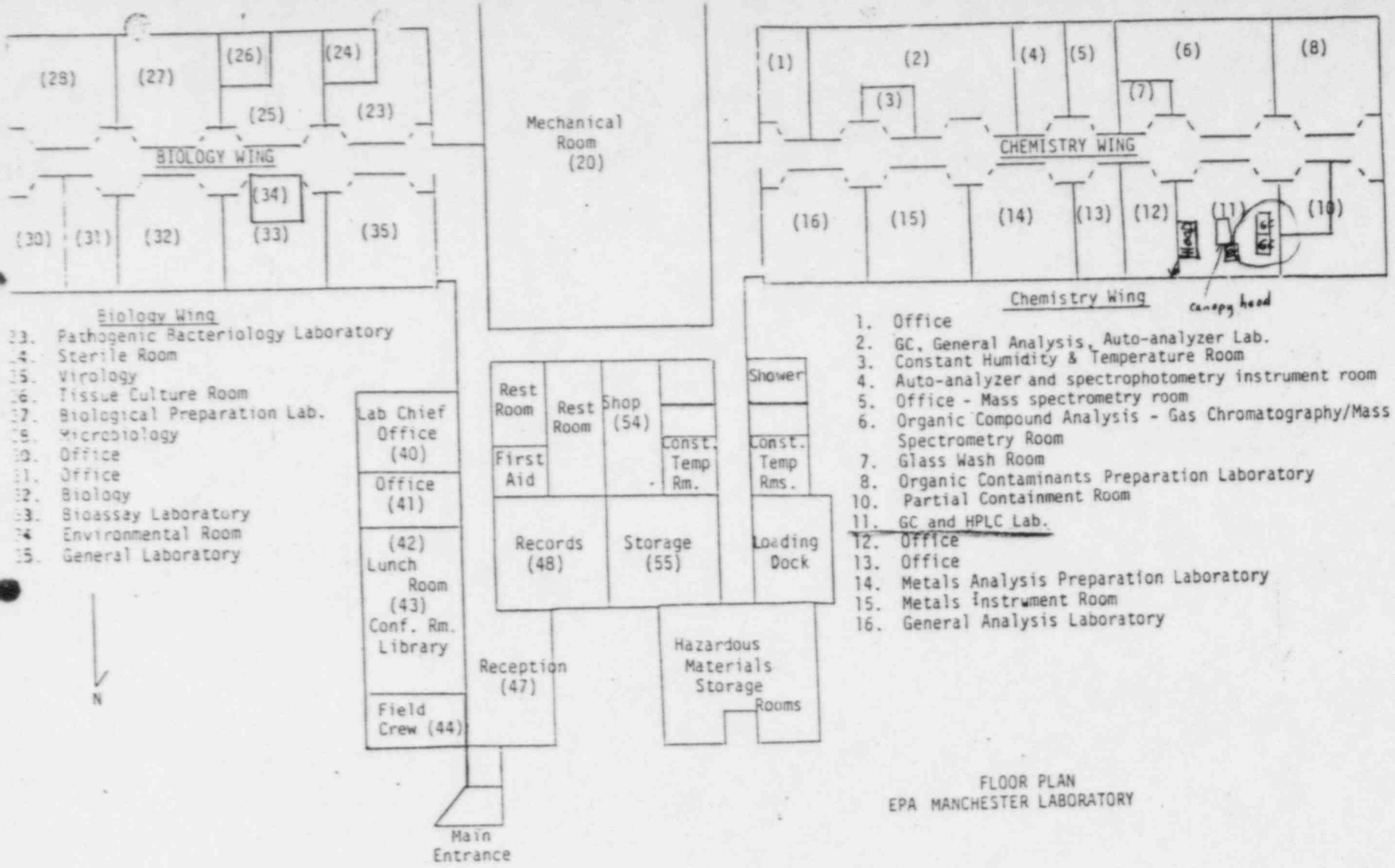
TRACOR, INC.
6500 TRACOR LANE
AUSTIN, TEXAS 78721
ATTN: RADIATION OFFICER

DATE OF SWAB TEST_____

DETECTOR SERIAL NO._____

SIZE	CODE IDENT NO.		
A	19397	112619	-
SCALE			SHEET 2

TRACOR STOCK NO. 3306-0002A



Biology Wing

23. Pathogenic Bacteriology Laboratory
24. Sterile Room
25. Virology
26. Tissue Culture Room
27. Biological Preparation Lab.
28. Microbiology
30. Office
31. Office
32. Biology
33. Bioassay Laboratory
34. Environmental Room
35. General Laboratory

Chemistry Wing

1. Office
2. GC, General Analysis, Auto-analyzer Lab.
3. Constant Humidity & Temperature Room
4. Auto-analyzer and spectrophotometry instrument room
5. Office - Mass spectrometry room
6. Organic Compound Analysis - Gas Chromatography/Mass Spectrometry Room
7. Glass Wash Room
8. Organic Contaminants Preparation Laboratory
10. Partial Containment Room
11. GC and HPLC Lab.
12. Office
13. Office
14. Metals Analysis Preparation Laboratory
15. Metals Instrument Room
16. General Analysis Laboratory

FLOOR PLAN
EPA MANCHESTER LABORATORY

13. Facilities & Equipment

No laboratory air is recycled to the building.

INFORMATION REQUIRED FOR ITEMS 15, 16 AND 17

Describe in detail the information required for Items 15, 16 and 17. Begin each item on a separate page and key to the application as follows:

15. RADIATION PROTECTION PROGRAM. Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures *(if needed)*, day-to-day general safety instruction to be followed, etc. If the application is for sealed source's also submit leak testing procedures, or if leak testing will be performed using a leak test kit, specify manufacturer and model number of the leak test kit.

16. FORMAL TRAINING IN RADIATION SAFETY. Attach a resume for each individual named in Items 6 and 7. Describe individual's formal training in the following areas where applicable. Include the name of person or institution providing the training, duration of training, when training was received, etc.

    a. Principles and practices of radiation protection.

    b. Radioactivity measurement standardization and monitoring techniques and instruments.

    c. Mathematics and calculations basic to the use and measurement of radioactivity.

    d. Biological effects of radiation.

17. EXPERIENCE. Attach a resume for each individual named in Items 6 and 7. Describe individual's work experience with radiation, including where experience was obtained. Work experience or on-the-job training should be commensurate with the proposed use. Include list of radioisotopes and maximum activity of each used.

18. CERTIFICATE

(This item must be completed by applicant)

The applicant and any official executing this certificate on behalf of the applicant named in Item 2, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Part 30, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

WARNING.–18 U.S.C., Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

a. LICENSE FEE REQUIRED *(See Section 170.31, 10 CFR 170)* N/A	b. CERTIFYING OFFICIAL *(Signature)* ARGahler
	c. NAME *(Type or print)* Arnold R. Gahler
(1) LICENSE FEE CATEGORY: N/A	d. TITLE Laboratory Director
(2) LICENSE FEE ENCLOSED: $	e. DATE 9/27/83