

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE 5/10/83

SUBJECT Renewal Application for Radioisotope License

FROM Arnold R. Gahler, Chief
Laboratory Branch, ES Division

Arnold R. Gahler

TO Division of Fuel Cycle and Material Safety
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Enclosed are copies in duplicate for renewal of our radioisotope license which terminates July 31, 1983.

Acknowledgment of receiving this application would be appreciated.

cc: G. O'Neal - R. Bauer
E. Cowan
N. McGee - R. Blair

8602180406 851107
REGS LIC30
46-10100-02 PDR

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INSPECTION AND ENFORCEMENT

NRC Form 313 I (12-81) 10 CFR 30		U.S. NUCLEAR REGULATORY COMMISSION							
APPLICATION FOR BYPRODUCT MATERIAL LICENSE INDUSTRIAL		1. APPLICATION FOR: <i>(Check and/or complete as appropriate)</i>							
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.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">a. NEW LICENSE</td> <td style="width: 50%;"></td> </tr> <tr> <td style="text-align: center;">b. AMENDMENT TO: LICENSE NUMBER</td> <td></td> </tr> <tr> <td style="text-align: center;">c. RENEWAL OF: LICENSE NUMBER</td> <td style="text-align: center;"> X 46-10100-02 </td> </tr> </table>		a. NEW LICENSE		b. AMENDMENT TO: LICENSE NUMBER		c. RENEWAL OF: LICENSE NUMBER	X 46-10100-02
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b. AMENDMENT TO: LICENSE NUMBER									
c. RENEWAL OF: LICENSE NUMBER	X 46-10100-02								
2. APPLICANT'S NAME <i>(Institution, firm, person, etc.)</i> 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 <i>(Include Zip Code)</i> <i>(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)</i> P.O. Box 549 Manchester, WA 98353		5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED <i>(Include Zip Code)</i> 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 <i>(See Items 16 and 17 for required training and experience of each individual named below)</i>									
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.	ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL FORM	NAME OF MANUFACTURER AND MODEL NUMBER <i>(If Sealed Source)</i>	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME					
(1)	Hydrogen-3	On metal foils in detectors	U.S. Radium Corp. Mod. Lab-508-1 or 508-3	3 foils-250 millicuries ea. not to exceed 750 mc					
(2)	Hydrogen-3	On metal foils in detectors	foils. " " " " "	2-foils-250 millicuries ea. not to exceed 500 mc					
(3)	Nickel-63	On metal foils in detectors	Tracor detector cell 114400-3201	10 millicuries					
(4)	Nickel-63	On metal foil in detectors	Tracor detector cell 111019-001	14.5 millicuries					
DESCRIBE USE OF LICENSED MATERIAL E									
(1)	Radioactive material is in a detector inside a gas chromatograph								
(2)	"	"	"	"					
(3)	"	"	"	"					
(4)	"	"	"	"					

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)	Foil in Detector mounted on gas Chromatograph	Tracor	MT 222
(2)	"	Tracor	MT 222
(3)	"	Tracor	MT 222
(4)	"	Tracor	MT 222

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

<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY N/A	<input type="checkbox"/> b. CALIBRATED BY APPLICANT Attach a separate sheet describing method, frequency and standards used for calibrating instruments.
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12. PERSONNEL MONITORING DEVICES

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

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

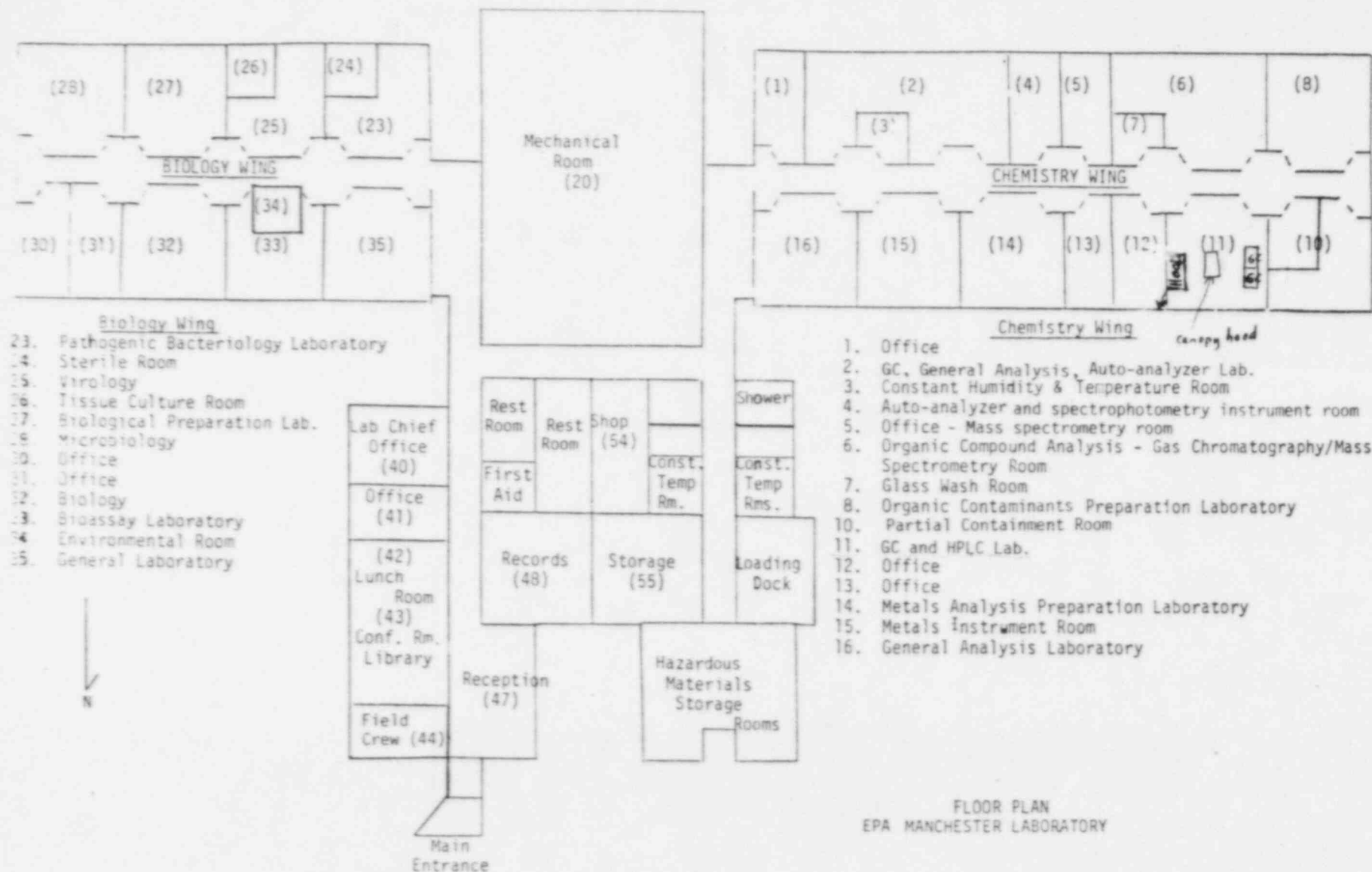
- ☒ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC.
☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC.
☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.
☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED
N/A

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.

If detector no longer used, it will be returned to manufacturer.



13. Facilities & Equipment
No laboratory air is recycled to the building.

15. RADIATION PROTECTION PROGRAM

Wipe tests are performed every 6 months for the nickel 63 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.

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

Bioassays of a urine specimen would be taken if anyone should be exposed to a concentration of tritium gas as a result of overheating of the detector.

All laboratory personnel are given an annual physical examination by EPA.

16. Formal Training in Radiation Safety

R.H. Rieck - None

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

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.

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)

Arnold R. Gahler

c. NAME (Type or print)

Arnold R. Gahler

d. TITLE

Laboratory Director

(1) LICENSE FEE CATEGORY:

e. DATE

5/10/83

(2) LICENSE FEE ENCLOSED: \$

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