

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 40-08821/85-01

Docket No. 040-08821

License No. SMB-1419

Priority III

Category E

Licensee: Resource Engineering, Incorporated

80 Bacon Street

Waltham, Massachusetts 02154

Facility Name: Resource Engineering, Incorporated

Inspection At: 80 Bacon Street, Waltham, Massachusetts 02154

Inspection Conducted: November 21, 1985

Inspectors:

John T. Jensen
John T. Jensen, Health Physicist

1/29/86
date

John J. Miller
John J. Miller, Health Physicist

1/29/86
date

Approved by:

John E. Glenn
John E. Glenn, Ph.D., Chief
Nuclear Materials Safety Section B

1/30/86
date

Inspection Summary: Inspection on November 21, 1985
(Report No. 40-08821/85-01).

Areas Inspected: A special, unannounced inspection to confirm the licensee's close-out survey allowing the release of the facility for unrestricted use. Specified areas of the facility were surveyed to identify fixed contamination or materials remaining.

Results: No residual removable contamination or remaining material was found. The licensee's survey enclosed with their letter dated September 24, 1985 accurately reflects the condition of the portions of the facility surveyed.

DETAILS

1. Persons Contacted

*John Pilling, Laboratory Manager

Jan Bielek, Chemist

*Norman Schapiro, Vice President

*Present at exit interview

2. Scope of Operations

Resource Engineering Incorporated is authorized by NRC License No. SMB-1419 to use up to 100 kilograms of depleted uranium in any form for research and analysis.

3. Instrumentation Used in Survey

Gamma radiation level measurements were made with a Ludlum Model 19 Micro R meter, NRC Tag No. 9498 calibrated on July 9, 1985. Gamma-beta radiation level measurements were made with an end window G-M survey meter, Ludlum Model 3, NRC Tag No. 7764, calibrated on September 10, 1985.

Wipes were counted on a Tennelec Model LB 5100 alpha-beta gas flow proportional counter calibrated daily with a thorium-230 calibration source and a technetium-99 source. The minimum detectable activity of the counter is 7.3×10^{-6} microcuries.

4. Use of Materials

The licensee had used depleted uranium in both solid and liquid forms. The materials were used in various areas of the chemistry laboratory (see enclosed diagram of wipe locations, Attachment 1).

5. Survey for Removable Contamination

Seventeen wipes were taken from equipment, work surfaces, floors and ductwork at the locations identified on Attachment 1. Analysis of these wipes (Attachment 2) showed no gross beta or gross alpha counts significantly greater than background.

6. Residual Materials

No residual radioactive materials were identified throughout the laboratory or building grounds.

7. Exit Interview

The results of the direct reading portion of the survey were discussed with licensee representatives identified in section 1.

EXTERIOR TO BUILDING

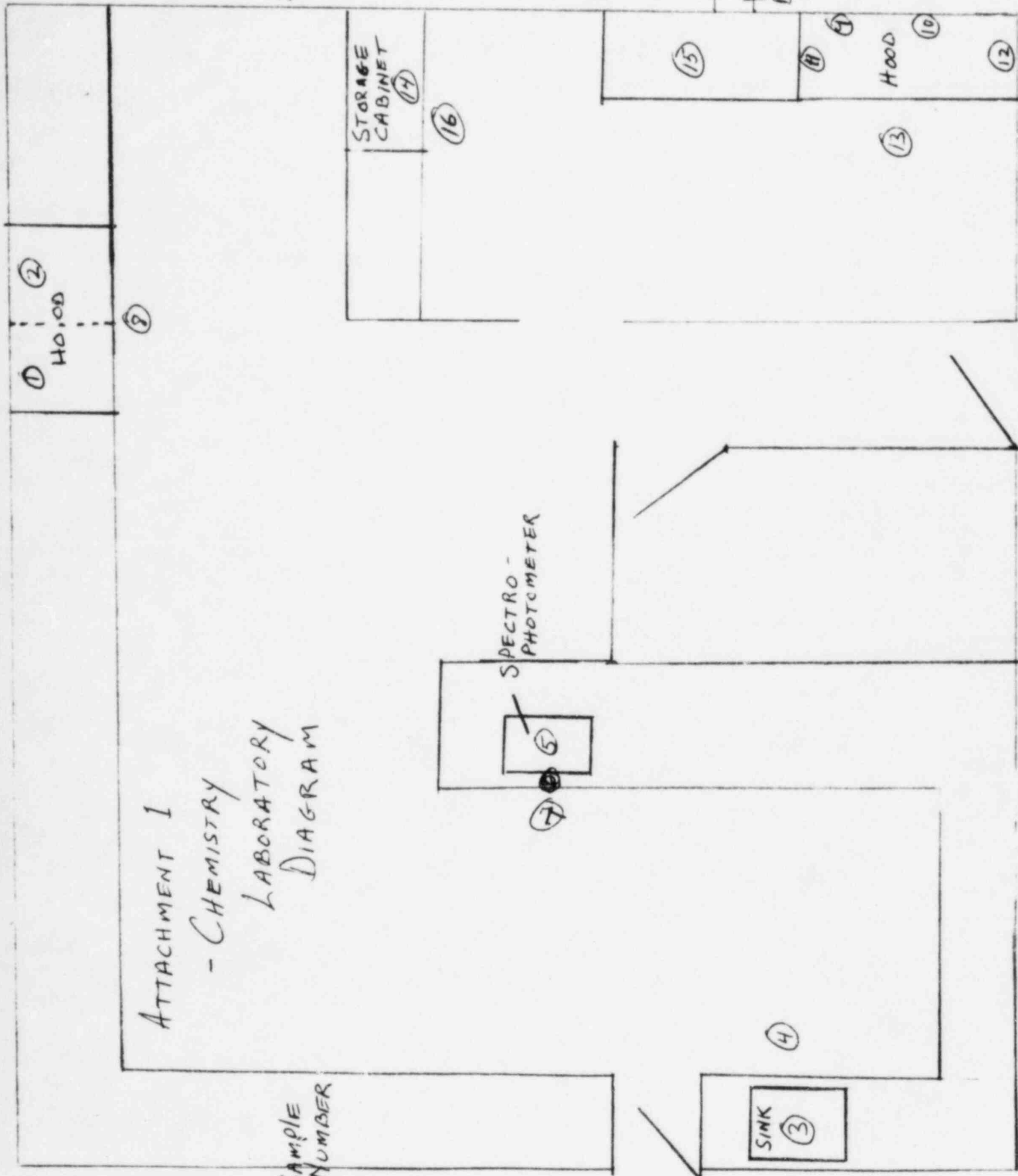
EXTERIOR
TO
BUILDING

ATTACHMENT I
- CHEMISTRY
LABORATORY
DIAGRAM

O = SAMPLE
NUMBER

OFFICE

OFFICE



Serial No. 301133

Samples Received: 11/26/85
 Analysis Completed: 12/9/85
 Notified: _____ Date: _____
 Analyzed By: MEK
 Approved By: *[Signature]*

Sample From: Resource Engineering
 Collected By: J. Turner Date Sent: 11/22/85
 Organization: NMS

Sample		Sample Description		Anal. for	Inst. used	Quant. used	Date cntd.	Count time	Gross count	Bkgd.	Net count	Eff.	Results $\pm 1\sigma$ dpm
1	11/26/85	Oven Hood A	2	gross	LB 5100	1 WAGE	12/7/85	2 min	1	2	-1	0.227	-2 ± 4
2		Oven Hood B	3						5		3		7 ± 6
3		Wash Sink	4						0		-2		-4 ± 3
4		Sink Floor	5						1		-1		-2 ± 4
5		Spectrophotometer	6						1		-1		-2 ± 4
6		1" Bench	7						0		-2		-4 ± 3
7		1" Floor	8						1		-1		-2 ± 4
8		Oven Hood Floor	9						0		-2		-4 ± 3
9		Hood Shelf left	10						2		0		0 ± 4
10		1" Right	11						2		0		0 ± 4
11		1" Left wall	12						2		0		0 ± 4
12		1" Right	13						0		-2		-4 ± 3
13		Floor - front of hood	14						1		-1		-2 ± 4
14		Storage Cabinet	15						0		-2		-4 ± 3
15		Counter top rear hood	16						1		-1		-2 ± 4
16		Storage area	17						1		-1		-2 ± 4

*Random uncertainties reported are 1 standard deviation, 10. small negative and other results $\leq 3\sigma$ are interpreted by NRC as including "zero" or as not detected. If appropriate, estimates of possible systematic errors are reported in parentheses.

