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May 19, 1981

Mr. Gregory G. Eadie  
Uranium Recovery Licensing Branch  
Division of Waste Management  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Eadie:

Enclosed is the letter report on "Edgemont Remedial Action Program Survey" (B-2217-0) for the month of March, 1981.

Very truly yours,

*P. O. Jackson*

P. O. Jackson  
Research Scientist  
Radiological & Inorganic  
Chemistry Section  
PHYSICAL SCIENCES DEPARTMENT

*R. W. Perkins*

R. W. Perkins  
Associate Department Manager

*N. A. Wogman*

N. A. Wogman  
Project Manager

POJ:mfm

Encl.

cc: E Redden, DOE Germantown (EV/SED)  
RA Scarano, NMSS  
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Not on Des.

MONTHLY REPORT  
EDGEMONT REMEDIAL ACTION PROGRAM

March, 1981

Project Manager: N. A. Wogman

Principal Investigator: P. O. Jackson

FIN No. B-2217-0

STUDY OBJECTIVES

The objectives of this program are to survey an area within the city limits of Edgemont, South Dakota, using radiological analysis equipment, providing necessary data for engineering assessments, and optionally provide data for cleanup remedial action programs.

ACCOMPLISHMENTS DURING REF. JRT PERIOD

Thirty-four 100-hour RPISU samples were collected in 34 homes during the month of March. Of these, all were original samples except for one, which was a second sample. Track Etch units were placed in 30 homes at the time that the RPISU samples were placed there. Two Track Etch samples were placed in each home.

Grab working level measurements were repeated in 17 residence units because samples had previously been collected with wind speeds greater than 8 mph. Of those measurements which were previously recorded to be less than 0.01 working levels, 4 remain less than 0.01 in the remeasurements, 4 fell in the class from 0.01 to 0.033 working levels, and 1 fell in the greater than 0.033 working level class. Of those measurements that previously were in the 0.01 to 0.033 WL class, none fell in the less than 0.01 class, 7 fell in the 0.01 to 0.033 class and 1 fell in the greater than 0.033 class. These changes will necessitate a modification of our summary table. However, the changes will not be reported in this month's report because a number of additional reruns are yet to be completed. It is expected that most will be completed during the April testing period, and a final revision of the totals, reflecting all reruns initiated at that time, will be prepared.

Two temporary staff members terminated at the end of February, and during March a third staff member terminated. Because of the small staff size, it was decided to concentrate on initiation of the RPISU program and to discontinue the grab working level measurements. Later in the month a new temporary staff scientist was hired to work at Edgemont, and the surveys were resumed.

HIGHLIGHT CONCLUSIONS

An intercomparison study of the Track Etch and RPISU sampling technique was initiated.

PROJECTED WORK NEXT MONTH

During April, the grab sampling measurements and the rerunning of grab samples taken during windy conditions will be continued. The RPISU and Track Etch comparison study will be continued in a total of at least 50 properties.

REPORTS ISSUED DURING THE MONTH

There were no reports.

FINANCIAL

Man Hours	341.5
Costs	\$35,159
Uncosted Obligations	\$14,224

Edgemont Cleanup Action Program

Monthly Report Summary for March, 1981

.. Structures surveyed by Grab Working Level Measurements

Total Number of Available Structures: 658

Number of Requests for Survey Received: 561

Summary Table of NRC/State Program<sup>2</sup>

	<u>Less Than 0.01 WL</u>	<u>0.01 to 0.033 WL</u>	<u>Greater Than<sup>3</sup> 0.033 WL</u>	<u>Number of<sup>4</sup> Retests</u>
Oct. 1, 1980	7 (2) <sup>5</sup>	20 (2)	0	8 RRWL, 4 RRTO
Nov. 1, 1980	33 (4)	56 (11)	1 (1)	19 RRWL, 31 RRTO
Dec. 1, 1980	21 (7)	40 (4)	24 (4)	9 RRWL, 19 RRTO
Jan. 1, 1981	8 (2)	21 (3)	3 (0)	6 RRWL, 4 RRTO
Feb. 1, 1981	4 (0)	15 (3)	6 (0)	1 RRWL, 3 RRTO
March 1, 1981	10 (2)	24 (3)	2 (0)	5 RRWL, 8 RRTO
April 1, 1981	<u>6 (2)</u>	<u>11 (0)</u>	<u>7 (1)</u>	<u>0 RRWL, 4 RRTO</u>
Totals:	<u>89 (19)</u>	<u>187 (26)</u>	<u>43 (6)</u>	<u>48 RRWL, 73 RRTO</u>

II. Vacant Land Gamma Radiation Surveys

Total Number of Available Lots: 388 Lots + 66 Vacant City Blocks<sup>1</sup>

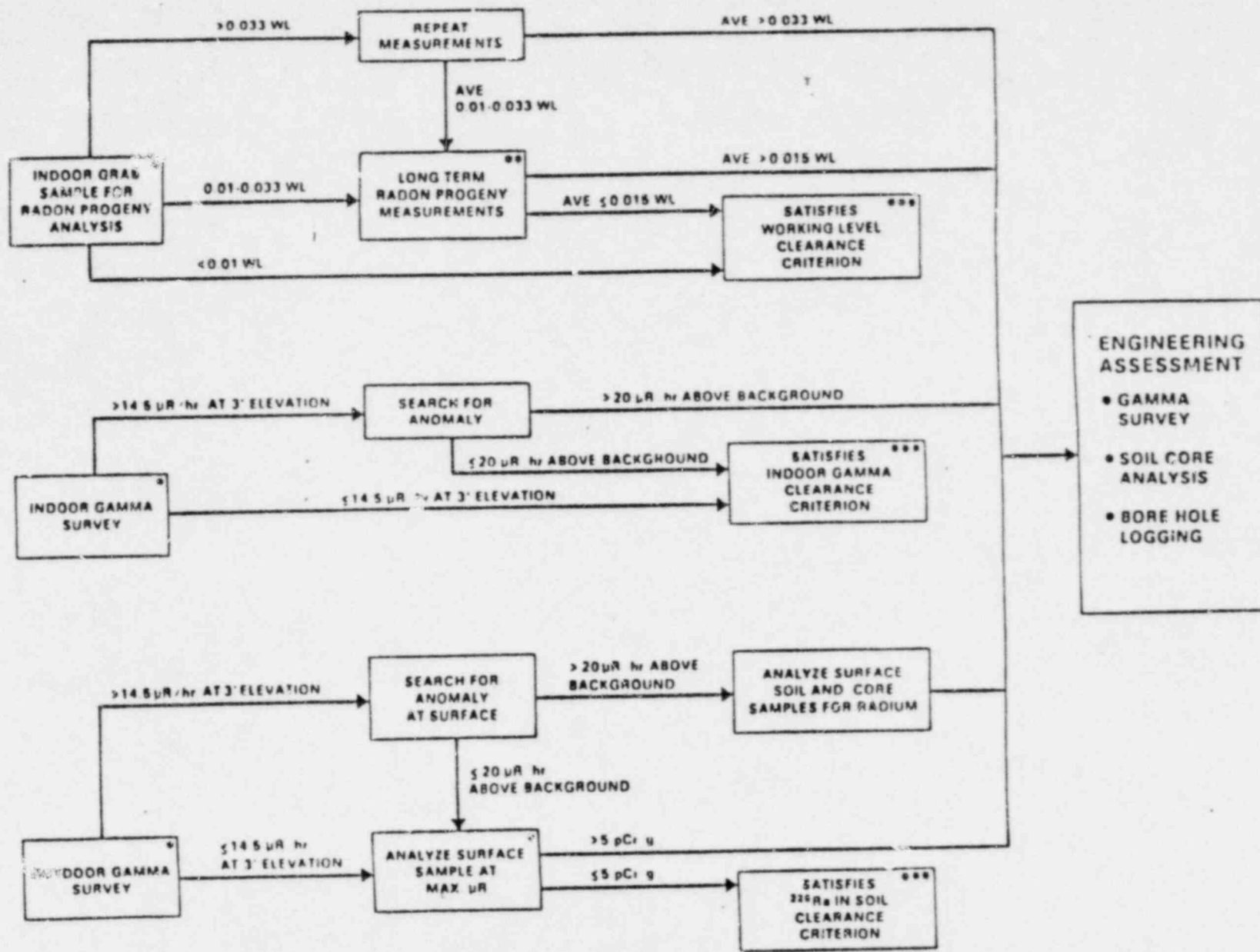
Number of Requests for Lot Survey Received: 320 Lots + 51 Blocks

Summary Table of NRC/State Program<sup>6</sup>

<u>Date</u>	<u>Less Than 14.5 <math>\mu</math>R/hr Average</u>	<u>Greater Than 14.5 <math>\mu</math>R/hr Average</u>
October 1, 1980		
November 1, 1980	19	2
December 1, 1980	8	4
January 1, 1981	0	0
February 1, 1981	18	0
March 1, 1981	6	0
April 1, 1981	<u>0</u>	<u>0</u>
	<u>51</u>	<u>6</u>

- <sup>1</sup> One City block contains approximately 16 lots.
- <sup>2</sup> HUD criterion is that the grab Working Level (WL) times the factor 0.6 equals the Weighted Working Level (WWL) which must be less than 0.02 WWL ( $0.033 \text{ WL} \times 0.6 = 0.02 \text{ WWL}$ ). See the attached flow diagram for the significance of these screening levels. When the verified grab working level measurement is greater than 0.033 WL, the property receives a detailed, engineering assessment to define what remedial action must be taken; otherwise a long-term monitoring program may be conducted to determine if remedial action is required.
- <sup>3</sup> These are based on the average of two measurements.
- <sup>4</sup> RRWL means a single measurement  $>0.033 \text{ WL}$  which must be verified. RRTO means turnover time was too short ( $<32$  minutes) which must be retested at least once. These are the numbers of pending reruns generated each period.
- <sup>5</sup> Numbers in parentheses indicate the number of measurements included in the number without parentheses which are slated for engineering assessment due to failure of one or more of the other criteria (i.e.  $^{226}\text{Ra}$  in soil  $>5 \text{ pCi/g}$ , gamma dose rate  $>20 \text{ } \mu\text{R/hr}$  above background).
- <sup>6</sup> HUD criterion for Vacant Land is that the average gamma radiation dose rate level must be less than  $14.5 \text{ } \mu\text{R/hr}$ .

FIGURE 1: FLOW DIAGRAM OF PROCEDURES FOR DETERMINATION OF PROPERTIES REQUIRING REMEDIAL ACTION



(\*) PERFORMED AT EACH PROPERTY SURVEYED  
 (\*\*) NOT PERFORMED UNLESS ALL OTHER CLEARANCES CRITERIA ARE SATISFIED  
 (\*\*\*) ENGINEERING ASSESSMENT IS PERFORMED UNLESS ALL THREE CLEARANCE CRITERIA ARE SATISFIED