

TX. 9

April 23, 1951

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A. B. Babcock, Jr.

AIR TABELING TESTS AT SUTTON, STEELE & STEELE, INC., DALLAS, TEXAS,  
APRIL 9 - 11, 1951

Box 20 - MED HISTORY - NYDO  
FURNACE OPERATING PROC.

SYMBOL: AB3mb

I. Attendance

Sutton, Steele & Steele, Inc.

Kollax

AEC-NYDO

Catalytic

S. E. Wood

W. H. Peterson

A. B. Babcock, Jr.

C. Pfeiffer

L. Fulton, Jr.

O. L. Olson

II. Purpose

C-Liner and C-Special were air tabled to determine the feasibility of separating unreacted fused dolomite from the magnesium fluoride slag and uranium portions of liner wastes. If an efficient separation were possible, the dolomite portions could probably be reused as bomb liner after refusing the recycle material. Furthermore, the separation would reduce the scrap recovery costs by reducing the quantities of acid-consuming materials handled in the scrap circuit.

This memorandum presents the qualitative results of the tests and some general conclusions. No samples have been analyzed yet so that no quantitative results are available now. A supplemental memorandum will be written when these results are available.

III. Qualitative Results

Five table runs were made. The first run was on C-Liner as received to determine how the materials would handle. The remaining runs were made on -28 mesh C-Liner in which the table middlings were combined, on a 60/40 mixture of C-Liner and C-Special (simulating plant product) using a -65 mesh screen fraction, on the -100 mesh screen fraction of the mixture, and on the -100/200 mesh screen fraction. Products from the last four runs will be sent to MCR for evaluation as a bomb-liner material as outlined in a previous memorandum.

The table tailings were somewhat grayish indicating that some fluoride was present. Dust collector samples were whiter than table products indicating a more pure dolomitic material is possible in the finer particle sizes. This was also shown by the color of the surplus of liner (as received)

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which were classified by laboratory screens. It appeared that screening could accomplish approximately the same degree of dolomitic purification as tabling.

According to material balance data, about 137 pounds of material were lost as dust (part of this was probably recovered in sweepings) through the dust collector vent and screen ventilating system. A count on some typical dust samples, however, showed that the dust was relatively low in uranium, as would be expected. A strong wind was blowing during all tests so that the dust lost outdoors was rapidly diluted. Dust masks were worn by people working in the test areas.

All equipment and floors, except dust collection and ventilating equipment, were vacuum cleaned after the tests to about twice background or less, or to about 0.05 mr/hr or less. Isolated areas under pieces of equipment were about 0.07 mr/hr. A beta detector was used throughout the survey. This residual activity is generally considered to be a safe level. None of the food products tested by Sutton are used for food after testing, so that no danger would result from ingestion of any residual uranium.

IV. Conclusions

From qualitative results only, it is concluded that:

- A. Air tabling, as a means of recycling used, fused dolomite, does not appear promising.
- B. No health hazard remains at Sutton, Steele & Steele, Inc. from contaminated tables, screens, or floor areas.

V. Detailed Results

A. Accountability:

	<u>Received</u>		<u>Used</u>		<u>Unused</u>	
	Net Lb.	Est. Lb. U	Net Lb.	Est. Lb. U	Net Lb.	Est. Lb. U
C-Liner	2073	18.1	1045	9.1	1028	9.0
C-Special	<u>2400</u>	<u>28.3</u>	<u>480</u>	<u>5.7</u>	<u>1920</u>	<u>22.6</u>
Total	4473	46.4	1525	14.8	2948	31.6

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B. Shipments:

1. To MCW -

	Net. Lb.	Est. Lb. U
Run No. 2 (Products 3 and 4)	123.0	0.7
Run No. 3 (Products 3, 4, 5, 6)	67.5	0.4
Run No. 4 (Products 2, 3, 4, 5, 6)	134.5	0.7
Run No. 5 (Products 3, 4, 5, 6, and -200 m fraction)	128.0	0.7
Total	453.0 lb.	2.5 lb.
	(2 drums)	

2. To Vitro -

Screening Rejects, C-Special & C-Liner	730.0	9.7
Runs 1 through 5, table products	172.0	2.0
Total	902.0 lb.	11.7 lb.
	(2 drums)	
Floor Sweepings (not included in net)	(115.8 lb.)	0.1 lb.

3. Samples, all runs:

Est. 17.2 lb. 0.2 lb.

4. Losses unaccounted for (dust, etc.)

136.5 lb. 0.2 lb.

Total Accounted for - 1508.7 lb. 14.7 lb.  
 Total Unaccounted for - 16.3 lb. 0.1 lb.

C. Counter Readings:

A Model 2610 survey meter was used for all readings with the shield open. Samples were placed in 1/4" d. by 3" celluloid sample vials and held at the probe surface. These readings should only be considered as a rough indication of uranium content.

Background	0.025 - 0.05 mr/hr
Run No. 3: Feed	1.0 - 1.25
Concentrate	3.0 - 4.0
Tailings	1.0 - 1.25
Dust Collector	1.0 - 1.25
Run No. 4: Feed	0.5 - 0.75
Concentrate	0.6 - 0.7
Tailings	0.6 - 0.7
Dust Collector	0.4 - 0.5
Run No. 5: Feed	0.7 - 0.8
Concentrate	1.1 - 1.2
Tailings	0.6 - 0.7
Dust Collector	0.6 - 0.7

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Screen Fractions: (Runs 4 & 5) -200 mesh	0.5 - 0.6
Misc: Dust collected near screens	0.1 - 0.2
Dust collected from screen	less than 0.1
Dust collected near blower	less than 0.1
Dust collected from top of Collector	0.3 - 0.4
All equipment after cleaning	0.05 or less
Floors after cleaning	0.05 or less (isolated spots - 0.07)

cc: F. M. Balmore, NYCO  
St. Louis Area  
Vitro Manufacturing Company  
Kellax Corporation  
Catalytic Construction Company (Mr. Weirich)  
Engineering Division, NYCO (Mr. Moore) ✓  
Process Development Branch, NYCO

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