

EXPLANATION

MINING GEOLOGY

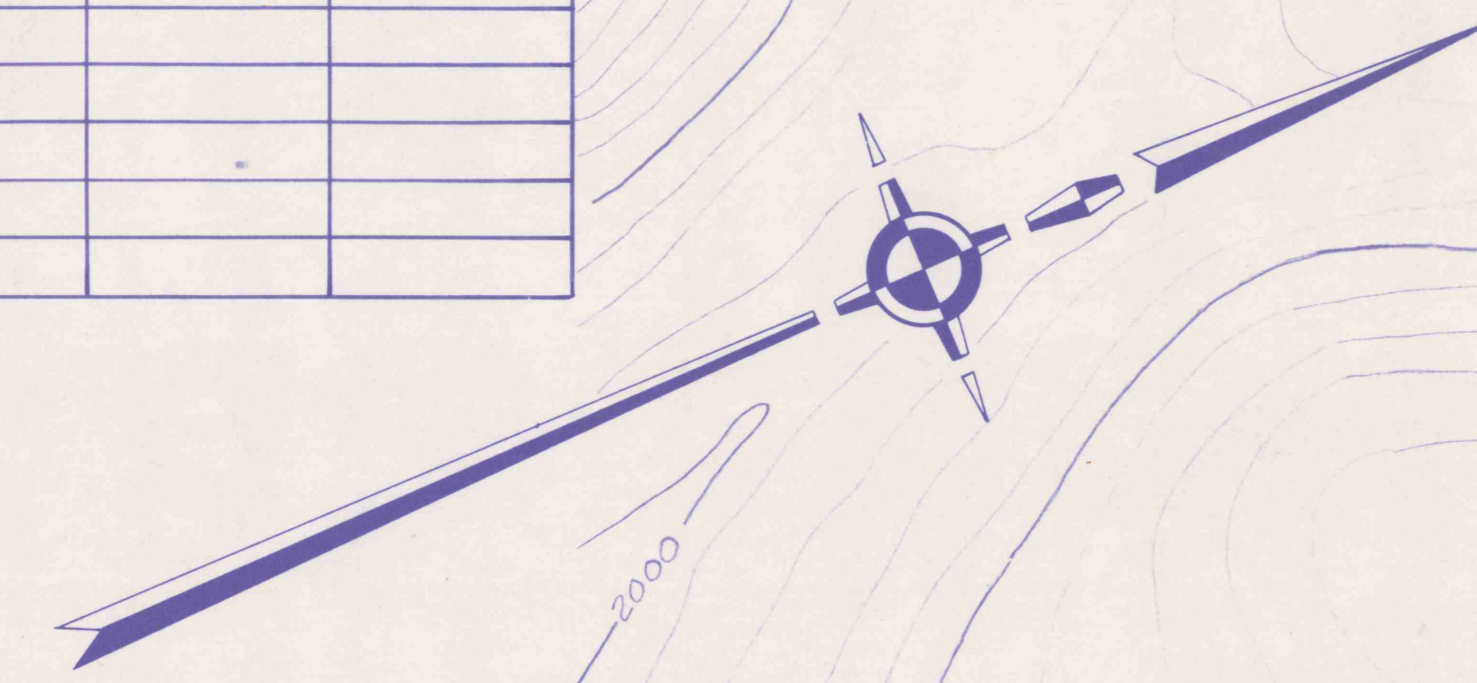
- UPPER FREEPORT OR E SEAM
- LOWER FREEPORT OR D SEAM
- UPPER KITTANNING OR C' SEAM
- MIDDLE KITTANNING OR C SEAM
- LOWER KITTANNING OR B SEAM
- SCRUBGRASS SEAM
- CLARION OR A' SEAM
- BROOKVILLE OR A SEAM

AFFECTED BY OTHER COMPANIES AND FIRE CLAY MINING AREAS

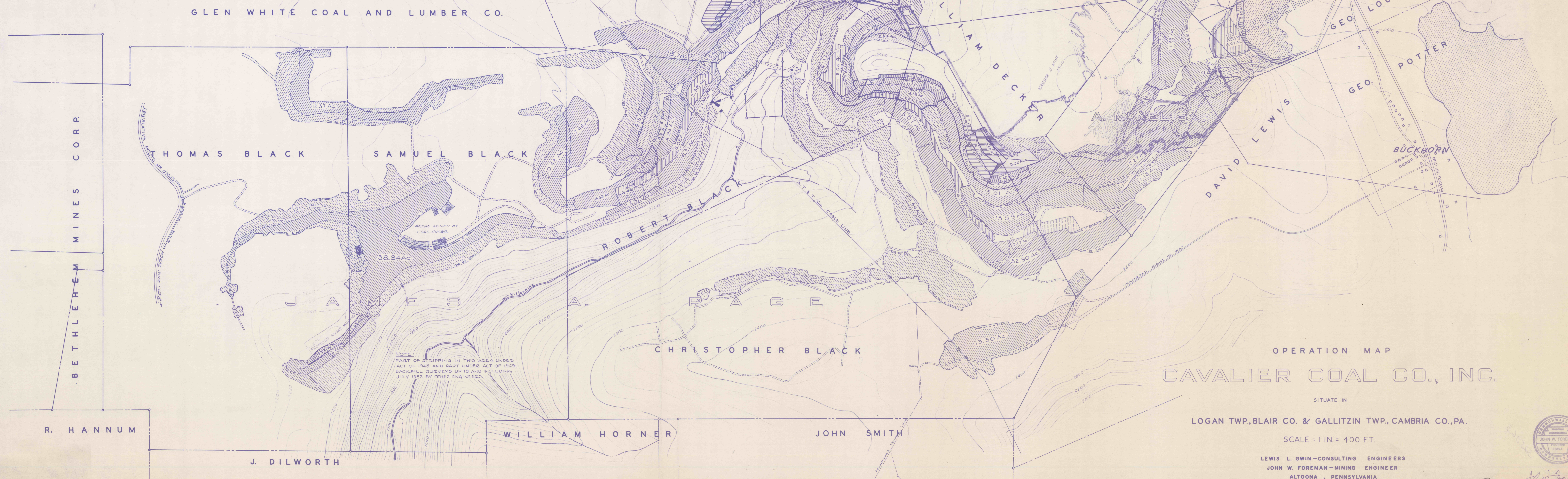
- AFFECTED BY OTHER COMPANIES AND FIRE CLAY MINING AREAS

DATE	AFFECTED AREA INCREMENT	BACKFILL AREA CUMULATIVE	RESIDUAL AREA
JULY 1952	267.78	267.78	161.59
JAN. 15, 1955	—	227.78	150.44
MAY 16, 1956	29.03	316.61	179.47
JUNE 25, 1957	5.29	322.10	165.00
SEPT. 11, 1957	—	322.10	134.02
FEB. 4, 1958	—	322.10	46.80
JUNE 16, 1958	6.96	331.08	49.28
MAY 27, 1959	7.01	338.09	36.29
MAY 28, 1960	15.69	353.78	36.94
MAY 27, 1961	11.93	365.71	23.69
MAY 27, 1962	3.86	375.57	39.55
MAY 21, 1963	23.93	399.50	27.31
OCT. 5, 1963	—	399.50	21.39
JAN. 23, 1964	8.63	408.13	30.02
AUG. 10, 1964	9.03	417.16	21.39
JAN. 4, 1965	5.33	422.49	5.33
JULY 6, 1965	5.19	425.68	7.05
SEPT. 16, 1965	—	425.68	3.13
JAN. 6, 1966	6.45	432.13	9.61
JULY 12, 1966	4.20	436.33	5.17
DEC. 28, 1966	12.23	448.56	17.40
APR. 5, 1967	—	448.56	0.00

© INCLUDES 4.15 ACRES BACKFILLED BY PA. DEPT. OF MINES



17.40 ACRES BACKFILLED FOR APPROVAL



OPERATION MAP
CAVALIER COAL CO., INC.

SITUATE IN
LOGAN TWP., BLAIR CO. & GALLITZIN TWP., CAMBRIA CO., PA.

SCALE: 1 IN. = 400 FT.

LEWIS L. GWIN—CONSULTING ENGINEERS
JOHN W. FOREMAN—MINING ENGINEER
ALTOONA, PENNSYLVANIA
JOB NO. 64-1-1

