K- SPARWOOD RIDGE 69(6)A

RESOURCE ESTIMATE CHARTS

Kaiser Resources Ltd.

CONFIDENTIAL

GEOLOGICAL BRANCH
ASSESSMENT REPORT

00 440

AREA: SPARWOOD RIDGE
TABLE Nº: 31

RESERVE ESTIMATE — (0-1500' COVER)

SEAM NAME	AVG. THICK.	PITCH 0–15° TONS IN PLACE (000's)	RESERVE CLASS.	MINING METHOD	TONS RECOVERED (000's)	CALC. YIELD	AT SP. GR.	TONS WASHED (000's)	PITCH 15°–30° TONS IN PLACE (000's)	RESERVE CLASS.	MINING METHOD	TONS RECOVERED (000's)	CALC. YIELD	AT SP. GR.	TONS WASHED (000's)	PITCH 30°–90° TONS IN PLACE (000's)	RESERVE CLASS.	MINING METHOD	TONS RECOVERED (000's)	CALC. YIELD	AT SP. GR.	TONS WASHED (000's)
D	5.0	7,241	B	C	1,086	80.2	1.50	871	6,546	B	C	982	80.2	1.50	788							
C	*17.0	25,497	B	C	2,250	86.9	1.50	1,955	20,846	B	C	1,839	86.9	1.50	1,598							
B	6.0	8,092	B	C	1,214	90.0	1.50	1,092	3,375	B	C	506	90.0	1.50	456							
A	15.0	18,632	B	C	2,795	92.5	1.50	2,585	11,092	B	C	1,664	92.5	1.50	1,539							
1	10.0	20,960	B	C	3,144	88.1	1.50	2,770	17,426	B	C	2,614	88.1	1.50	2,303							
2	7.0	14,672	B	C	TOO CLOSE	TO 1	SEAM	FOR RECOV.	12,198	B	C											
5	*24.0	33,604	B	C	1,680	88.3	1.50	1,484	34,210	B	C	1,710	88.3	1.50	1,510							
6	6.0	9,061	B	C	1,359	77.6	1.50	1,055	10,168	B	C	1,525	77.6	1.50	1,184							
7	*21.0	42,752	B	C	2,138	79.0	1.50	1,689	38,453	B	C	1,923	79.0	1.50	1,519							
8	*6.0	25,595	B	C	1,181	59.7	1.50	705	10,832	B	C	1,625	59.7	1.50	970							
9	6.0	4979	B	C	747	79.0	1.50	590	10,975	B	C	1,646	79.0	1.50	1,301							
10	50.0	20,874	B	H	10,437	83.3	1.50	8,694	49,226	A	H	24,613	83.3	1.50	20,502							
10									40,484	B	H	20,242	83.3	1.50	16,861							
PROVEN									49,226			24,613			20,502							
PART. EXPL'D		231,959			28,031			23,490	216,605			36,276			30,029							
PROJECTED																						
TOTALS		231,959			28,031			23,490	265,831			60,889			50,531							

SEAM NAME	CUMULATIVE TOTALS — RECOVERABLE RESERVES: OPEN PIT MINING PROVEN	OPEN PIT MINING PARTIALLY EXPLORED	OPEN PIT MINING PROJECTED	UNDERGROUND CONVENTIONAL PROVEN	UNDERGROUND CONVENTIONAL PARTIALLY EXPLORED	UNDERGROUND CONVENTIONAL PROJECTED	UNDERGROUND HYDRAULIC PROVEN	UNDERGROUND HYDRAULIC PARTIALLY EXPLORED	UNDERGROUND HYDRAULIC PROJECTED	TOTALS (000's TONS CLEAN)	SEAM NAME
D					1,659					1,659	D
C					3,553					3,553	C
B					1,548					1,548	B
A					4,124					4,124	A
1					5,073					5,073	1
2											2
5					2,994					2,994	5
6					2,239					2,239	6
7					3,208					3,208	7
8					1,675					1,675	8
9					1,891					1,891	9
10							20,502	8,694		29,196	10
10								16,861		16,861	10
PROVEN							20,502			20,502	
PART. EXPL'D					27,964			25,555		53,519	
PROJECTED											
TOTALS										74,021	

NOTE: (1) Average thickness computed from observations. (ie. drill holes, adit and outcrop measurements.)
(2)(i) Tons in place (cu. yds.) determined from: (a) Area of unmined coal.
(b) Average thickness as determined from (1)
(ii) 1 cu. yd. of coal in place = 1·15 net tons raw.
(iii) Slope correction applied to (2)(i)(a). (Area of unmined coal.) as follows:
(a) For 0°–15° pitch correction of 7½° applied to area.
(b) For 15°–30° pitch – correction of 22½° applied to area.
(c) For 30°–90° pitch - correction of 45° applied to area.

(3) Reserve Classification – Definitions for KRL property.
A – Proven Reserves – (In Place) –
Tons of coal (1·15 nt/cu.yd.) in the ground computed from observations (ie. drill holes, adits, outcrops, mine workings) spaced at intervals of 0·5 miles or less in areas of good geological continuity, with seam thickness greater than 5 feet and under less than 2500 feet of overburden.
B – Partially Explored Reserves – (In Place) –
Tons of coal (1·15 nt/cu.yd.) in the ground computed partially from observations generally spaced at intervals from 0·5 to 1·5 miles apart and partially from reasonable geological projections. Minimum seam thickness is 5 feet, and maximum overburden 2500 feet. Generally equivalent to "Probable" or "Indicated" in other systems of nomenclature.
C – Projected Reserves – (In Place) –
Tons of coal (1·15 nt/cu.yd.) in the ground where litte direct evidence is available but where geological studies have indicated the continuity of the coal bearing measures. Coal seam thickness projected from adjacent areas.

(4) Mining Method –
H – Probably better suited to hydraulic mining method. Used 50% recovery.
C – Probably suited to conventional room and pillar method. Used 15% recovery.
R – Probably suited to selective mining because of splits or proximity to other seams. Used 15% recovery.
O – Open Pit reserve. Assumed 85% recovery.

(5) Reserves Recoverable –
Proven Reserves (Recoverable) –
Proven Reserves (In Place) adjusted by well substantiated factors for mining and washing recovery.
Partially Explored Reserves (Recoverable) –
Partially Explored Reserves (In Place) adjusted by generalized factors for mining and washing recovery.

(6) Calculated yield (laboratory) at defined specific gravity arrived at by (a) bulk sample wash tests from adits and/or test pits, or (b) micro sample wash tests from adits and/or test pits.

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AREA:
TABLE Nº:

AREA: SPARWOOD RIDGE
TABLE Nº: 32

RESERVE ESTIMATE — (1500'-2500' COVER)

SEAM NAME	AVG. THICK.	PITCH 0–15° TONS IN PLACE (000's)	RESERVE CLASS.	MINING METHOD	TONS RECOVERED (000's)	CALC. YIELD	AT SP. GR.	TONS WASHED (000's)	PITCH 15°–30° TONS IN PLACE (000's)	RESERVE CLASS.	MINING METHOD	TONS RECOVERED (000's)	CALC. YIELD	AT SP. GR.	TONS WASHED (000's)
D	5.0					80.2	1.50		1,401	B	C	210	80.2	1.50	169
C	*17.0	88	B	C	8	86.9	1.50	7	9,624	B	C	849	86.9	1.50	738
B	6.0	2,340	B	C	351	90.0	1.50	316	5,532	B	C	830	90.0	1.50	747
A	15.0	7,937	B	C	1,191	92.5	1.50	1,101	13,387	B	C	2,008	92.5	1.50	1,858
1	10.0	5,618	B	C	843	88.1	1.50	742	6,675	B	C	1,001	88.1	1.50	882
2	7.0	3,933	B	C					4,673						
5	*24.0	24,203	B	C	1,210	88.3	1.50	1,069	16,330	B	C	817	88.3	1.50	721
6	6.0	7,051	B	C	1,058	77.6	1.50	821	4,149	B	C	622	77.6	1.50	483
7	*21.0	14,070	B	C	704	79.0	1.50	556	21,647	B	C	1,082	79.0	1.50	855
8	*6.0	22,111	B	C	1,020	59.7	1.50	609	5,178	B	C	777	59.7	1.50	464
9	6.0	11,390	B	C	1,709	79.0	1.50	1,350	6,141	B	C	921	79.0	1.50	728
10	50.0	104,368	B	H	52,184	83.3	1.50	43,469	61,221	B	H	30,610	83.3	1.50	25,498
PROVEN															
PART. EXPL'D		203,109			60,278			50,040	155,958			39,727			33,143
PROJECTED															
TOTALS		203,109			60,278			50,040	155,958			39,727			33,143

SEAM NAME	PITCH 30°–90° TONS IN PLACE (000's)	RESERVE CLASS.	MINING METHOD	TONS RECOVERED (000's)	CALC. YIELD	AT SP. GR.	TONS WASHED (000's)
D							
C							
B							
A							
1							
2							
5							
6							
7							
8							
9							
10							
PROVEN							
PART. EXPL'D							
PROJECTED							
TOTALS							

CUMULATIVE TOTALS — RECOVERABLE RESERVES										
OPEN PIT MINING			UNDERGROUND CONVENTIONAL			UNDERGROUND HYDRAULIC			TOTALS (000's TONS CLEAN)	SEAM NAME
PROVEN	PARTIALLY EXPLORED	PROJECTED	PROVEN	PARTIALLY EXPLORED	PROJECTED	PROVEN	PARTIALLY EXPLORED	PROJECTED		
				169					169	D
				745					745	C
				1,063					1,063	B
				2,959					2,959	A
				1,624					1,624	1
										2
				1,790					1,790	5
				1,304					1,304	6
				1,411					1,411	7
				1,073					1,073	8
				2,078					2,078	9
							68,967		68,967	10
				14,216			68,967		83,183	
									83,183	

NOTE: (1) Average thickness computed from observations. (ie. drill holes, adit and outcrop measurements.)
(2)(i) Tons in place (cu. yds.) determined from: (a) Area of unmined coal.
(b) Average thickness as determined from (1)
(ii) 1 cu.yd. of coal in place = 1·15 net tons raw.
(iii) Slope correction applied to (2)(i)(a). (Area of unmined coal.) as follows:
(a) For 0°– 15° pitch – correction of 7½° applied to area.
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B – Partially Explored Reserves – (In Place) –
Tons of coal (1·15 nt/cu.yd.) in the ground computed partially from observations generally spaced at intervals from 0·5 to 1·5 miles apart and partially from reasonable geological projections. Minimum seam thickness is 5 feet, and maximum overburden 2500 feet. Generally equivalent to "Probable" or "Indicated" in other systems of nomenclature.
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Tons of coal (1·15 nt/cu.yd.) in the ground where litte direct evidence is available but where geological studies have indicated the continuity of the coal bearing measures. Coal seam thickness projected from adjacent areas.

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(6) Calculated yield (laboratory) at defined specific gravity arrived at by (a) bulk sample wash tests from adits and/or test pits, or (b) micro sample wash tests from adits and/or test pits.

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AREA:
TABLE Nº:

AREA: SPARWOOD RIDGE
TABLE Nº: 33

RESERVE ESTIMATE — (+2500' COVER)

SEAM NAME	AVG. THICK.	PITCH 0–15° TONS IN PLACE (000's)	RESERVE CLASS.	MINING METHOD	TONS RECOVERED (000's)	CALC. YIELD	AT SP. GR.	TONS WASHED (000's)	PITCH 15°–30° TONS IN PLACE (000's)	RESERVE CLASS.	MINING METHOD	TONS RECOVERED (000's)	CALC. YIELD	AT SP. GR.	TONS WASHED (000's)	PITCH 30°–90° TONS IN PLACE (000's)	RESERVE CLASS.	MINING METHOD	TONS RECOVERED (000's)	CALC. YIELD	AT SP. GR.	TONS WASHED (000's)
D	5.0																					
C	*17.0																					
B	6.0																					
A	15.0																					
1	10.0	704	C	C					2,379	C	C											
2	7.0	493	C	C					1,665	C	C											
5	*24.0								2,051	C	C											
6	6.0	1,691	C	C					3,220	C	C											
7	*21.0	4,365	C	C					11,230	C	C											
8	*6.0	9,514	C	C					5,233	C	C											
9	6.0	4,721	C	C					5,842	C	C											
10	50.0	36,765	C	H					71,455	C	H											
PROVEN																						
PART. EXPL'D																						
PROJECTED		58,253							103,075													
TOTALS		58,253							103,075													

CUMULATIVE TOTALS — RECOVERABLE RESERVES										
OPEN PIT MINING			UNDERGROUND CONVENTIONAL			UNDERGROUND HYDRAULIC			TOTALS (000's TONS CLEAN)	SEAM NAME
PROVEN	PARTIALLY EXPLORED	PROJECTED	PROVEN	PARTIALLY EXPLORED	PROJECTED	PROVEN	PARTIALLY EXPLORED	PROJECTED		

NOTE: (1) Average thickness computed from observations. (ie. drill holes, adit and outcrop measurements.)
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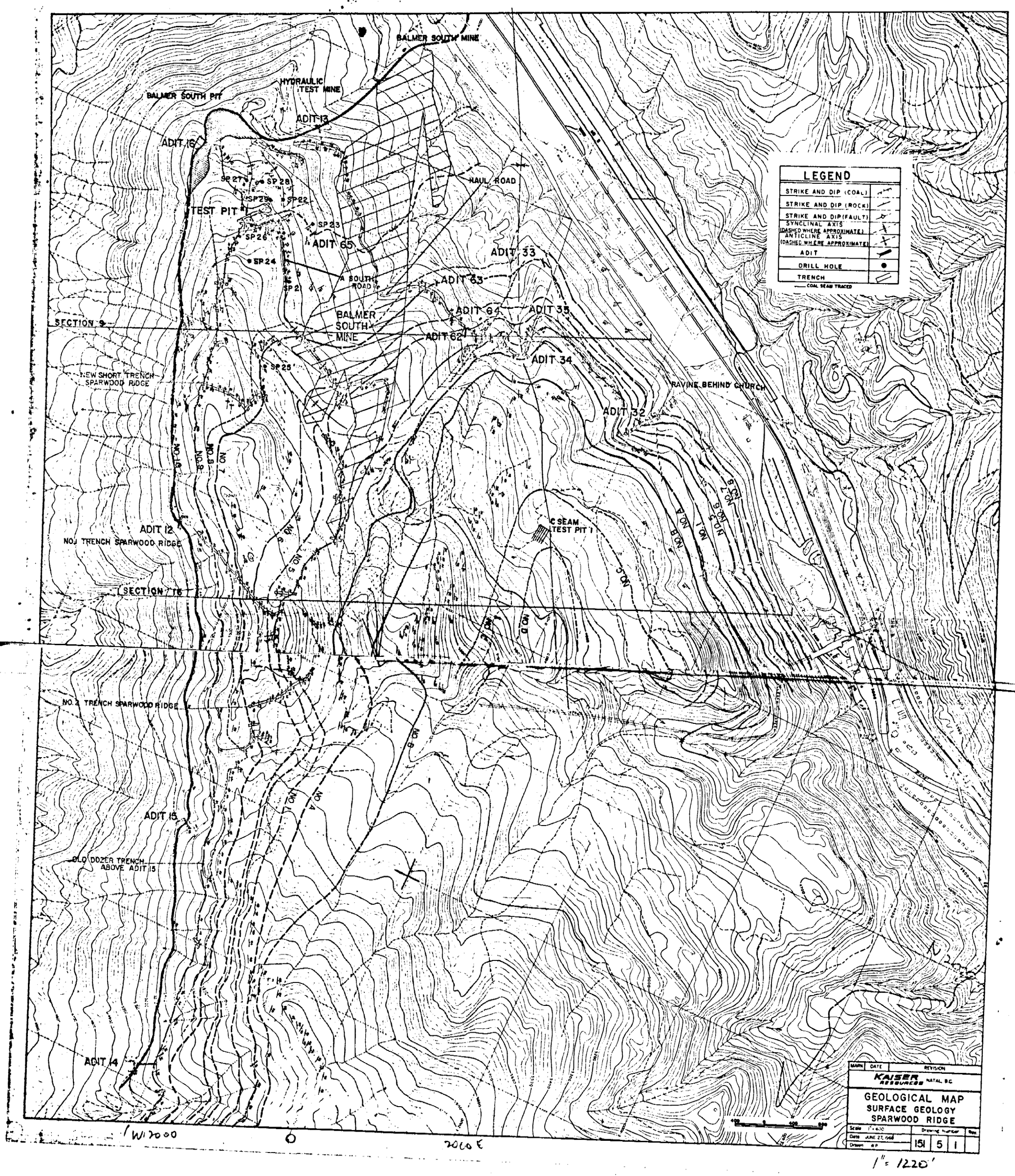
(6) Calculated yield (laboratory) at defined specific gravity arrived at by (a) bulk sample wash tests from adits and/or test pits, or (b) micro sample wash tests from adits and/or test pits.

00440

AREA:
TABLE Nº:


BALMER SOUTH MINE
HYDRAULIC TEST MINE
BALMER SOUTH PIT
ADIT 13
ADIT 16
SP 27
SP 28
SP 29
SP 22
TEST PIT 1
SP 23
SP 26
ADIT 65
SP 24
SP 21
SOUTH ROAD
HAUL ROAD
ADIT 33
ADIT 63
ADIT 64
ADIT 35
BALMER SOUTH MINE
ADIT 62
ADIT 34
SECTION 9
SP 25
NEW SHORT TRENCH SPARWOOD RIDGE
RAVINE BEHIND CHURCH
ADIT 32
NO 10
NO 9
NO 8
NO 7
NO 6
NO 5
NO 4
NO 3
NO 2
NO 1
NO A
NO B
NO C
NO D
C SEAM TEST PIT 1
ADIT 12
NO 1 TRENCH SPARWOOD RIDGE
SECTION 15
NO 2 TRENCH SPARWOOD RIDGE
ADIT 15
OLD DOZER TRENCH ABOVE ADIT 15
ADIT 14
LEGEND
STRIKE AND DIP (COAL)
STRIKE AND DIP (ROCK)
STRIKE AND DIP (FAULT)
SYNCLINAL AXIS (DASHED WHERE APPROXIMATE)
ANTICLINE AXIS (DASHED WHERE APPROXIMATE)
ADIT
DRILL HOLE
TRENCH
COAL SEAM TRACED
MARK
DATE
REVISION
KAISER RESOURCES
NATAL B.C.
GEOLOGICAL MAP
SURFACE GEOLOGY
SPARWOOD RIDGE
Scale 1" = 400'
Date JUNE 27, 1968
Drawn W.P.
Drawing Number
151
5
1
Rev.
1" = 1220'

SR-69(2)A

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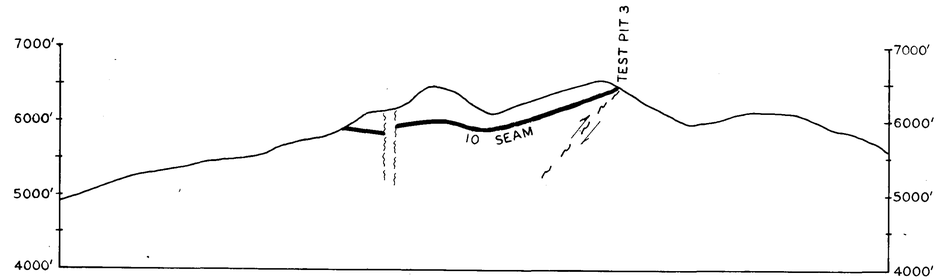
GEOLOGICAL MAP 69-1
TOMBAUL GEOLOGY
SHAMWOOD RIDGE
SCALE 1:4800

SECTIONS TO ACCOMPANY

EXPLORATION 10 SEAM & 7 SEAM

1000' 0 1000' 2000'

440



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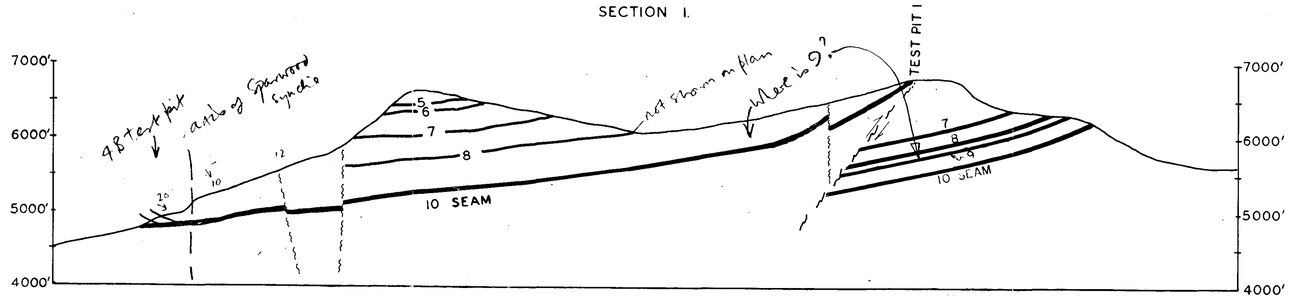

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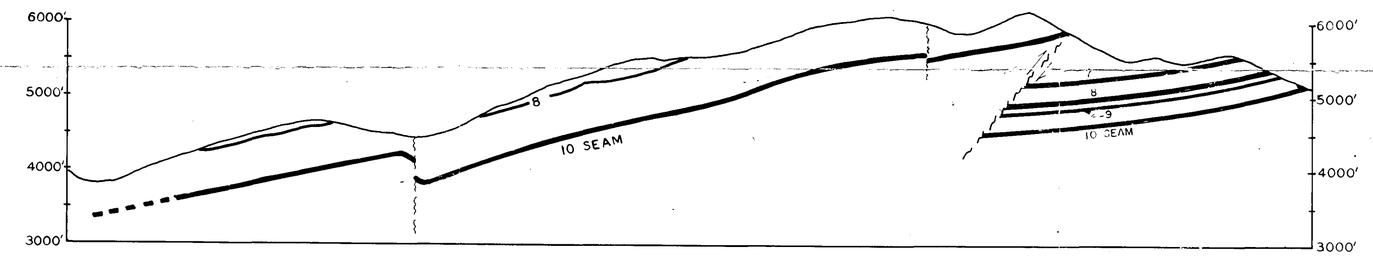

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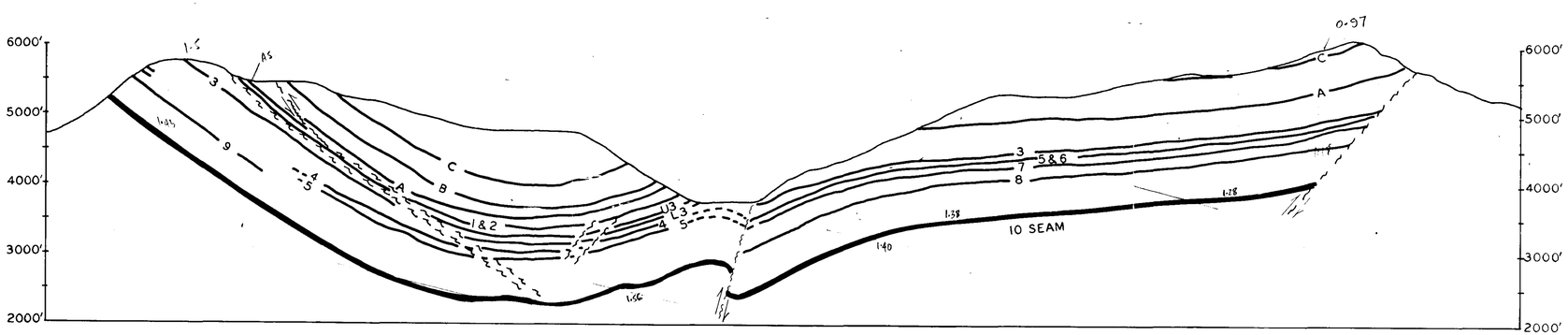

SECTION 4.

Spearwood Oil Co. 1972?

CROSS SECTION ALONG "A-I" LINE

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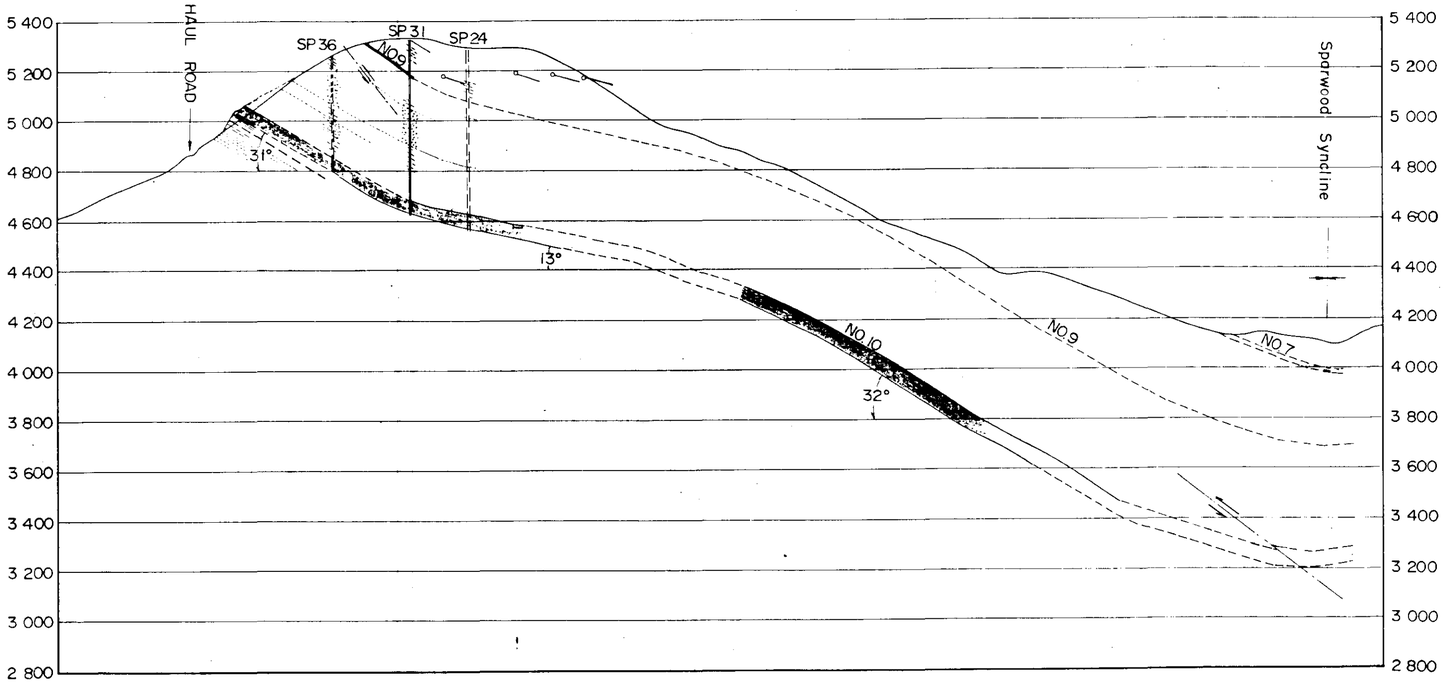

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SR 69(2)A

(4)

MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE GEOLOGICAL INVESTIGATION	NUMBER OF MAP	SR-03-02

CROSS SECTION ALONG "A-2" LINE

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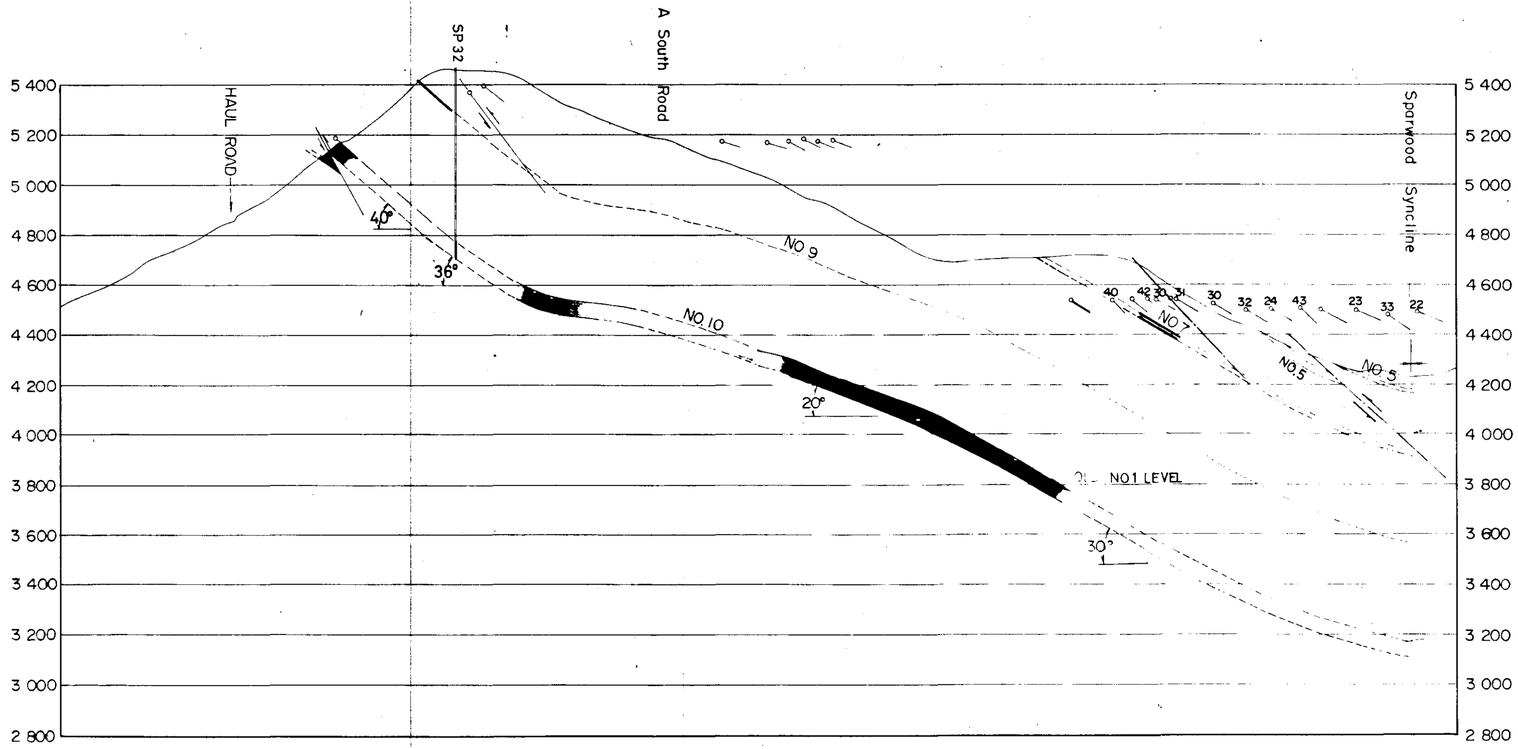
0 500 1000 FEET



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SR 69(2)A

(5)

MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE GEOLOGICAL INVESTIGATION	NUMBER OF MAP	SR-03-03

CROSS SECTION ALONG "A-3" LINE

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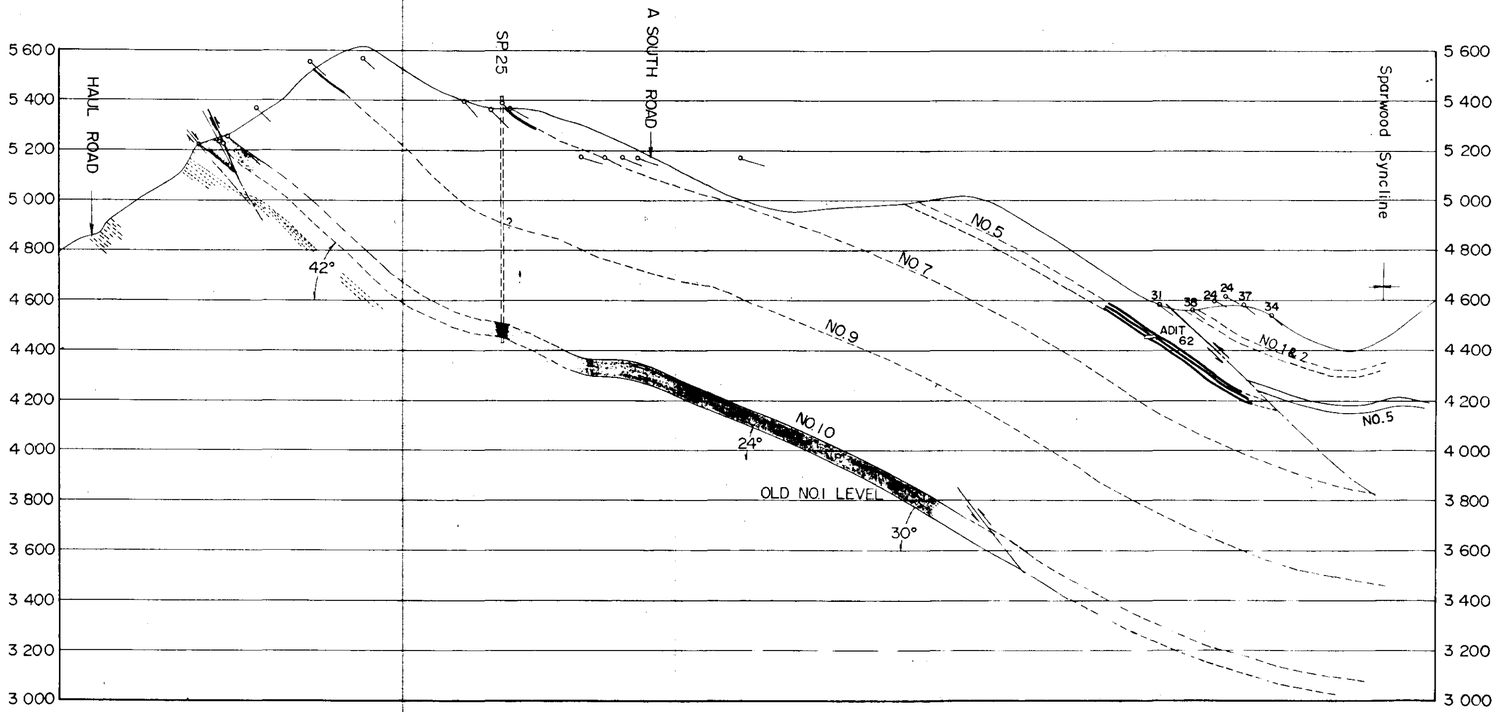

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SR69(2)A

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MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE GEOLOGICAL INVESTIGATION	NUMBER OF MAP.	SR-03-04

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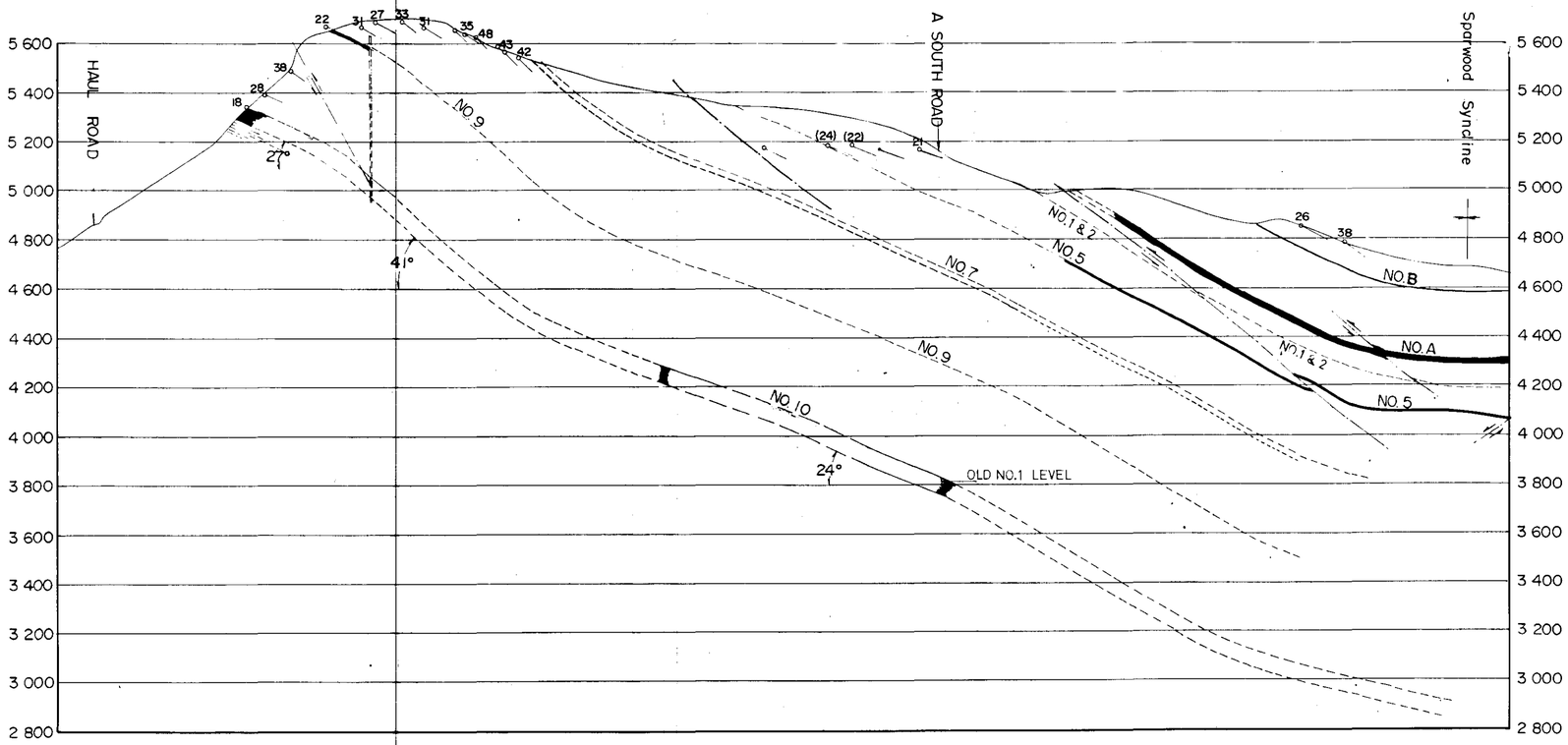

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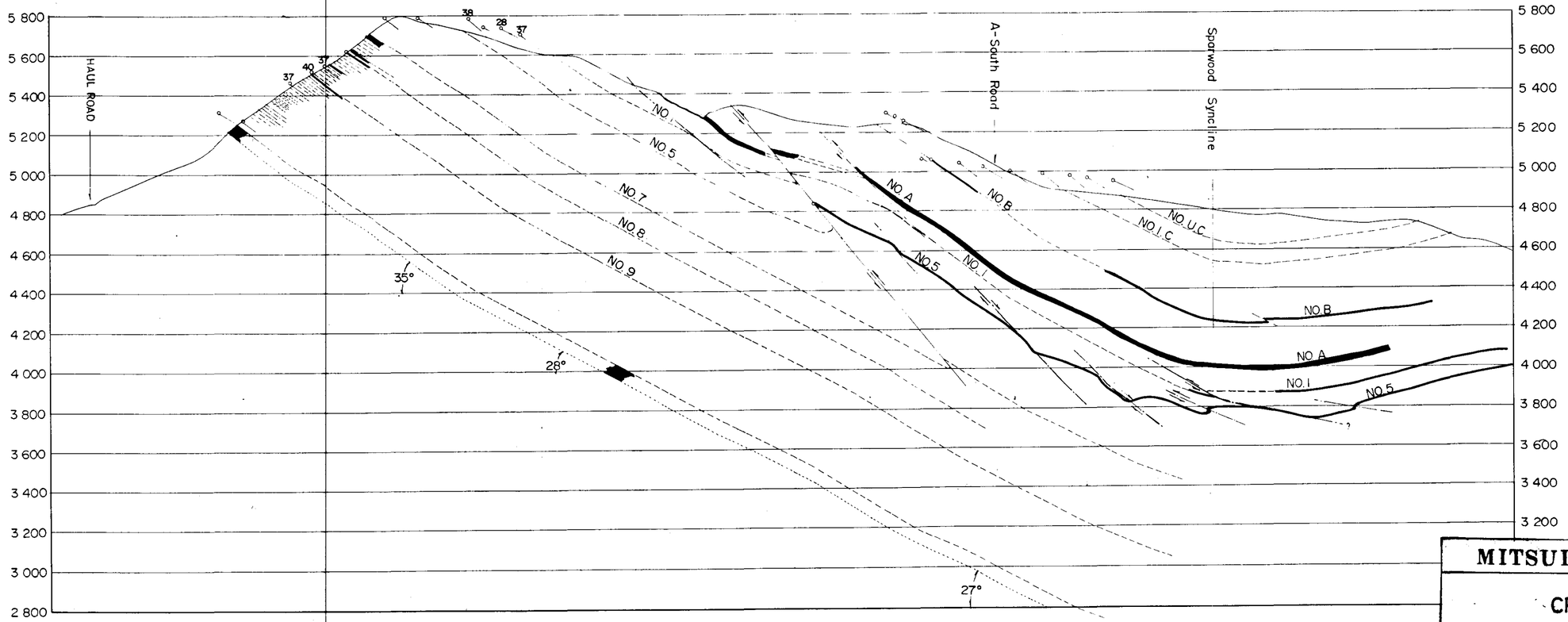
SR 69(2)A (7)

MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE	NUMBER OF MAP	SR-03-05
GEOLOGICAL INVESTIGATION		

CROSS SECTION ALONG "A-6" LINE

SCALE 1" = 400' 0 — 500 — 1000 FEET



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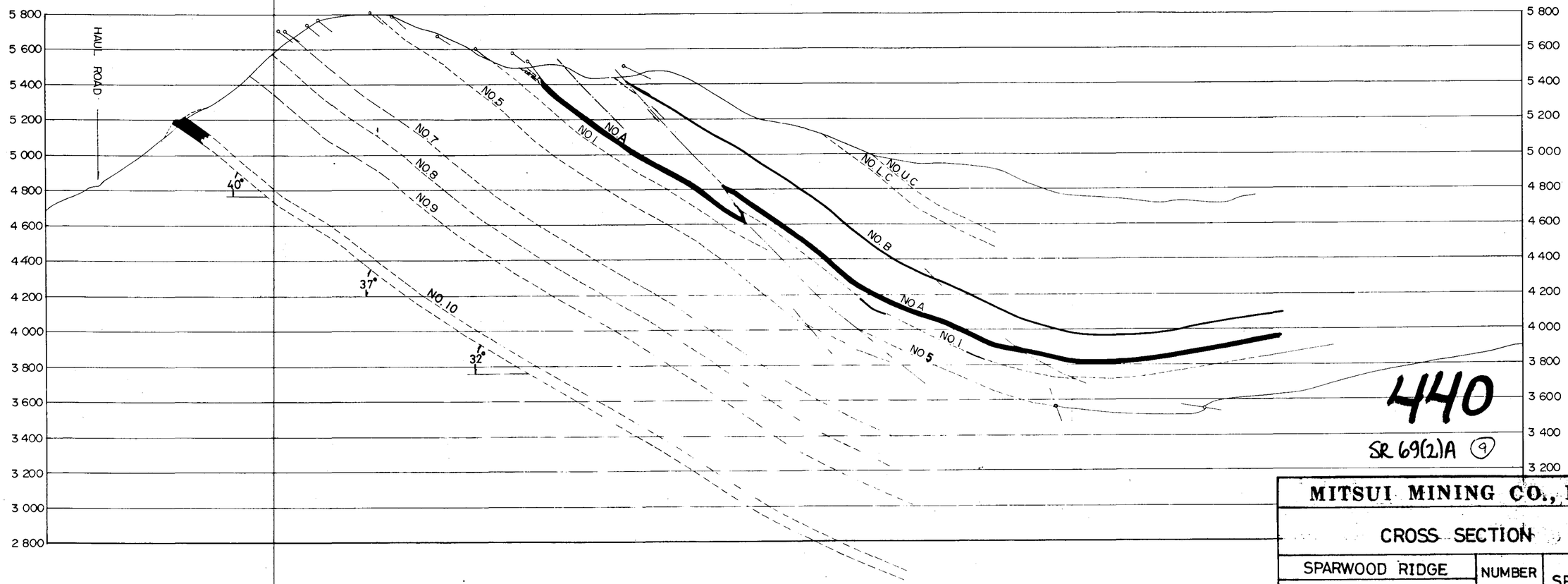
SR 69(2)A

(9)

MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE GEOLOGICAL INVESTIGATION	NUMBER OF MAP	SR-03-07

CROSS SECTION ALONG "B-I" LINE

SCALE 1" = 400' 0 500 1000



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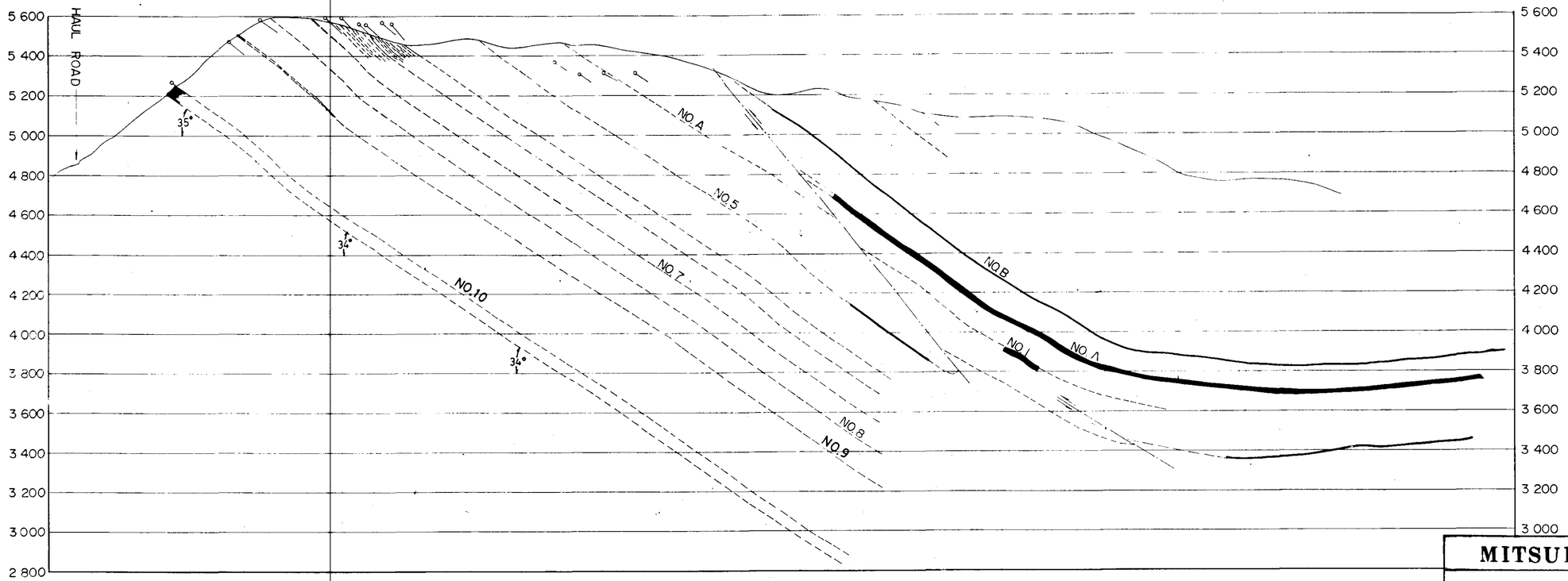
SR 69(2)A (9)

MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE	NUMBER OF MAP	SR-03-09
GEOLOGICAL INVESTIGATION		

CROSS SECTION ALONG "B-3" LINE

SCALE 1" = 400' 0 — 500 — 1 000 FEET



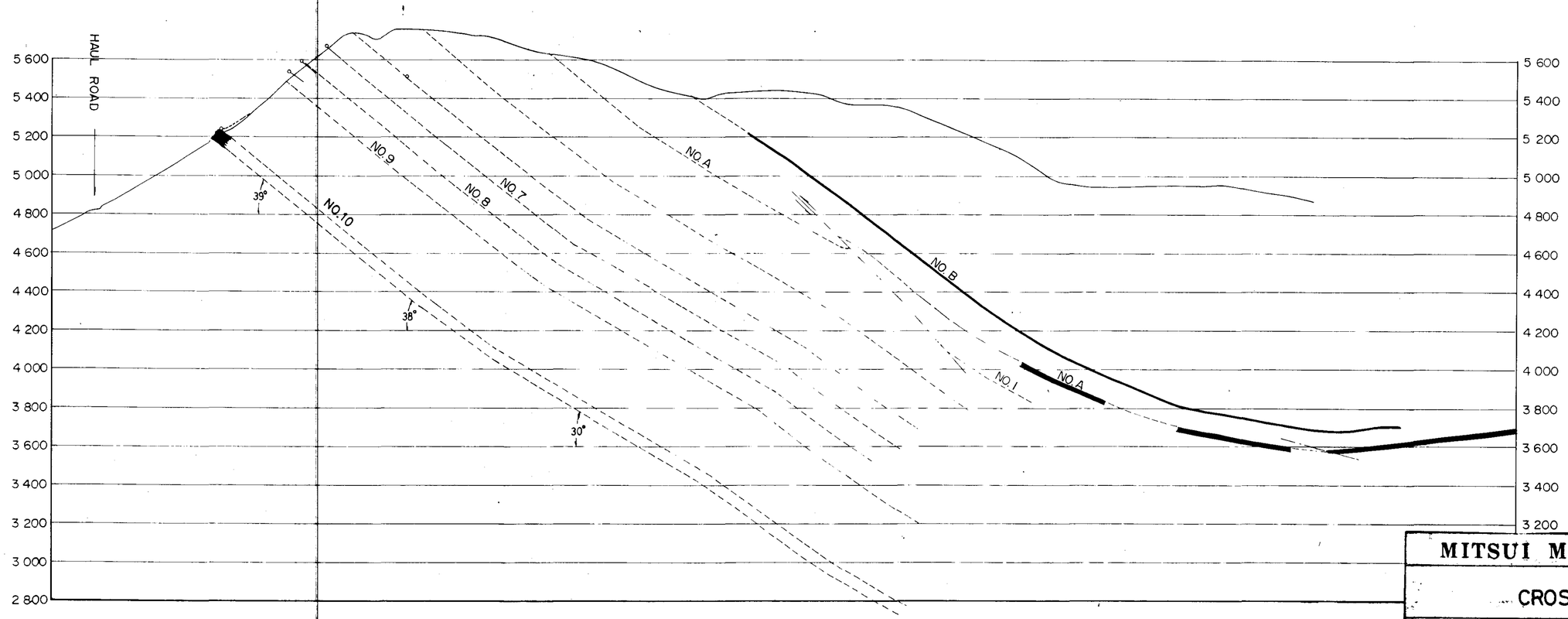
440

SR169(2)A (10)

MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE GEOLOGICAL INVESTIGATION	NUMBER OF MAP	SR-03-11

CROSS SECTION ALONG "B-4" LINE

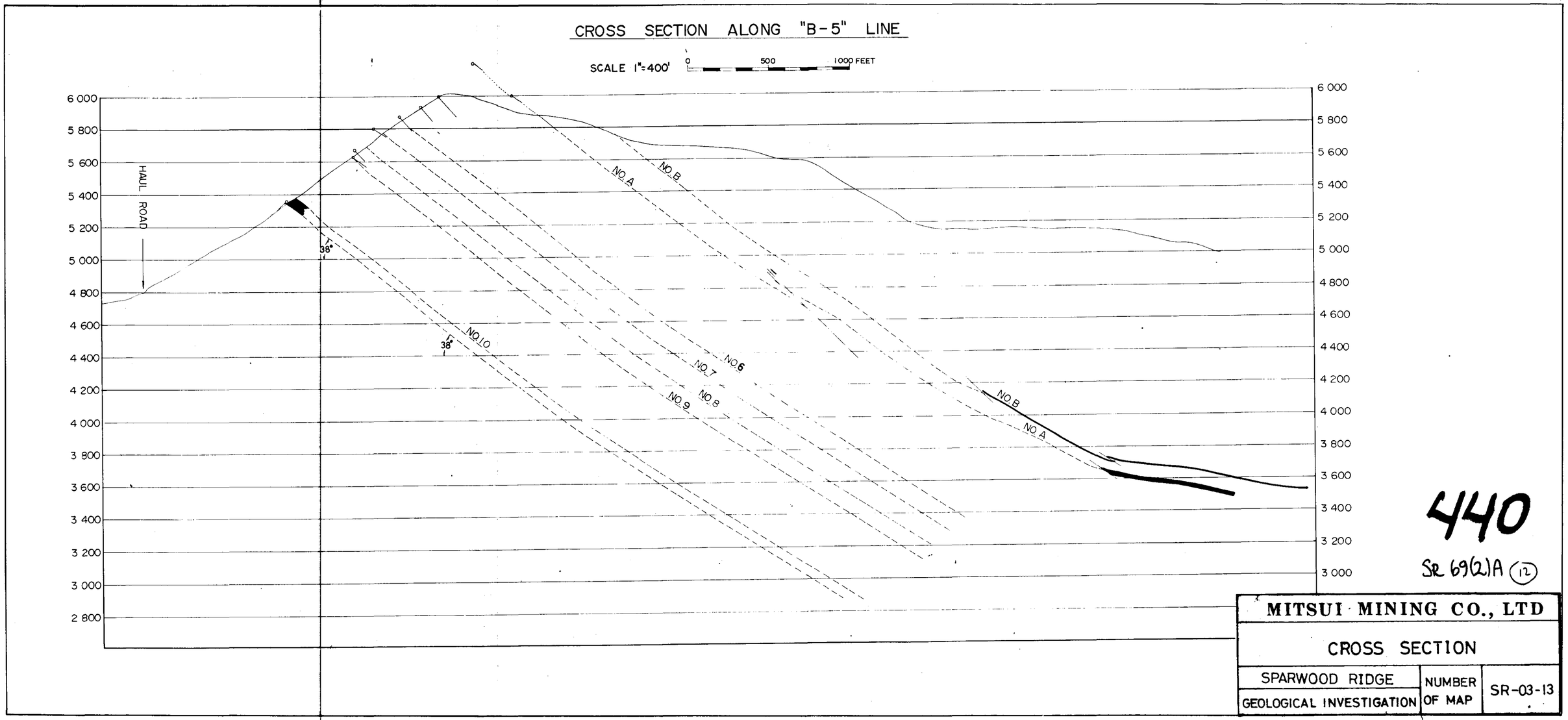
SCALE 1"= 400' 0 500 1000 FEET



440

SR 69(1)A (11)

MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE GEOLOGICAL INVESTIGATION	NUMBER OF MAP	SR-03-12

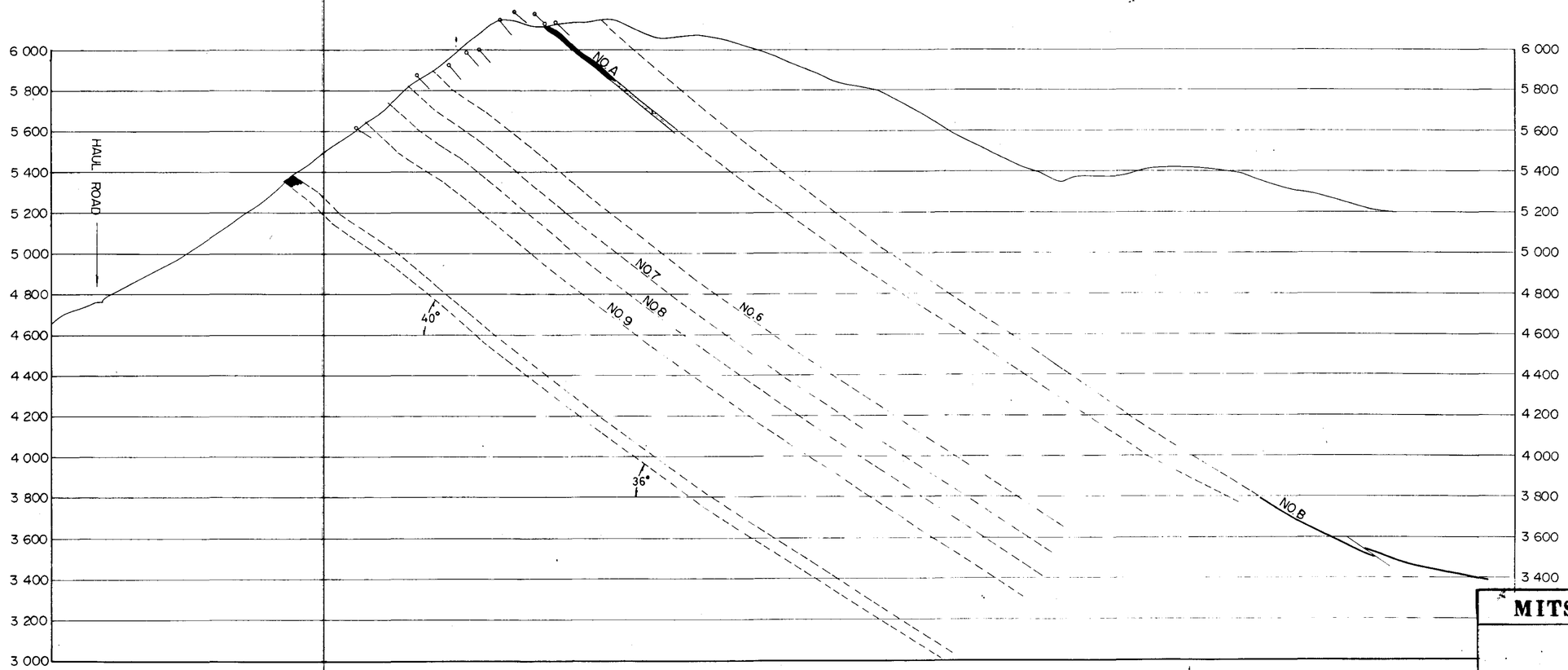


440

SR 69(2)A (12)

CROSS SECTION ALONG "B-6" LINE

SCALE 1"=400' 0 500 1000 FEET



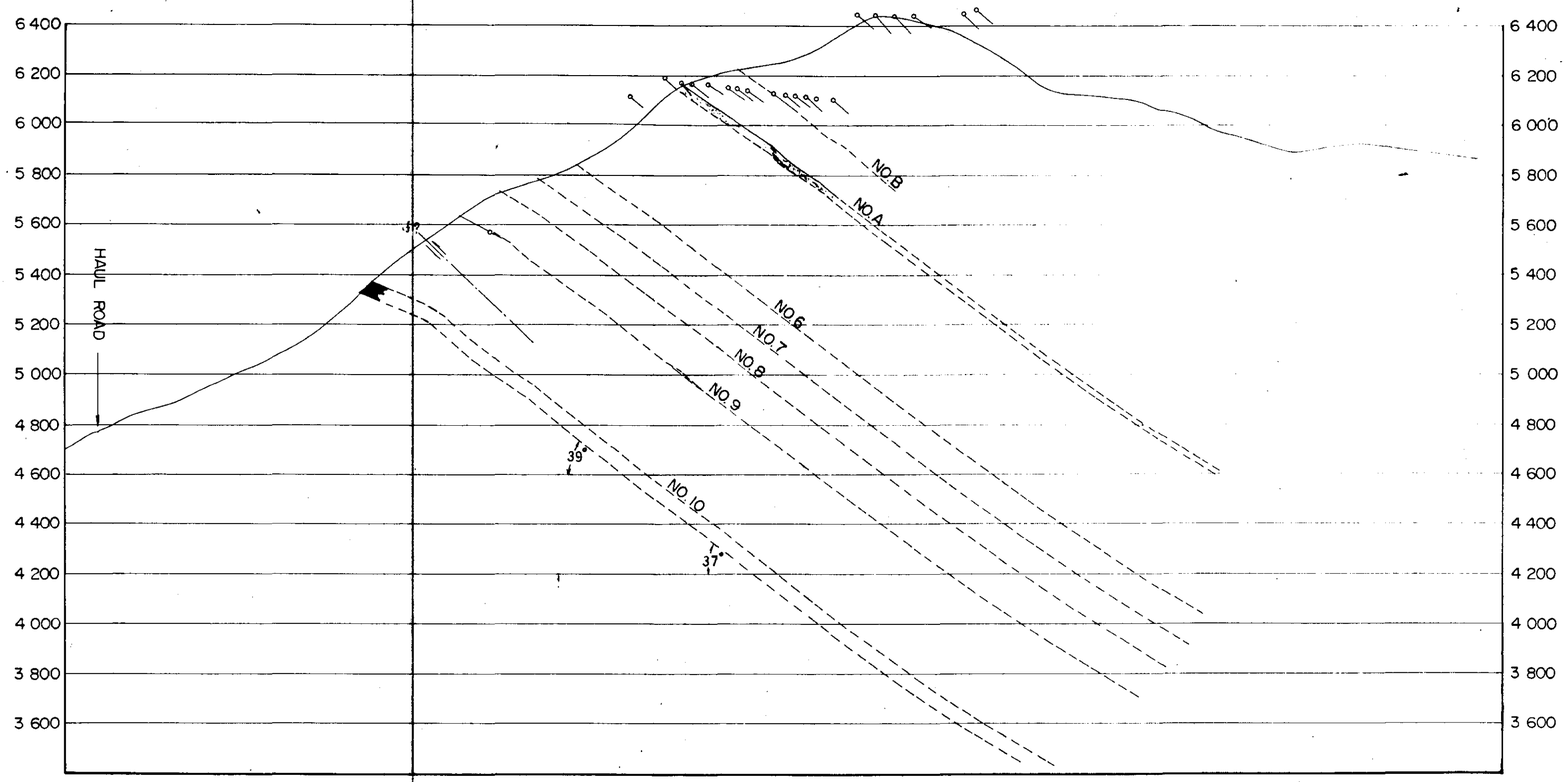
440

SR 69(2)A (13)

MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE	NUMBER OF MAP	SR-03-14
GEOLOGICAL INVESTIGATION		

CROSS SECTION ALONG "B-7" LINE

SCALE 1"=400' 0 — 500 — 1000 FEET

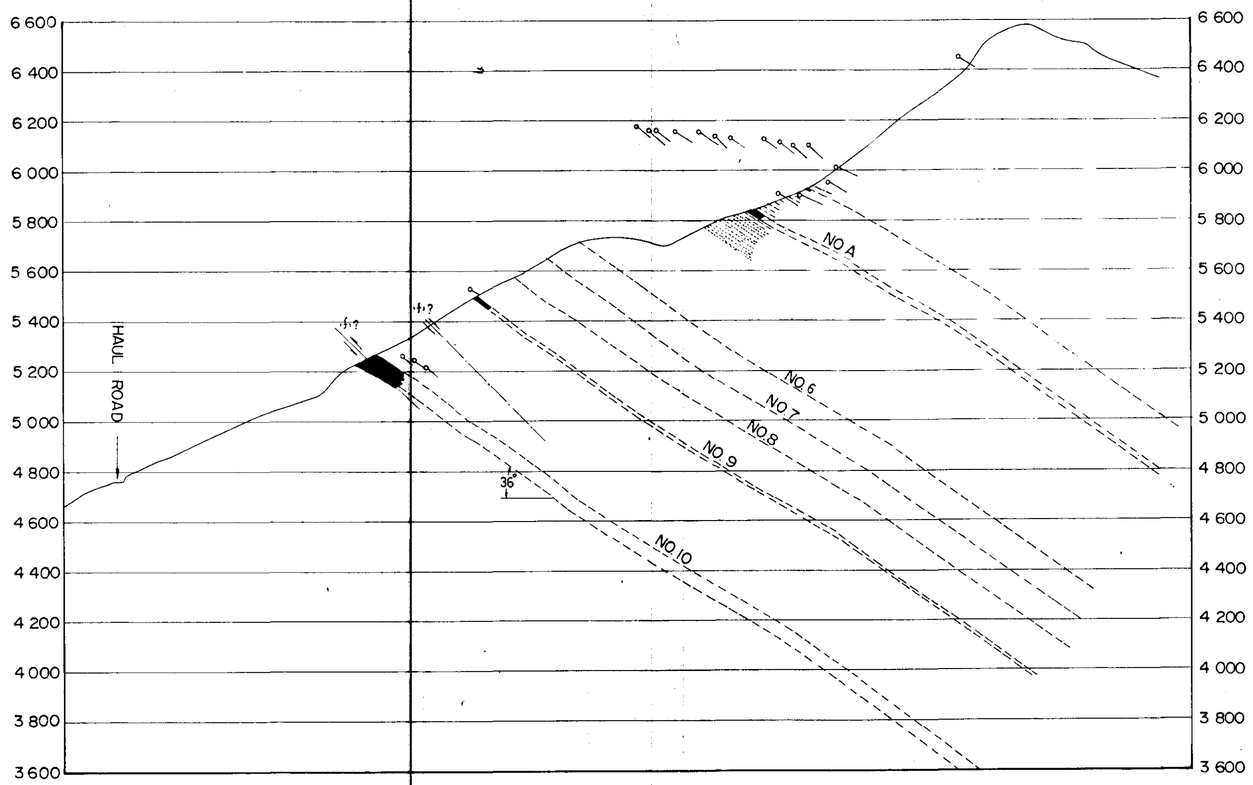


440 SR 69(2)A (14)

MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE GEOLOGICAL INVESTIGATION	NUMBER OF MAP	SR-03-15

CROSS SECTION ALONG "B-8" LINE

SCALE 1"=400' 0 500 1000 FEET

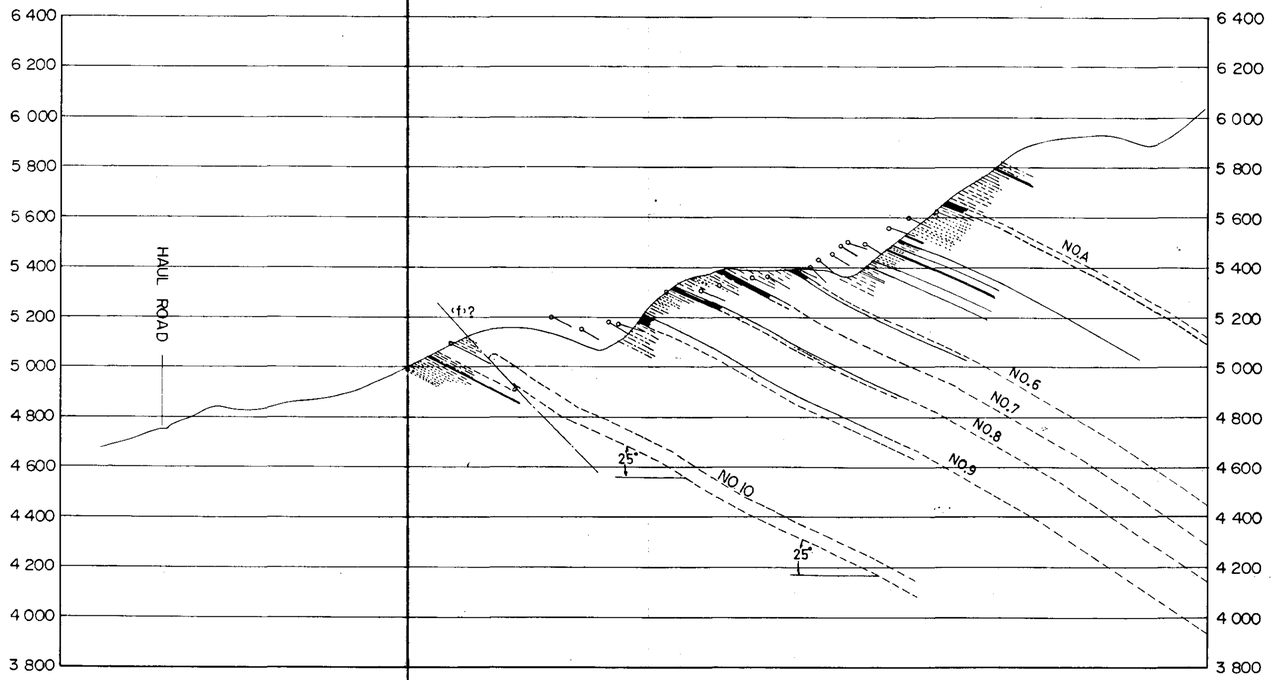


440 SR 69(2)A (15)

MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE GEOLOGICAL INVESTIGATION	NUMBER OF MAP	SR-03-16

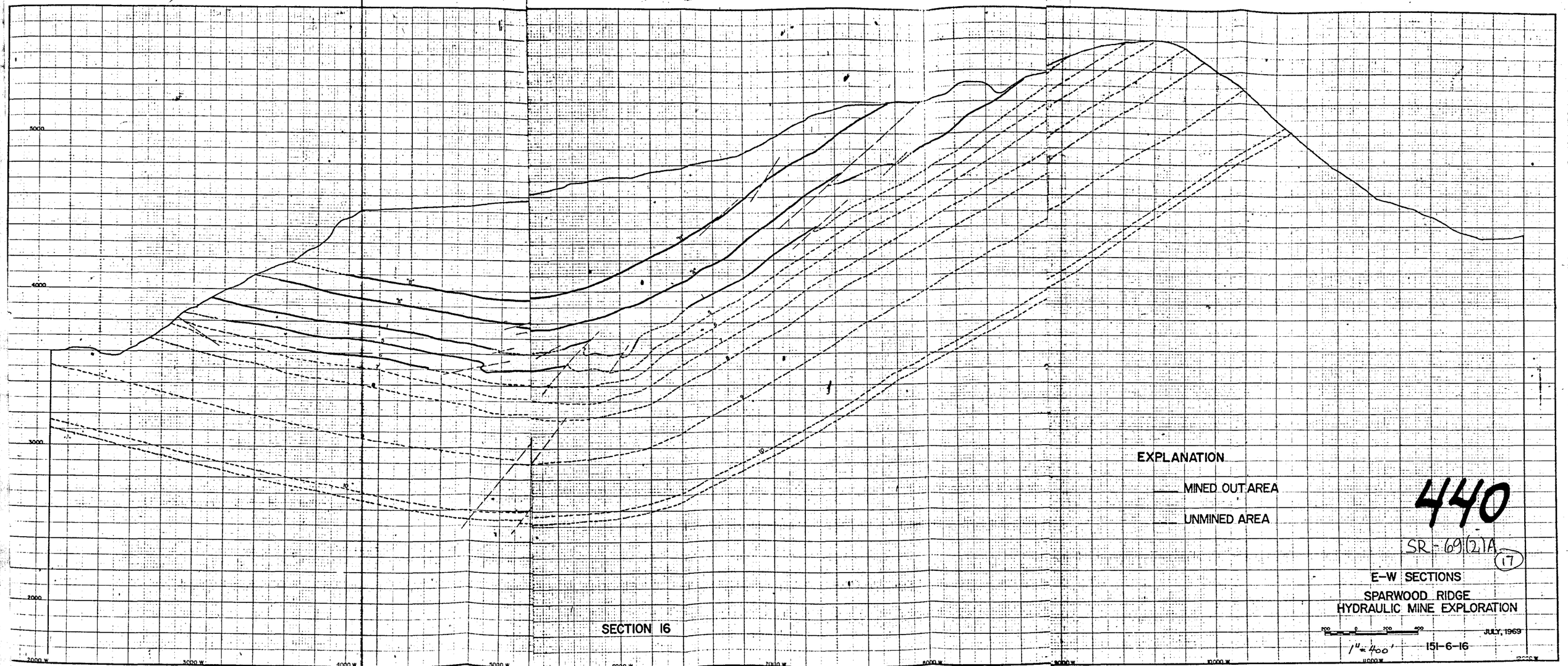
CROSS SECTION ALONG "B-9" LINE

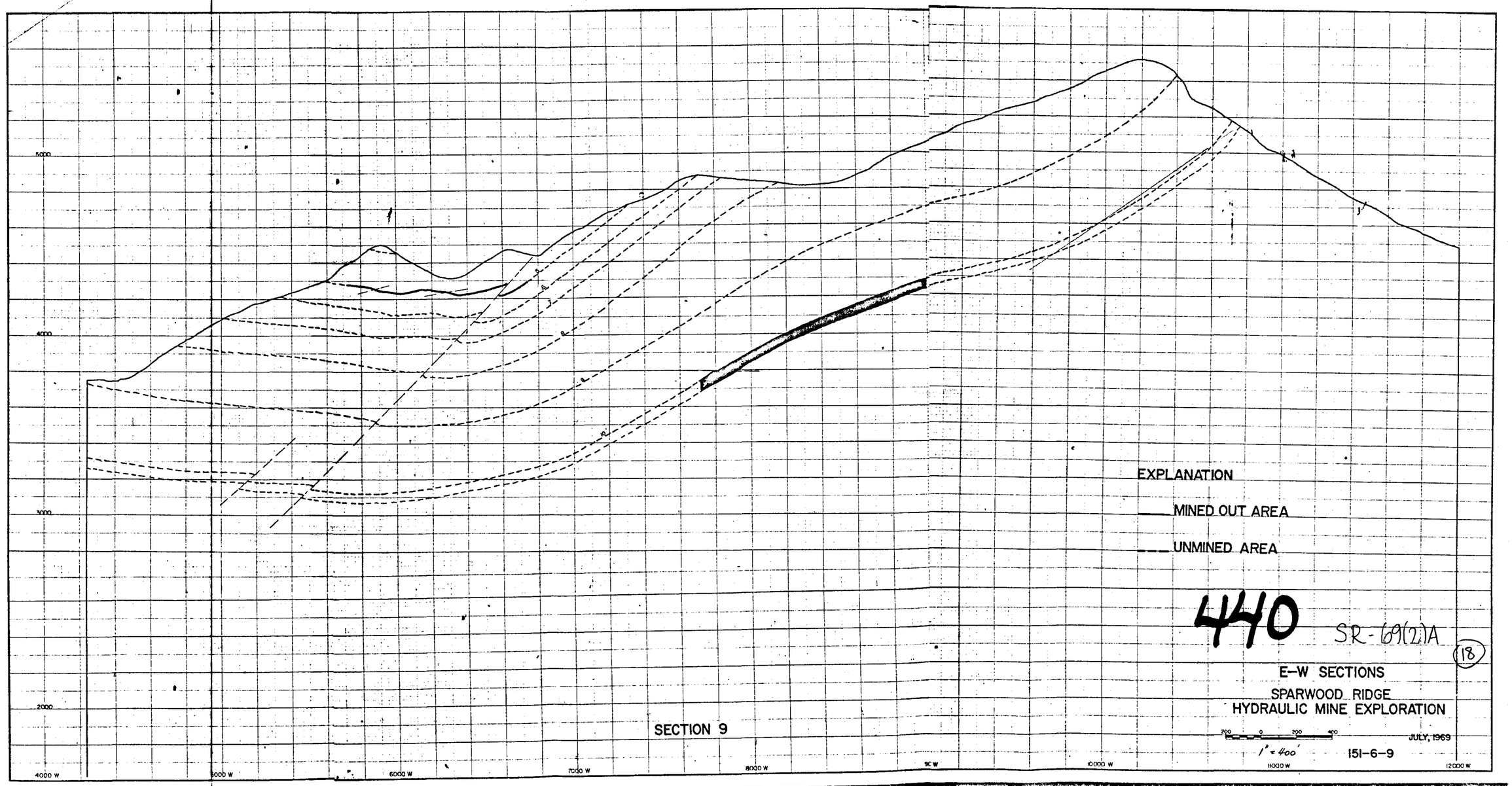
SCALE 1"=400' 0 500 1000 FEET



440 SR 69(2)A (16)

MITSUI MINING CO., LTD		
CROSS SECTION		
SPARWOOD RIDGE GEOLOGICAL INVESTIGATION	NUMBER OF MAP.	SR-03-17


5000
4000
3000
2000
2000 W
3000 W
4000 W
5000 W
6000 W
7000 W
8000 W
9000 W
10000 W
11000 W
12000 W
SECTION 16
EXPLANATION
MINED OUT AREA
UNMINED AREA
440
SR-69(2)A
17
E-W SECTIONS
SPARWOOD RIDGE
HYDRAULIC MINE EXPLORATION
200 0 200 400
JULY, 1969
1"=400'
151-6-16


5000
4000
3000
2000
4000 W
5000 W
6000 W
7000 W
8000 W
9000 W
10000 W
11000 W
12000 W
SECTION 9
EXPLANATION
MINED OUT AREA
UNMINED AREA
440
SR-69(2)A
(18)
E-W SECTIONS
SPARWOOD RIDGE
HYDRAULIC MINE EXPLORATION
200 0 200 400
1" = 400'
JULY, 1969
151-6-9