

Fig. 12-1-7

Fig. 12-1-7 TIME CONTOUR MAP, E-11 FIELD, TOP CARBONATES
Vol. IV

Fig. 12-1-8

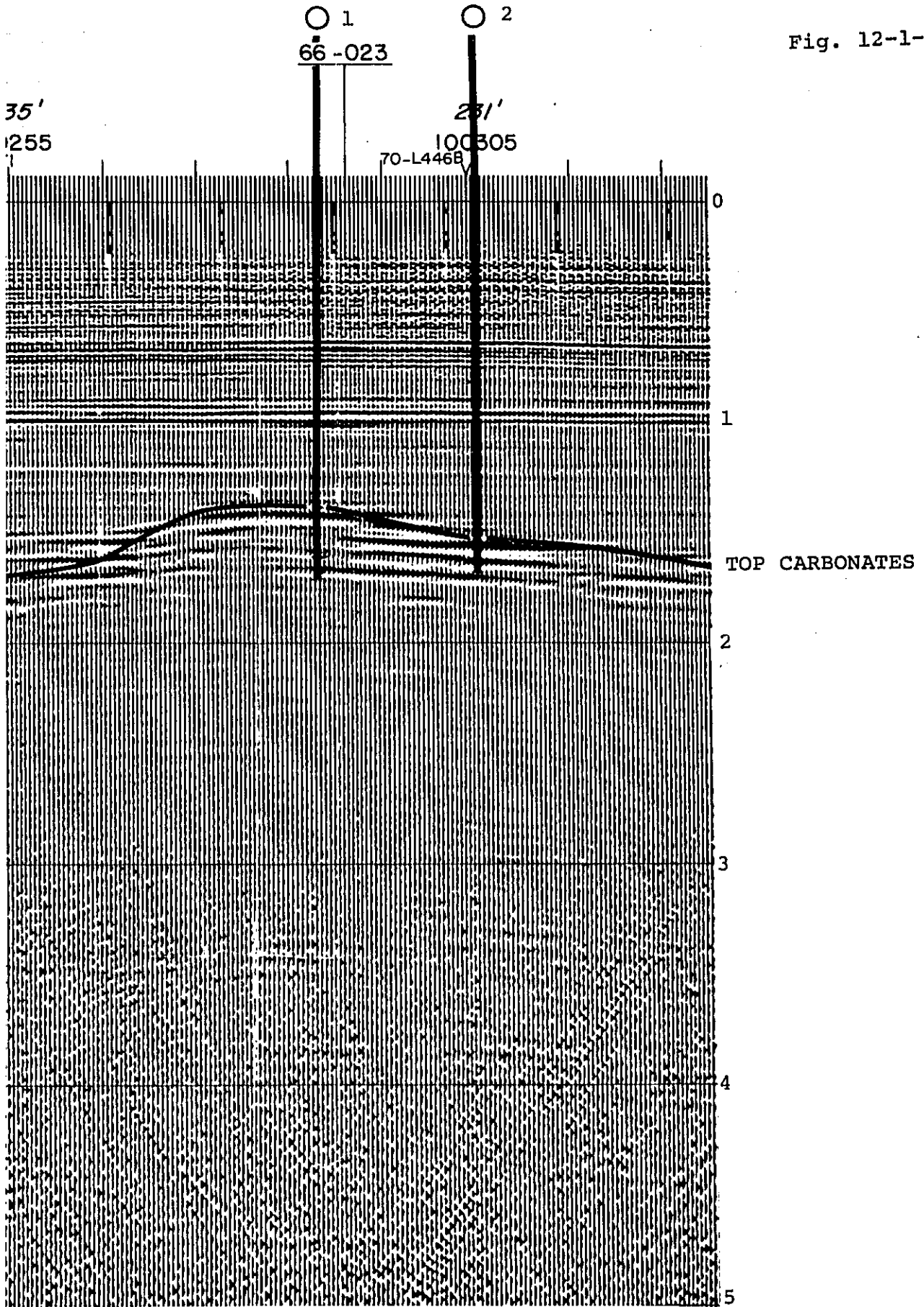


Fig. 12-1-8 SEISMIC SECTION E-11 FIELD, Line 70-714
Vol. IV

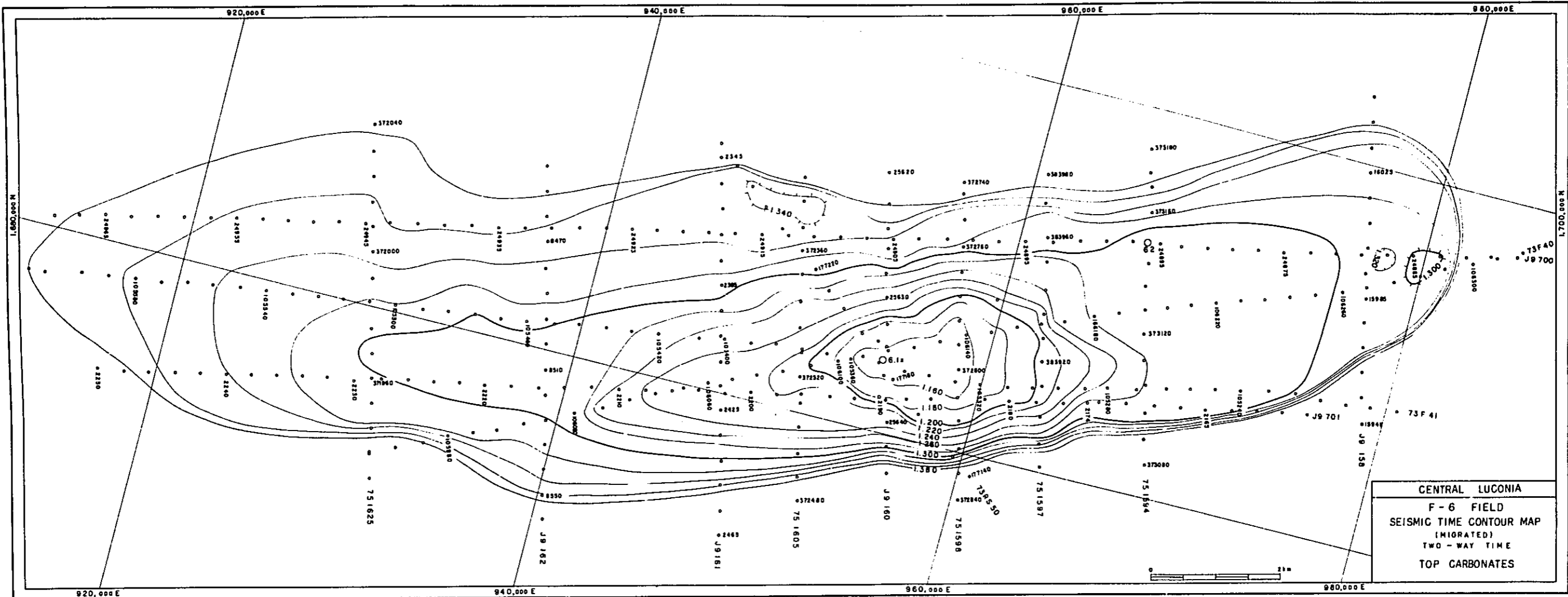


Fig. 12-1-9 TIME CONTOUR MAP, F-6 FIELD, TOP CARBONATES
Vol. IV

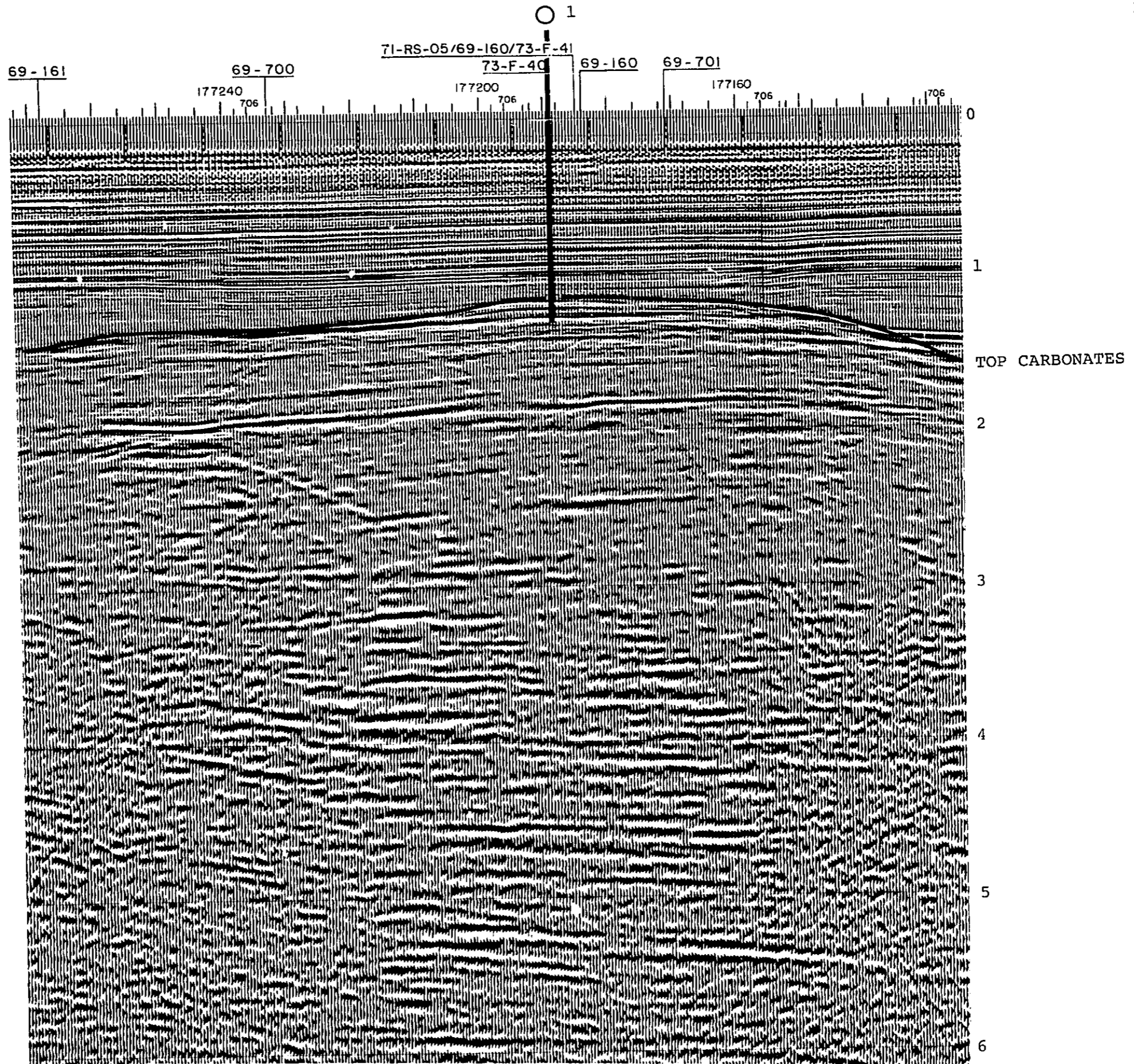


Fig. 12-1-10 SEISMIC SECTION, F-6 FIELD, Line 73-RS-50
Vol. IV

Fig. 12-1-12

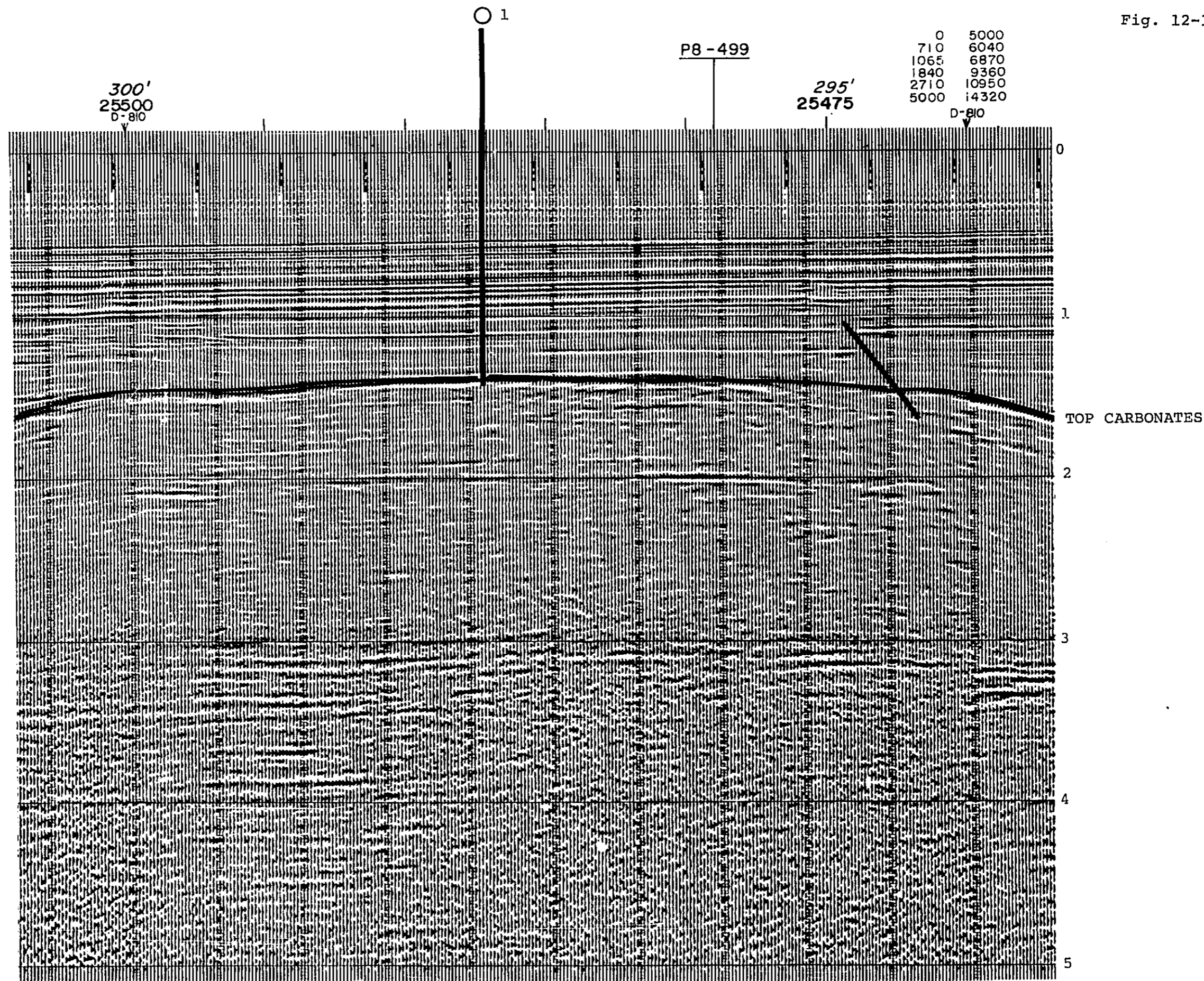


Fig. 12-1-12 SEISMIC SECTION, F-9 FIELD, Line J9-160
Vol. IV

Fig. 12-1-13

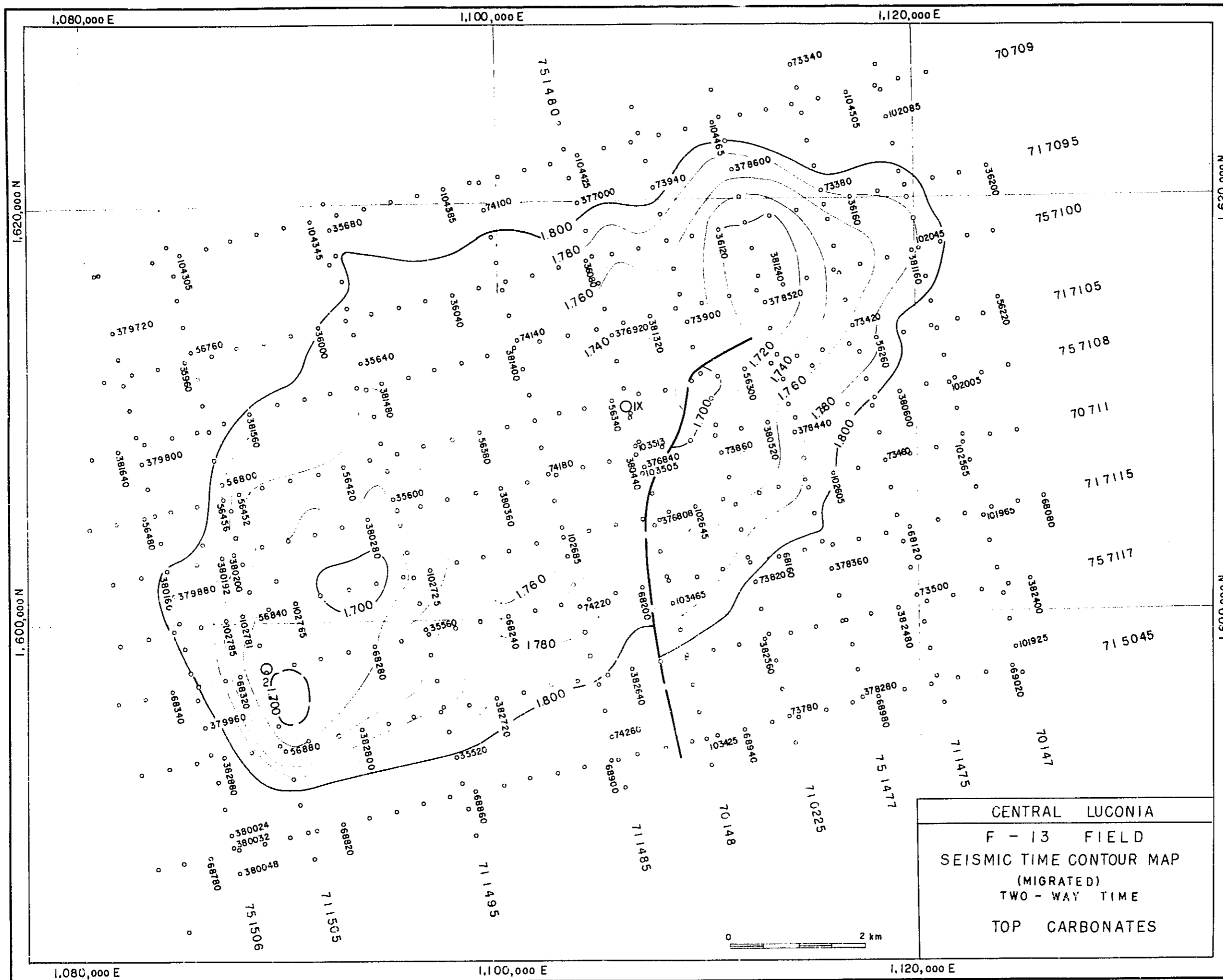


Fig. 12-1-13 TIME CONTOUR MAP, F-13 FIELD, TOP CARBONATES
Vol. IV

Fig. 12-1-14

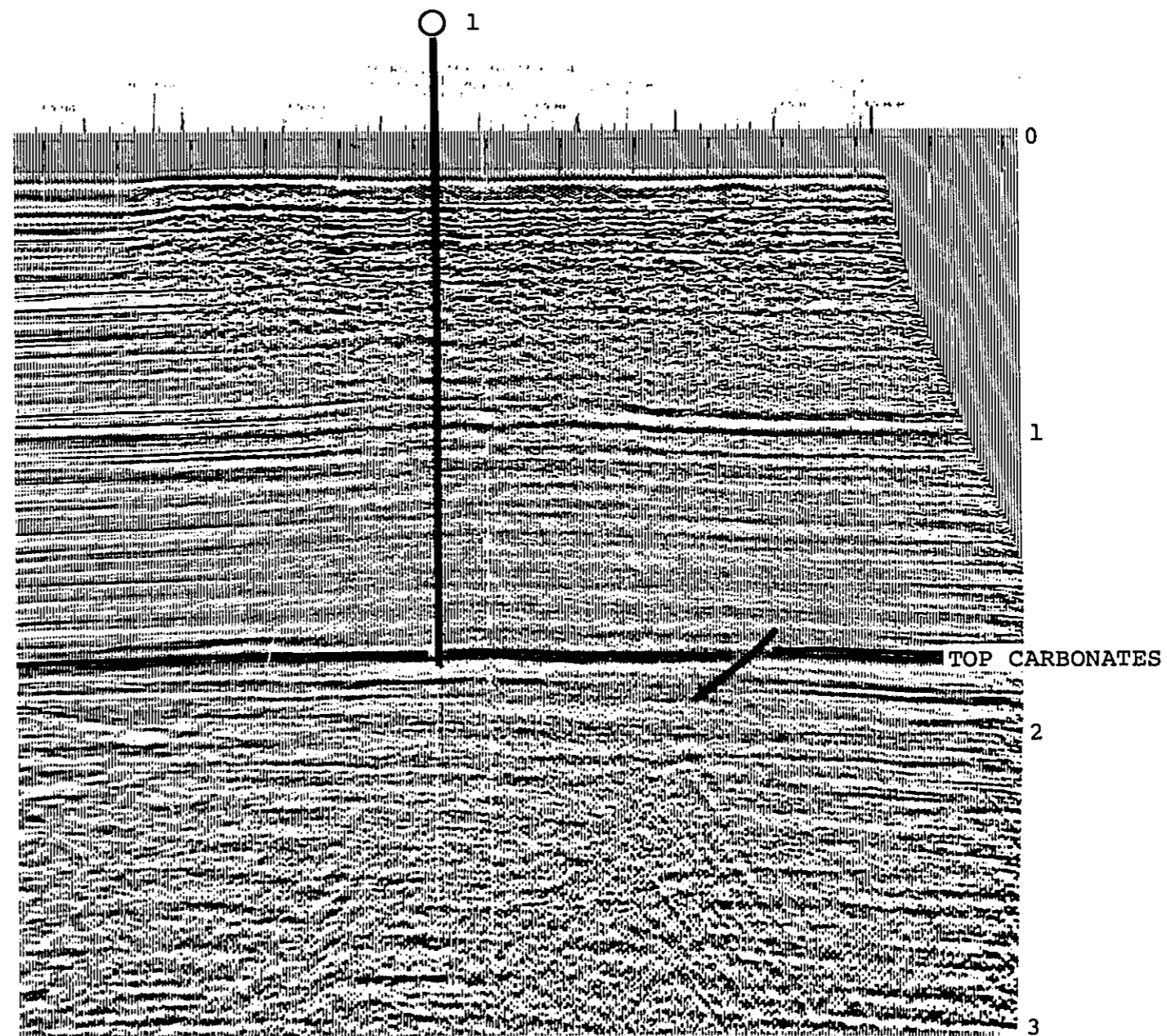


Fig. 12-1-14 SEISMIC SECTION F-13 FIELD, Line 75-1480
Vol. IV

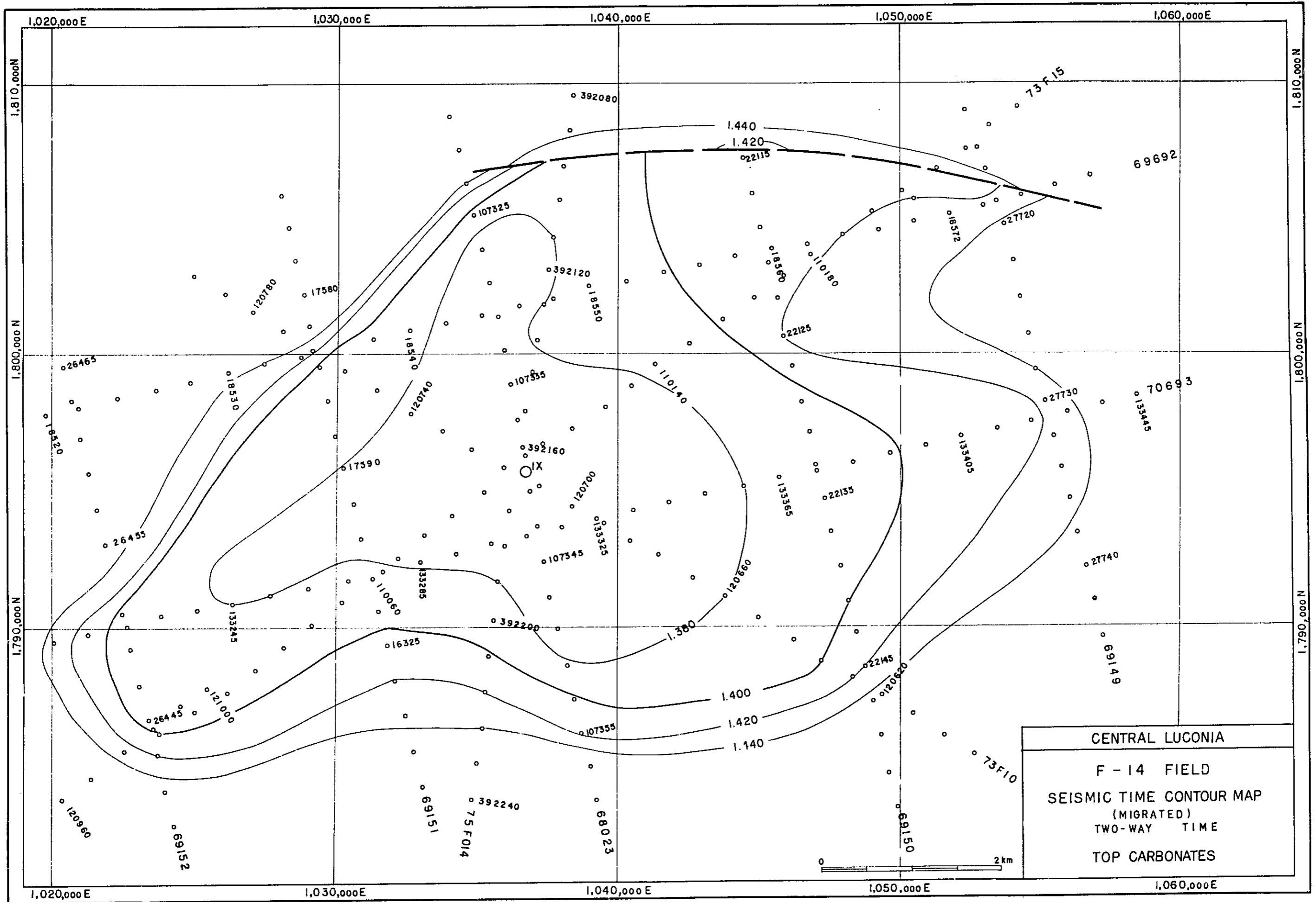


Fig. 12-1-15 TIME CONTOUR MAP, F-14 FIELD, TOP CARBONATES
Vol. IV

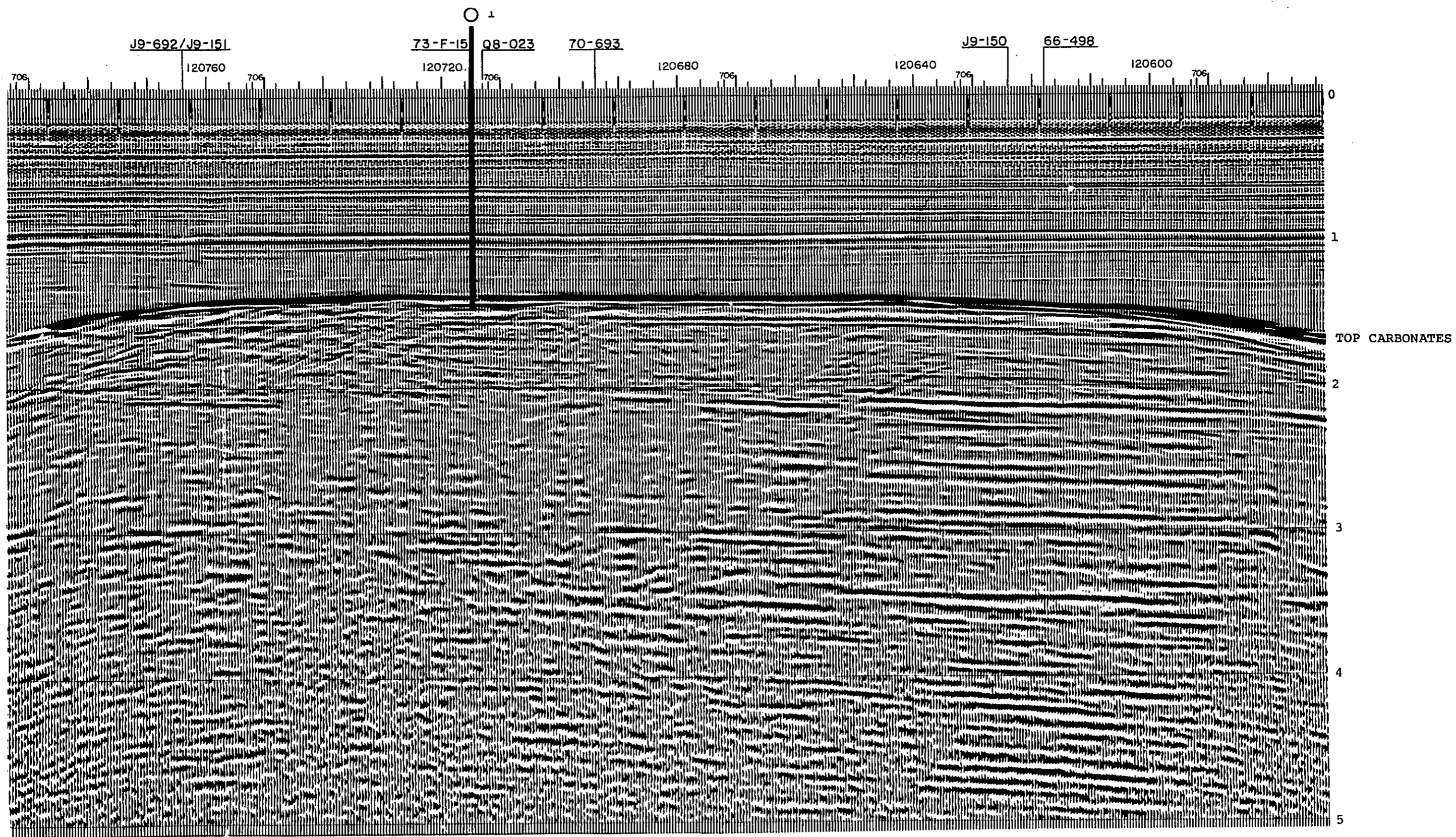


Fig. 12-1-16 SEISMIC SECTION, F-14 FIELD, Line 73-F-10
Vol. IV

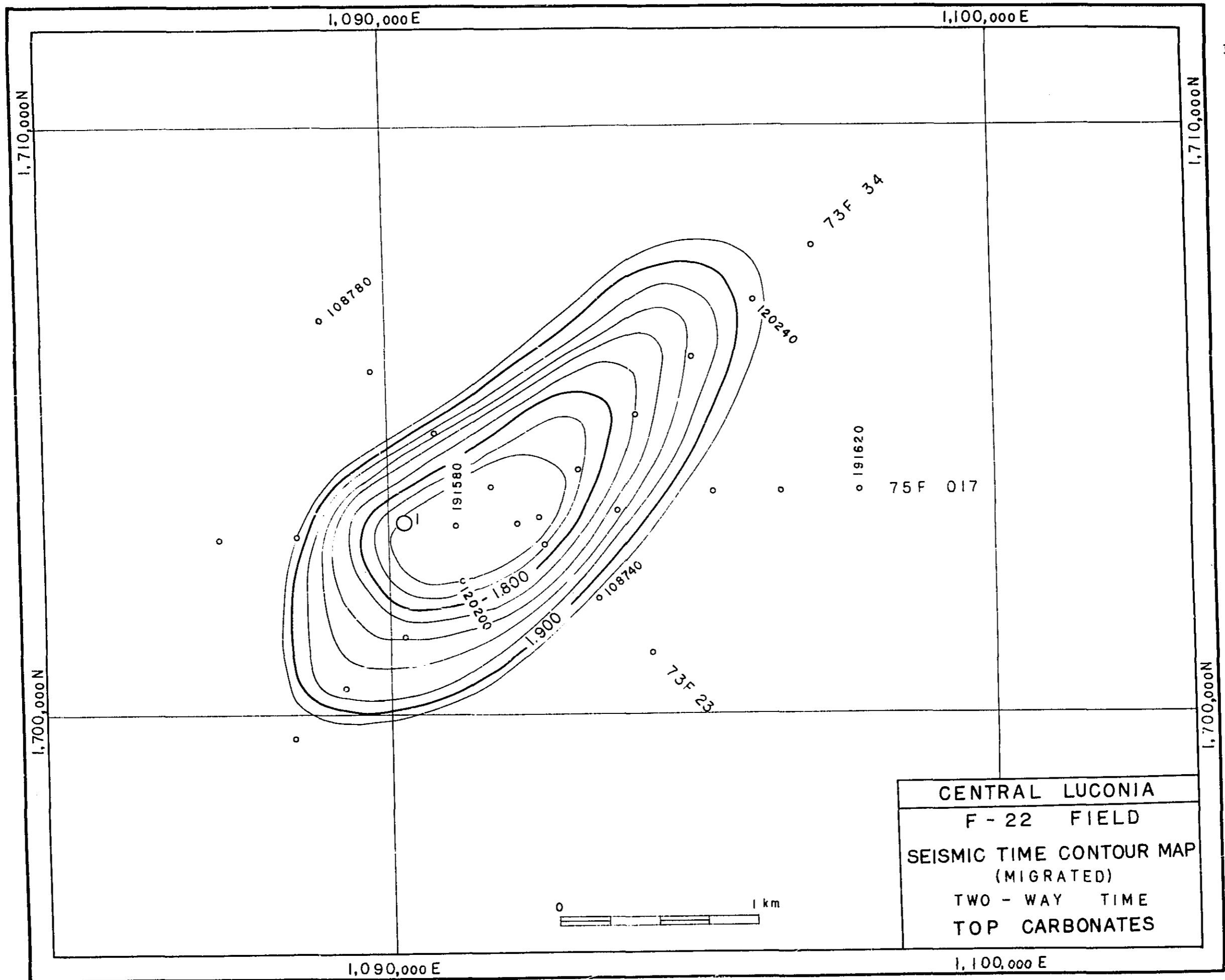


Fig. 12-1-17

Fig. 12-1-17 TIME CONTOUR MAP, F-22 FIELD, TOP CARBONATES
Vol. IV

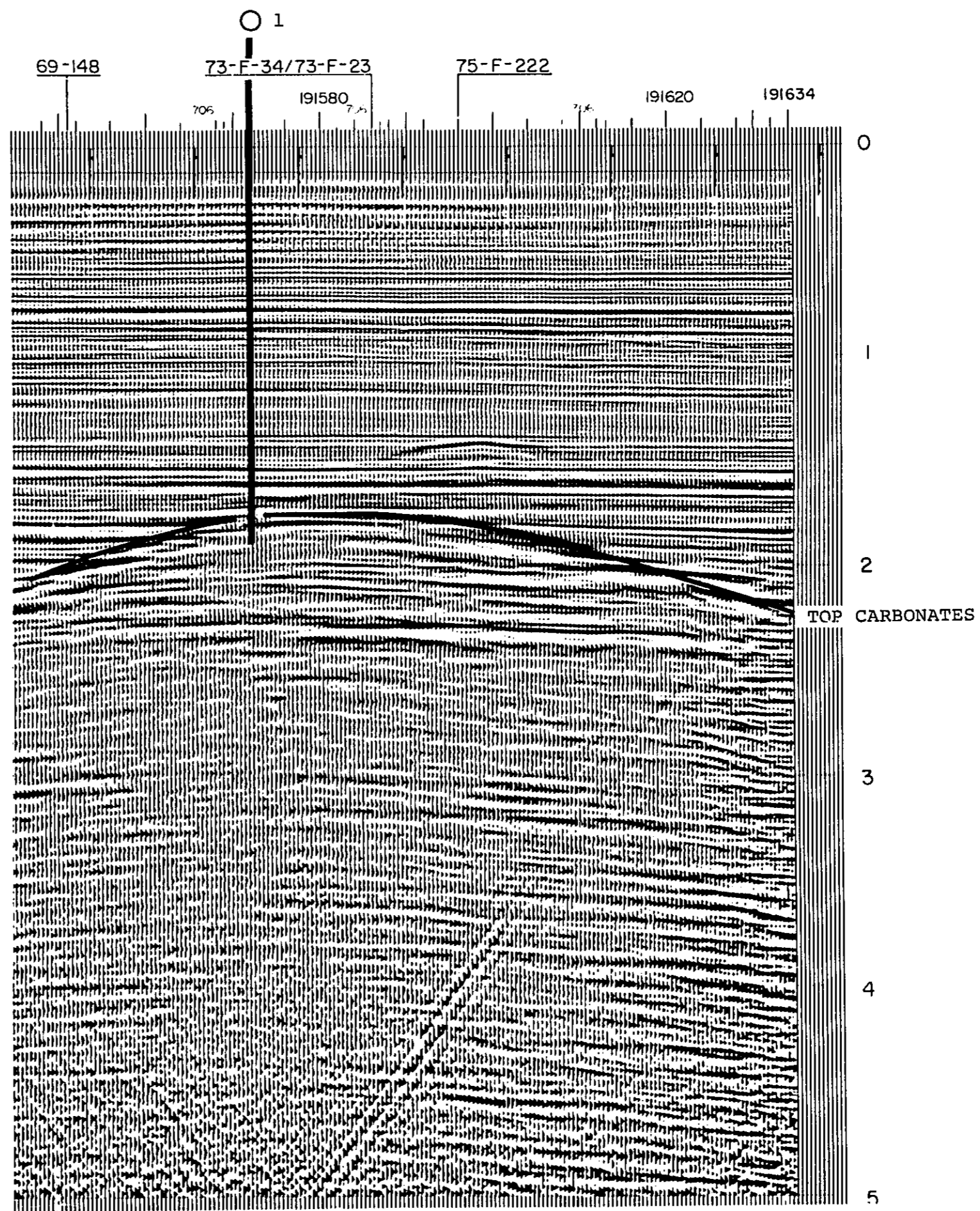


Fig. 12-1-18 SEISMIC SECTION, F-22 FIELD, Line 75-F-017
Vol. IV

Fig. 12-1-19

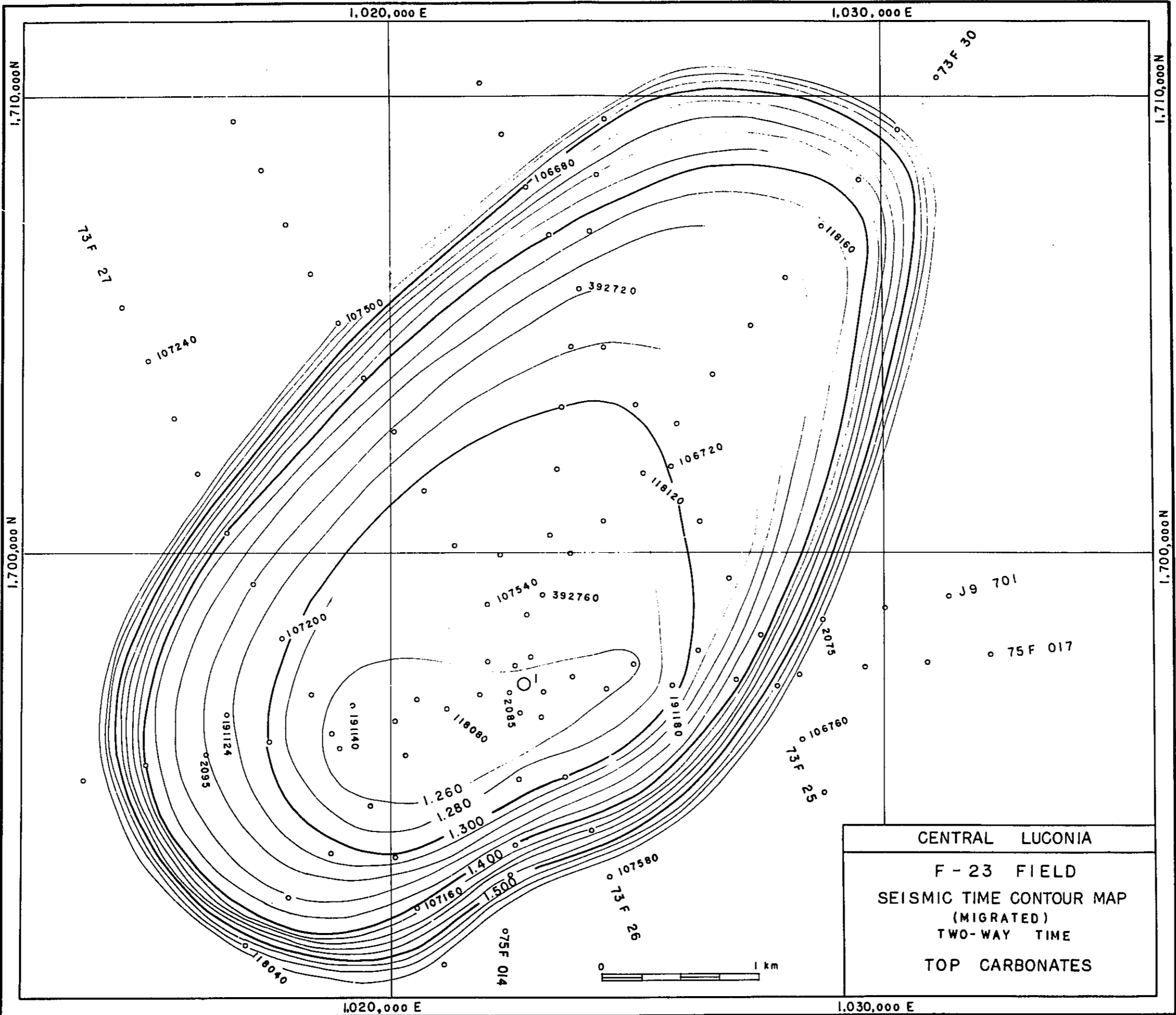


Fig. 12-1-19 TIME CONTOUR MAP, F-23 FIELD, TOP CARBONATES
Vol. IV

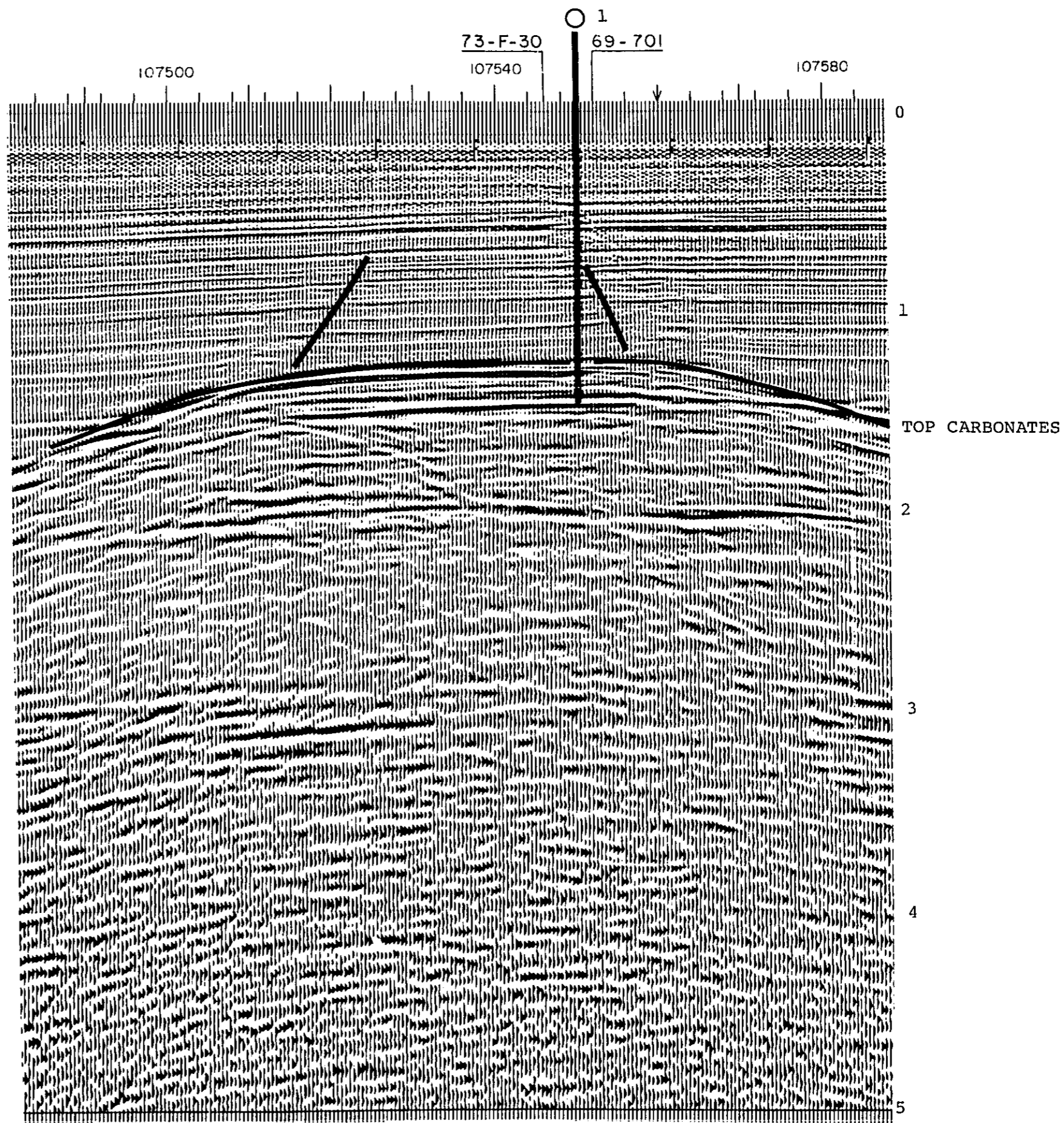


Fig. 12-1-20 SEISMIC SECTION, F-23 FIELD, Line 73-F-26
Vol. IV

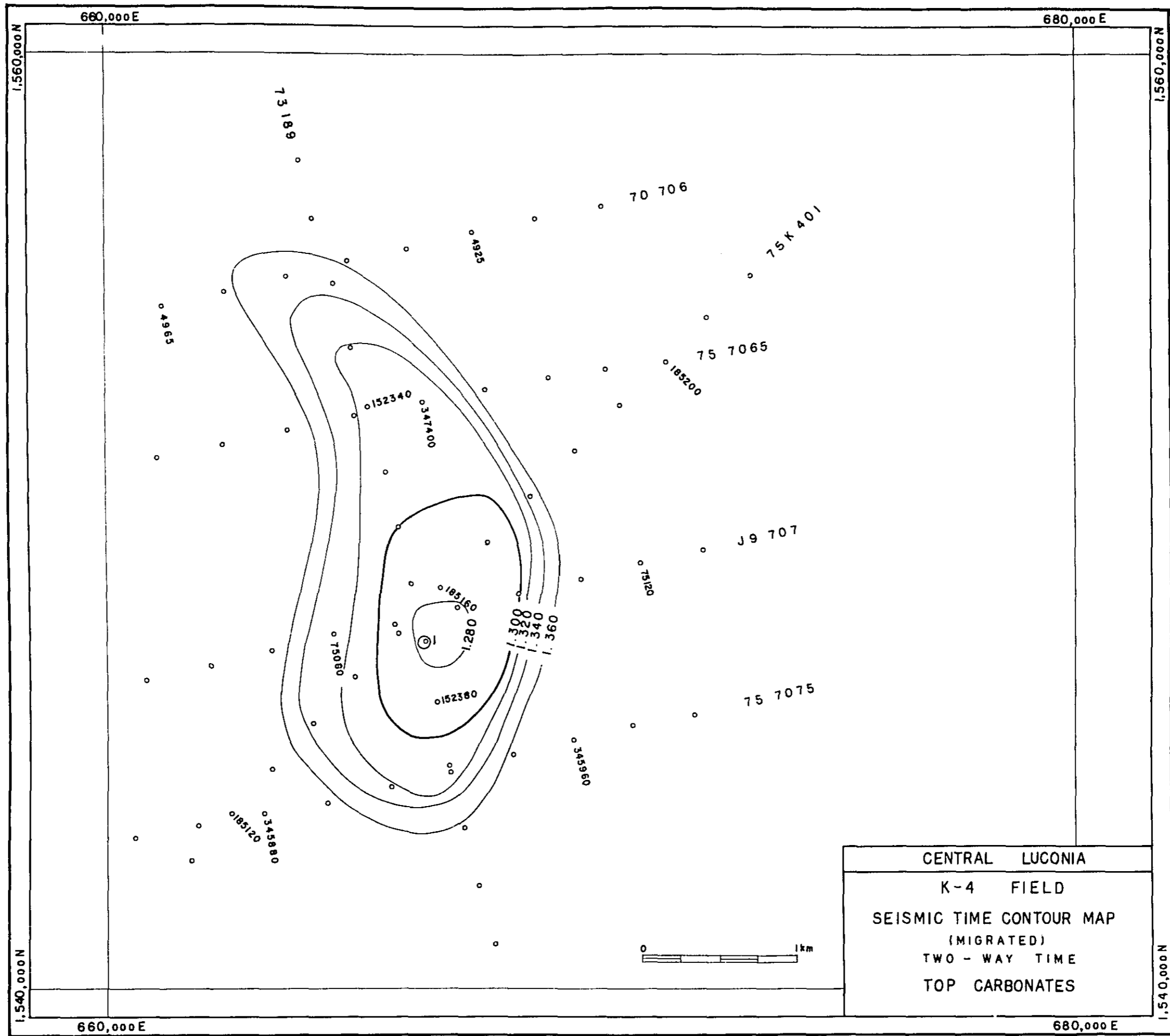


Fig. 12-1-21

Fig. 12-1-21 TIME CONTOUR MAP, K-4 FIELD, TOP CARBONATES
Vol. IV

Fig. 12-1-22

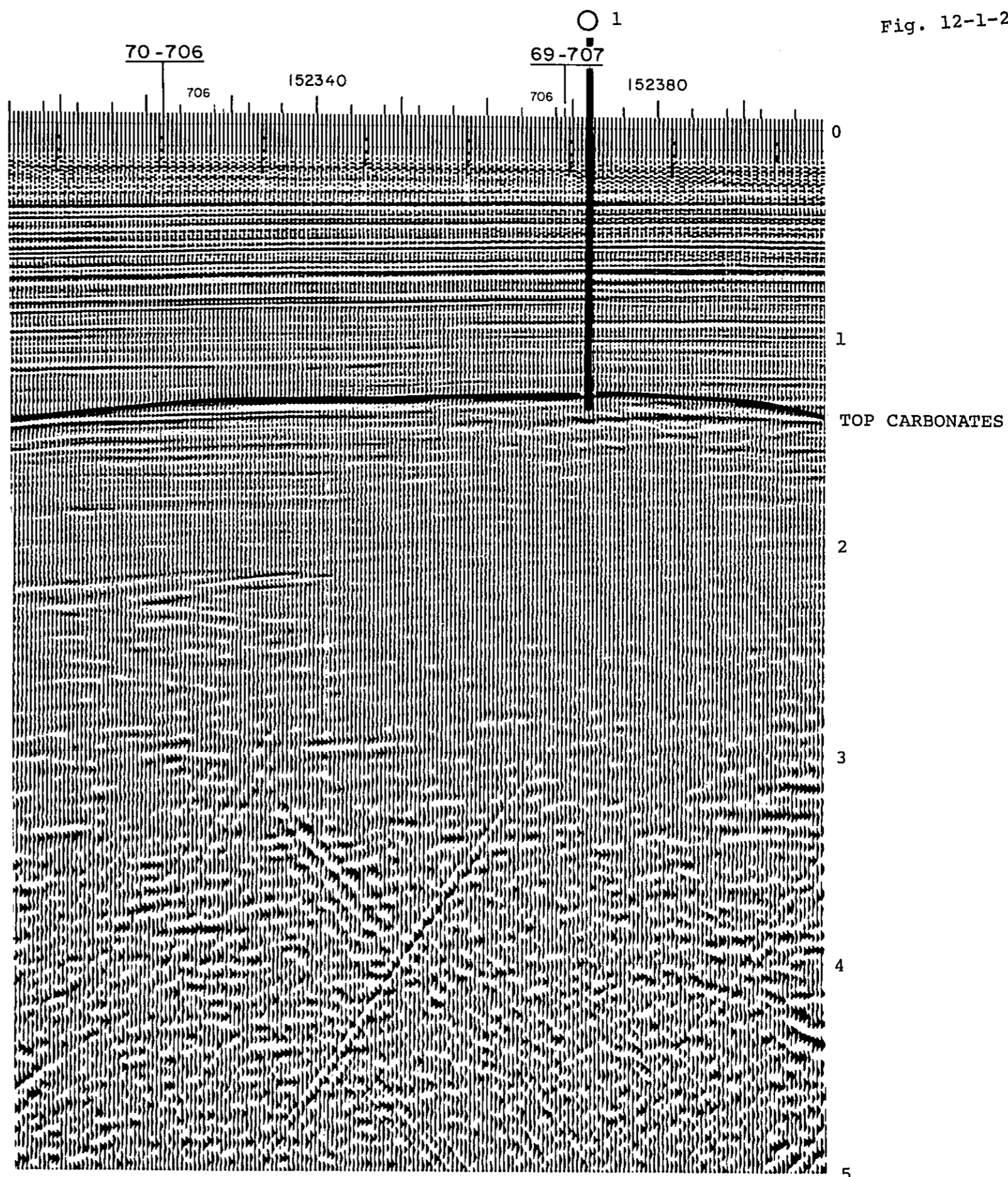


Fig. 12-1-22 SEISMIC SECTION, K-4 FIELD, Line 73-189
Vol. IV

Fig. 12-1-23

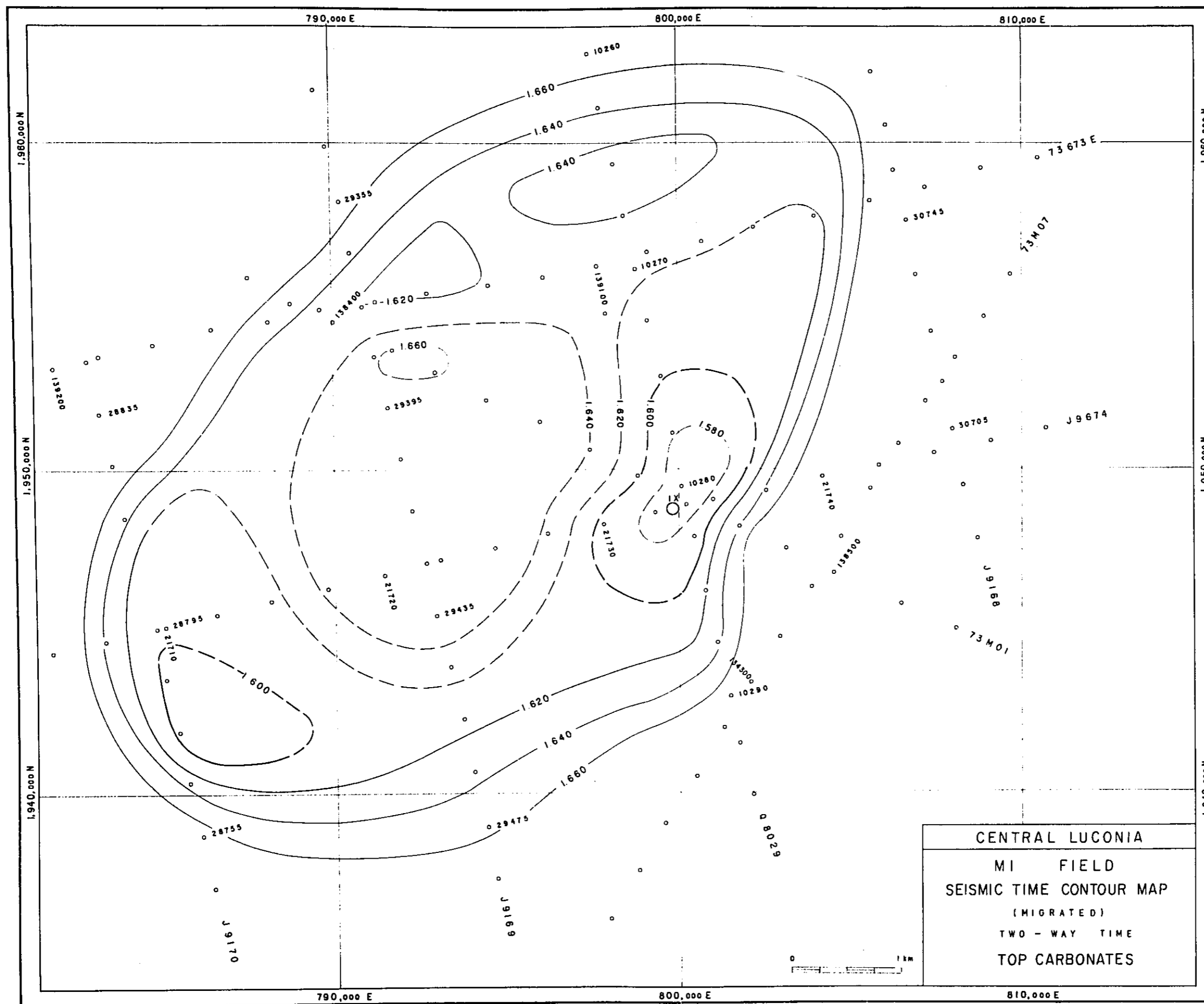


Fig. 12-1-23 TIME CONTOUR MAP, M-1 FIELD, TOP CARBONATES
Vol. IV

Fig. 12-1-24

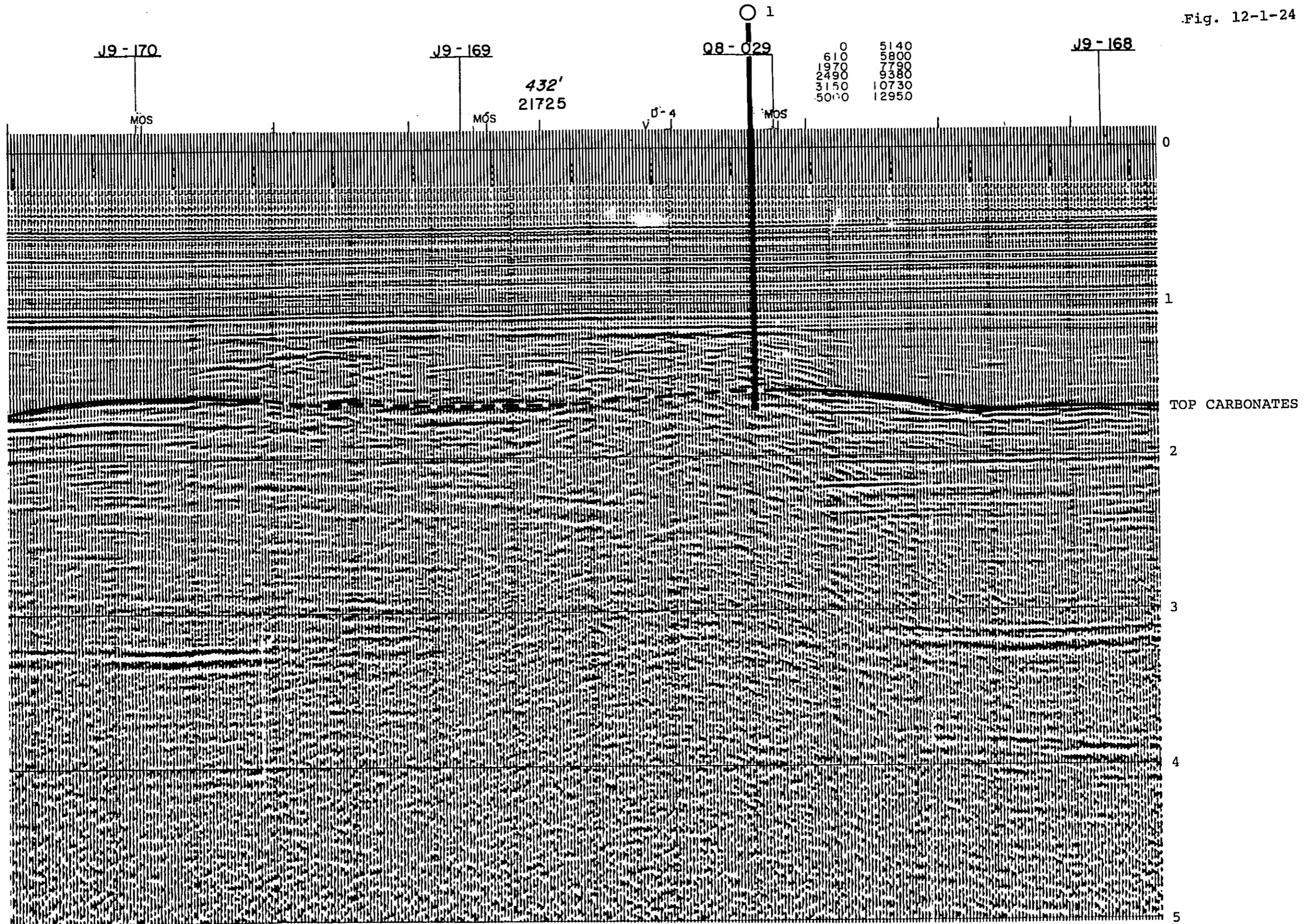


Fig. 12-1-24 SEISMIC SECTION, M-1 FIELD, Line J9-674
Vol. IV

Fig. 12-1-25

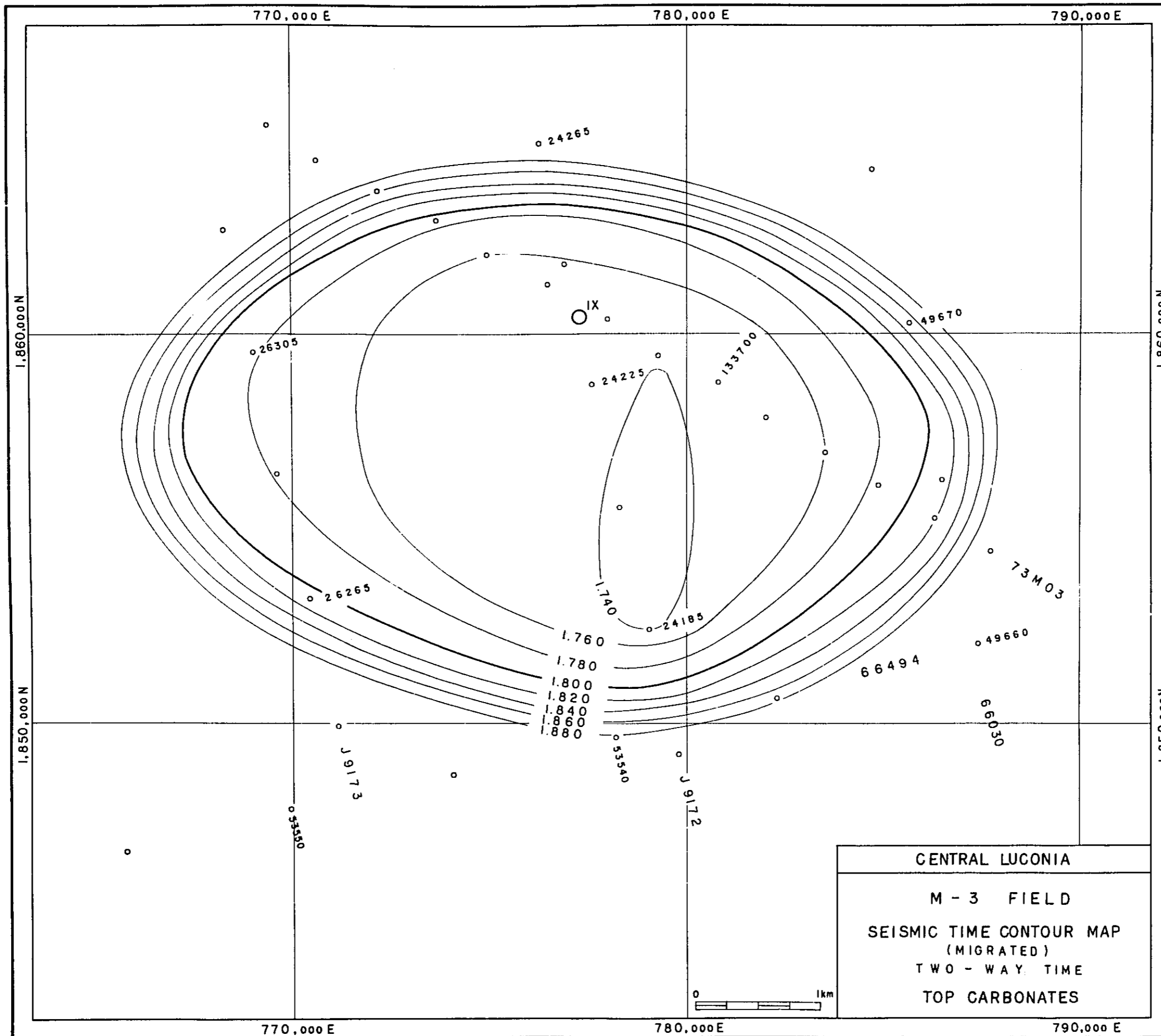


Fig. 12-1-25 TIME CONTOUR MAP, M-3 FIELD, TOP CARBONATES
Vol. IV

Fig. 12-1-26

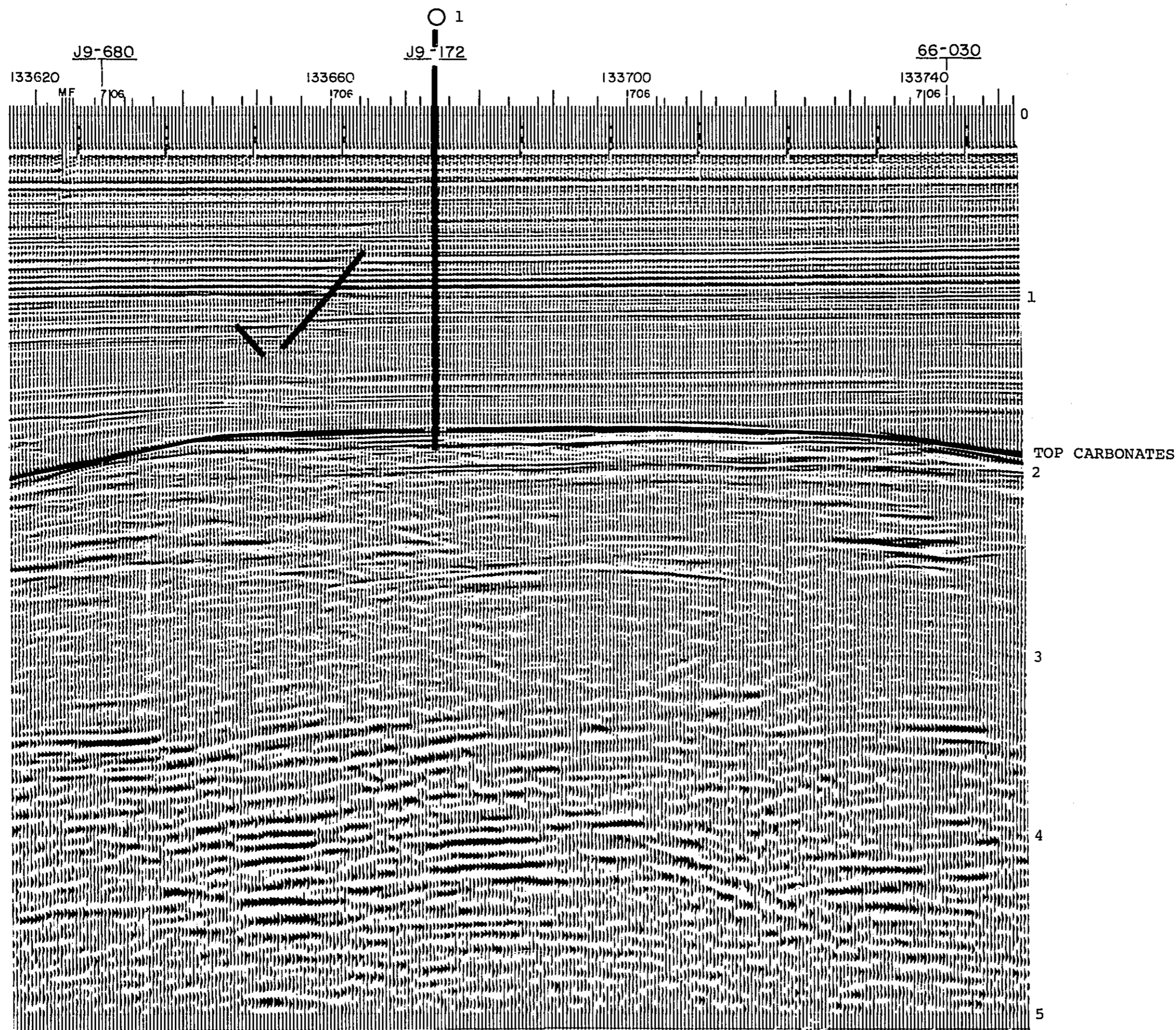


Fig. 12-1-26 SEISMIC SECTION, M-3 FIELD, Line 73-M-03
Vol. IV

Fig. 12-1-27

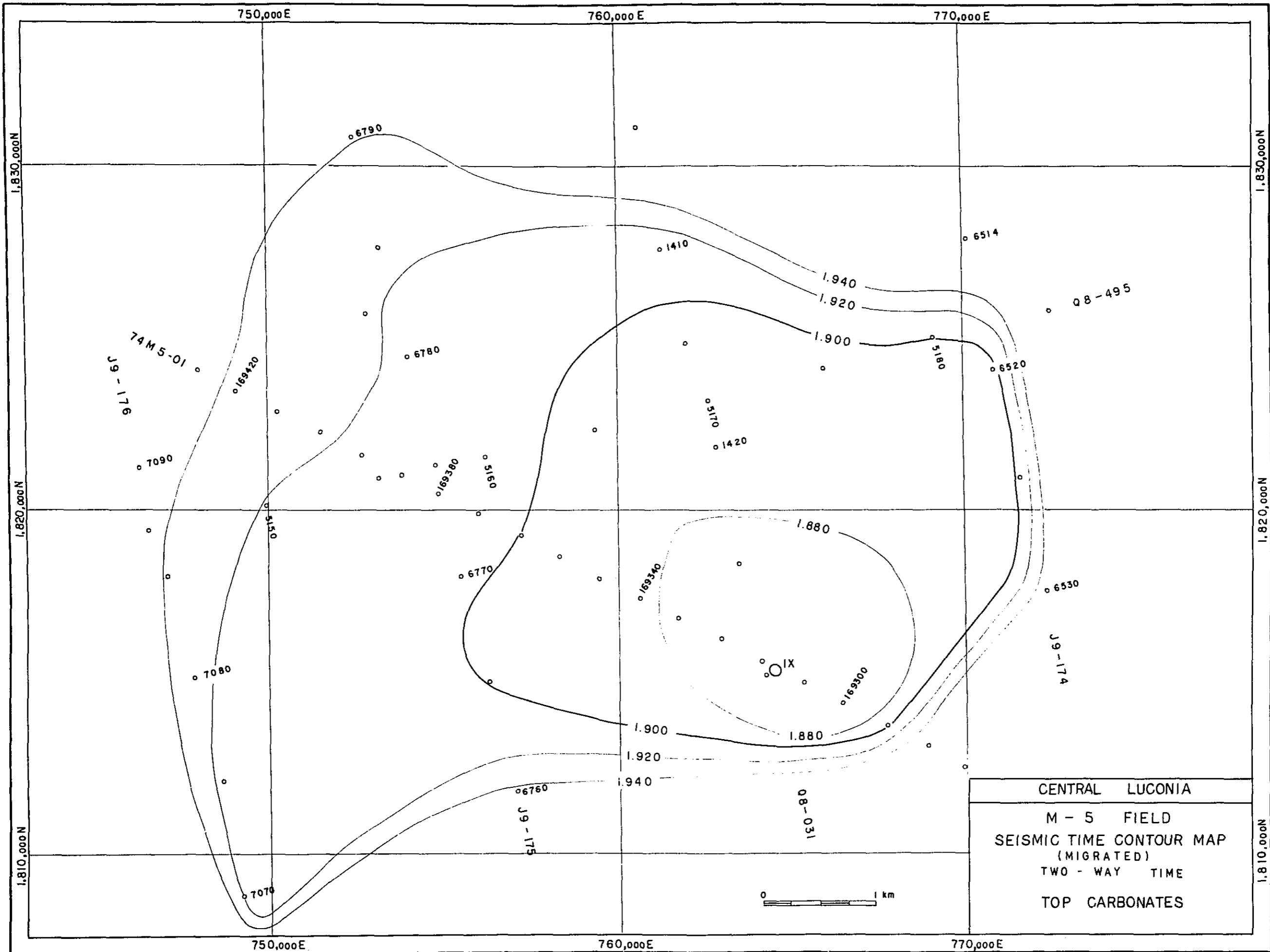


Fig. 12-1-27 TIME CONTOUR MAP, M-5 FIELD, TOP CARBONATES
Vol. IV

Fig. 12-1-28

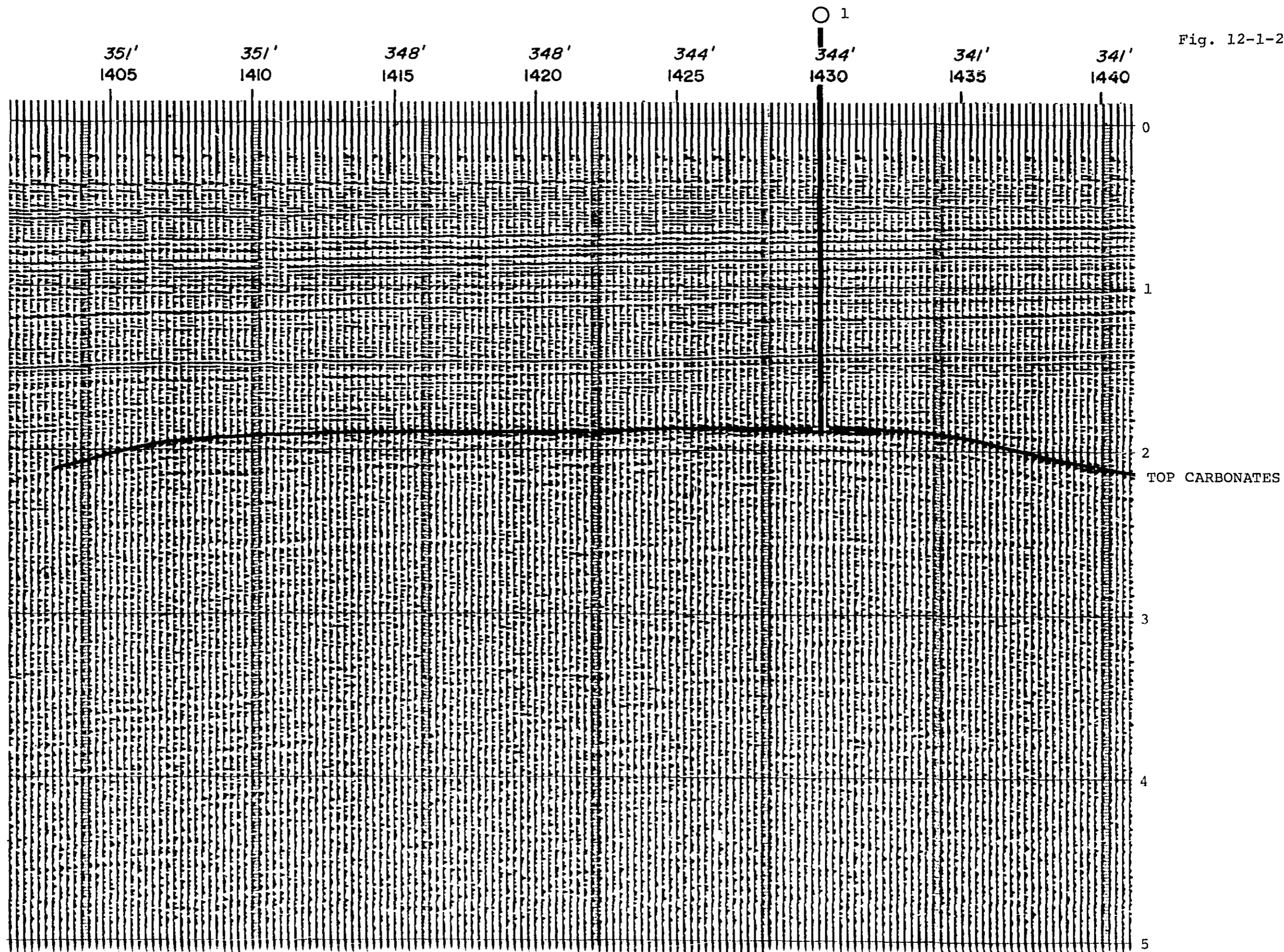


Fig. 12-1-28 SEISMIC SECTION, M-5 FIELD, Line Q8-031
Vol. IV

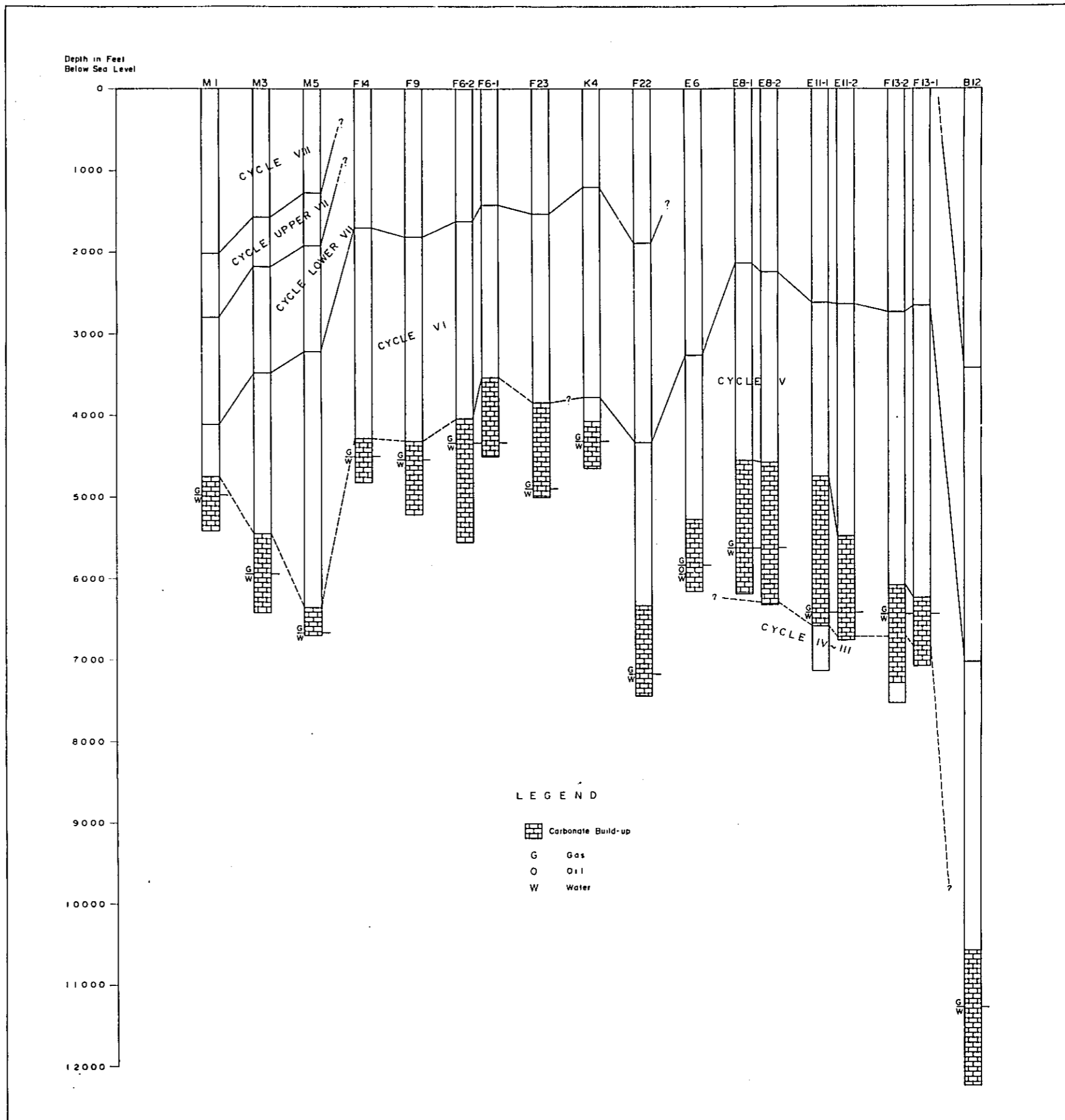


Fig. 12-2-1
Vol. IV

CARBONATE BUILDUP DEVELOPMENT AND SEDIMENTARY CYCLES
IN CENTRAL LUCONIA FIELD

Fig. 12-2-2

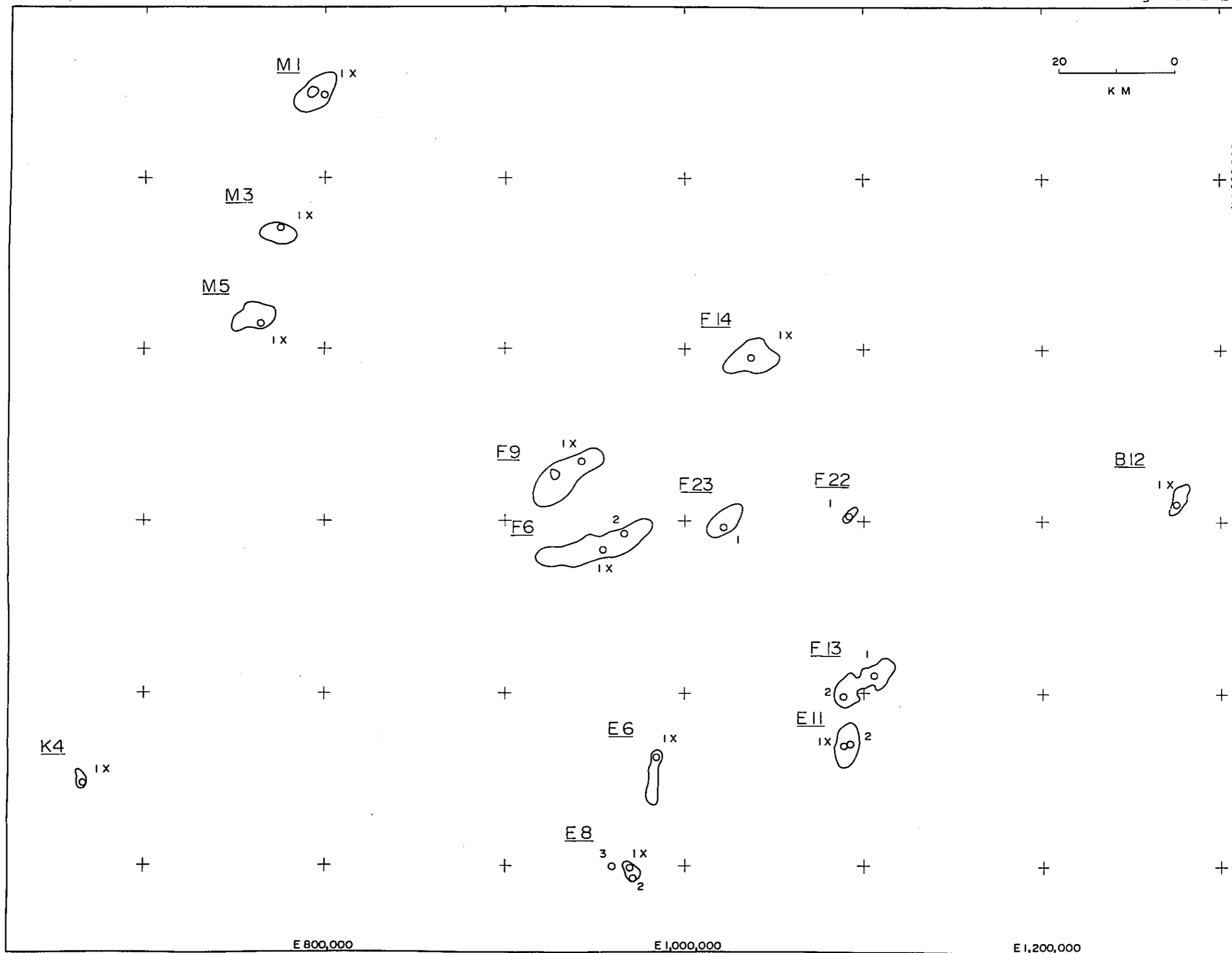


Fig. 12-2-2 MAP SHOWING LOCATION AND AREAL SIZE OF CENTRAL
Vol. IV LUCONIA FIELD

CENTRAL LUCONIA B-12

STRUCTURE CONT. MAP, TOP CARBONATES

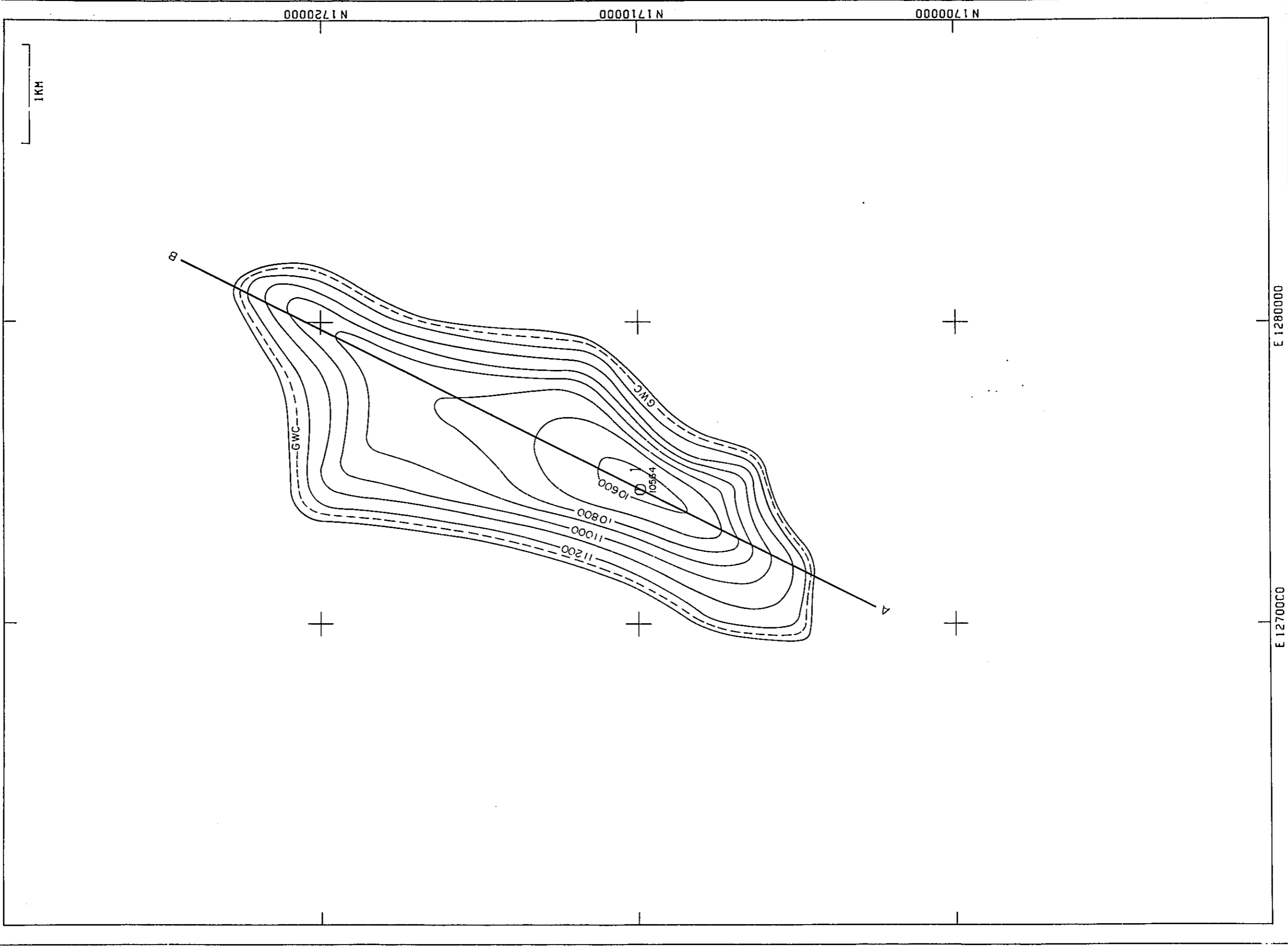


Fig. 12-2-3 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA
Vol. IV B12, TOP CARBONATES

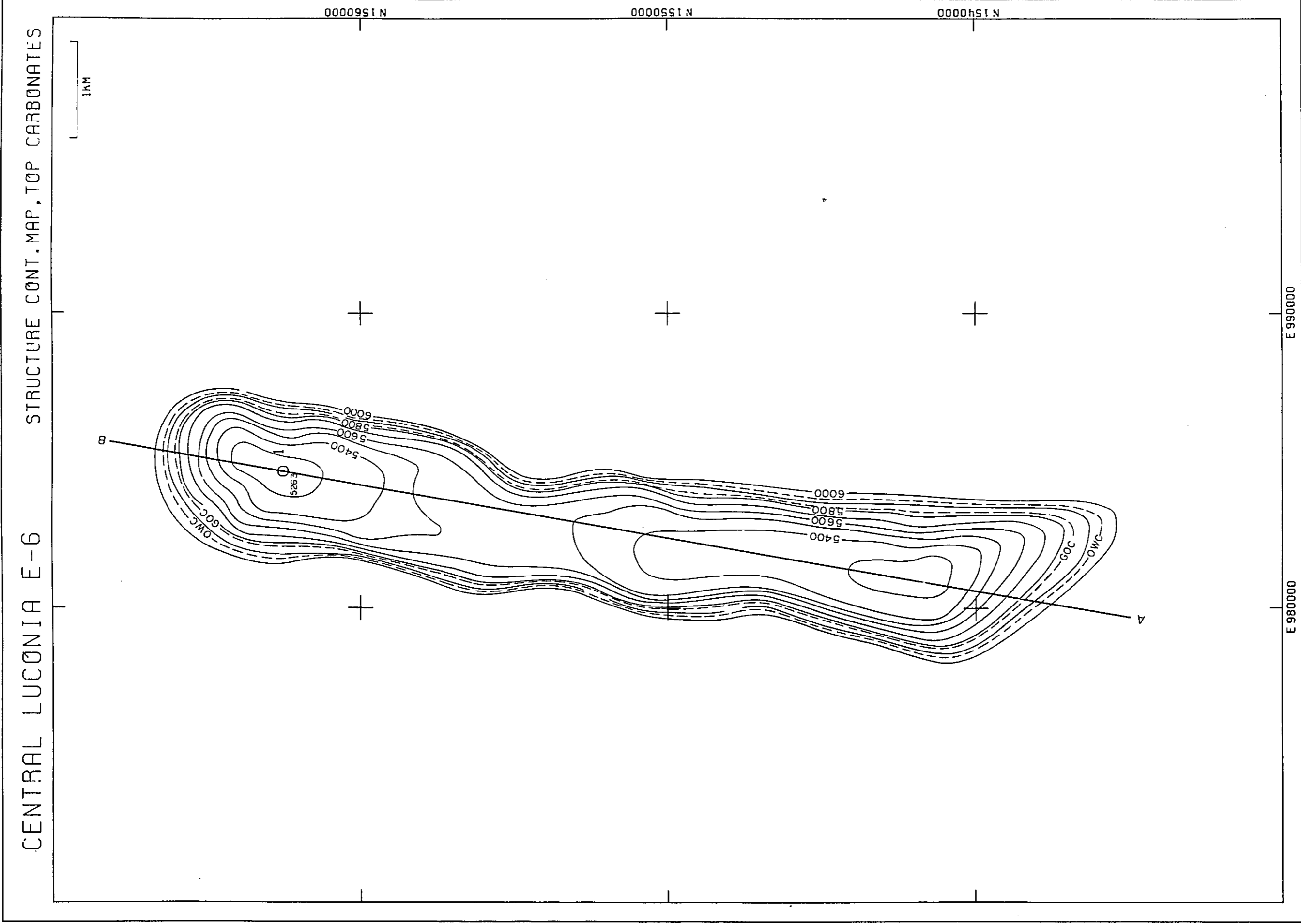


Fig. 12-2-4 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA
 Vol. IV E6, TOP CARBONATES

CENTRAL LUCONIA E-8 STRUCTURE CONT. MAP. TOP CARBONATES

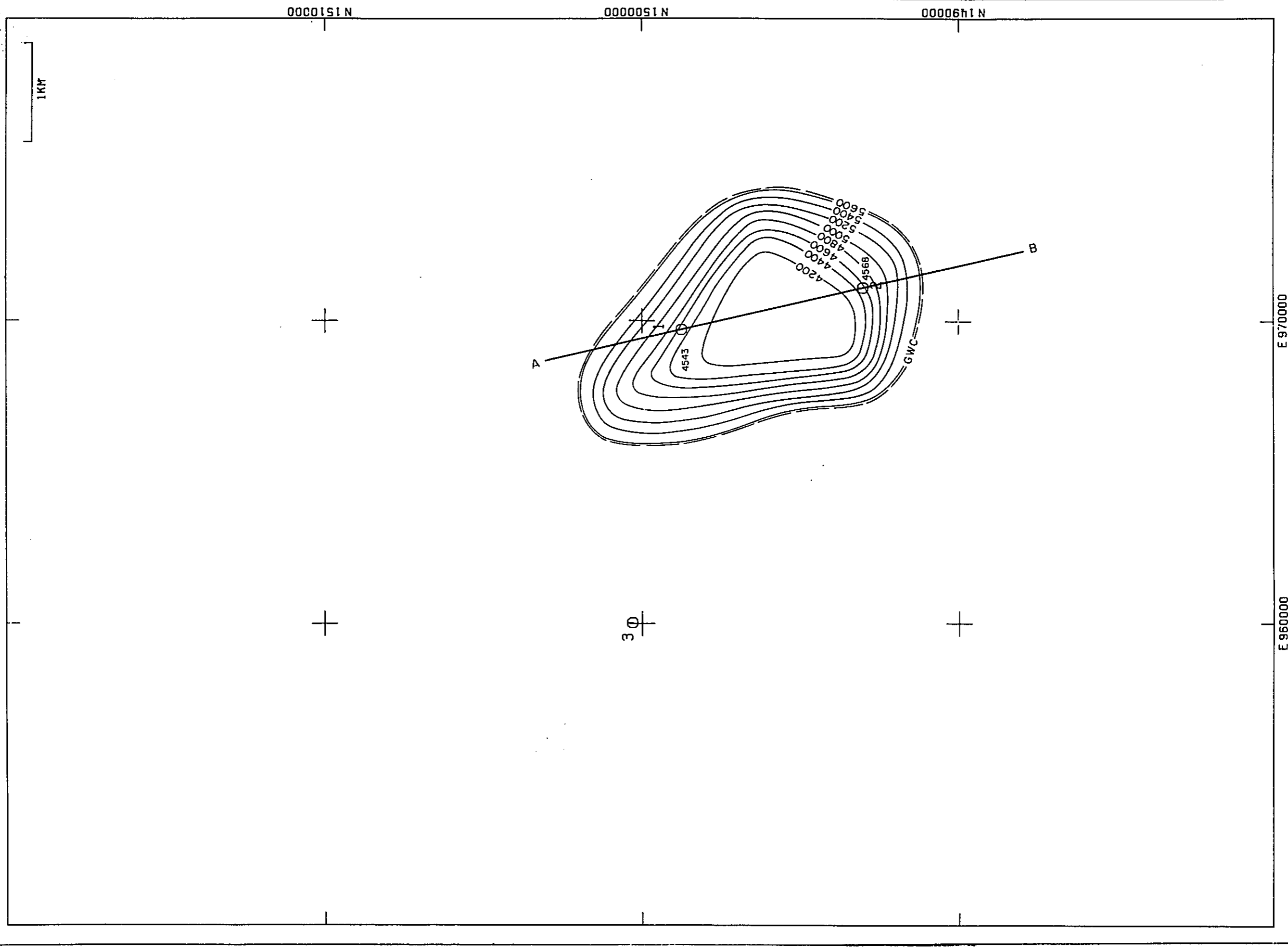


Fig. 12-2-5 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA
Vol. IV E8, TOP CARBONATES

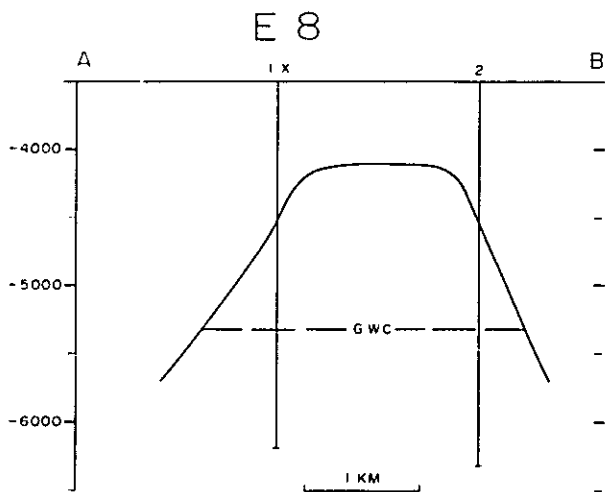
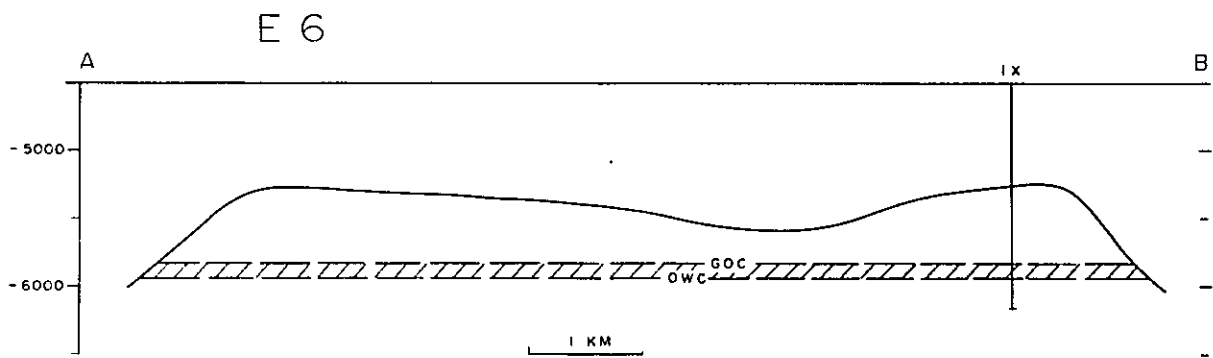
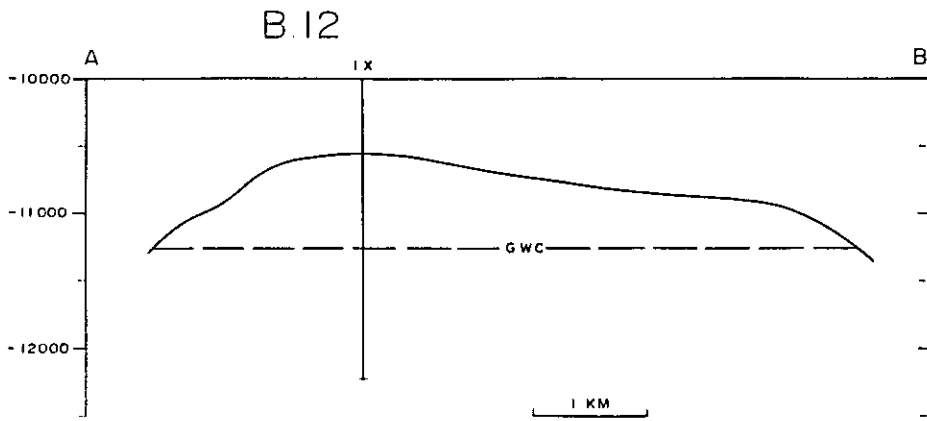


Fig. 12-2-6 STRUCTURAL CROSS-SECTION, CENTRAL LUCONIA B12, E6
 Vol. IV AND E8

CENTRAL LUCONIA E-11

STRUCTURE CONT. MAP, TOP CARBONATES

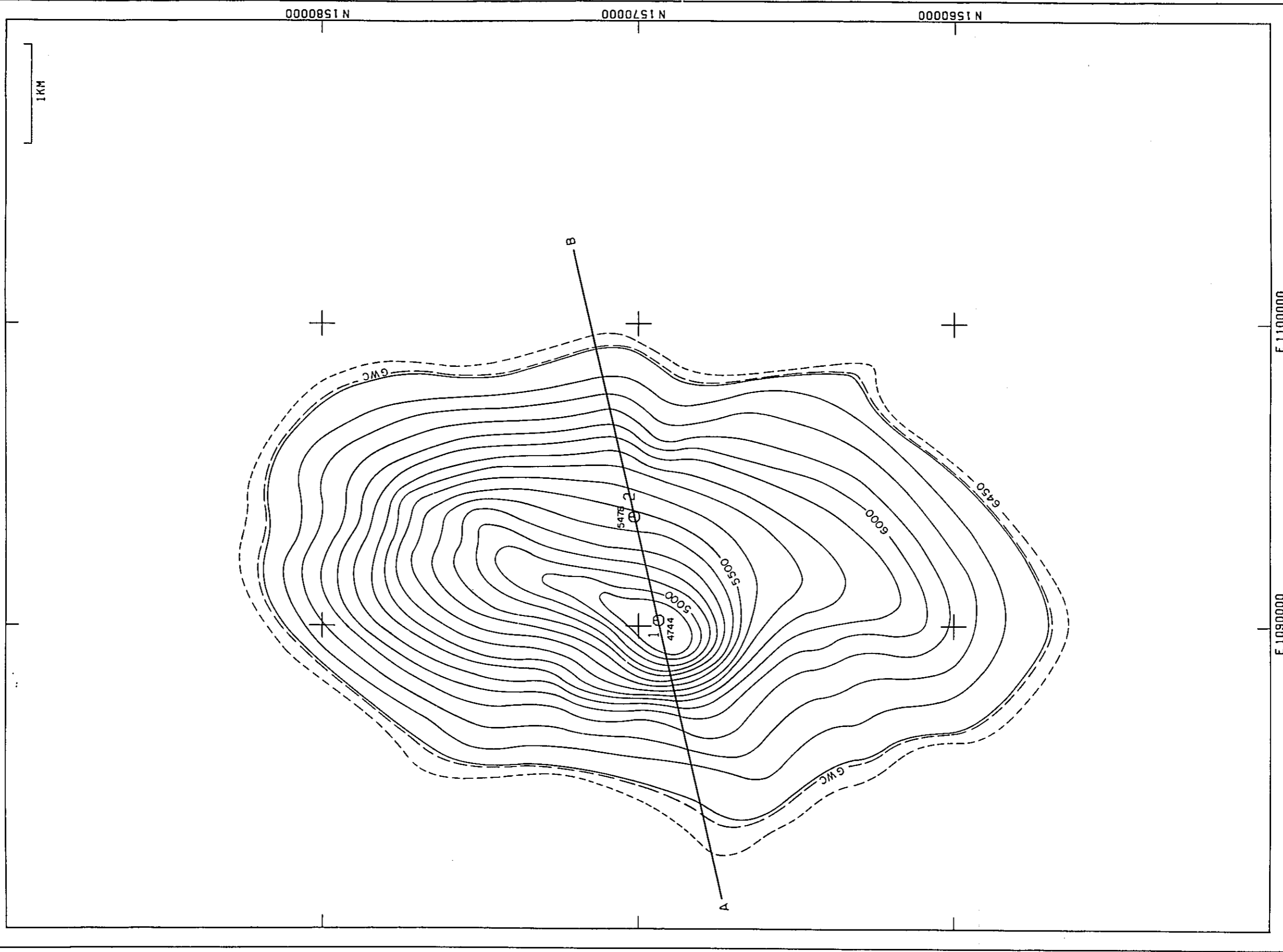


Fig. 12-2-7 STRUCTURE CONTOUR MAP CENTRAL LUCONIA
VOL. IV E11, TOP CARBONATES

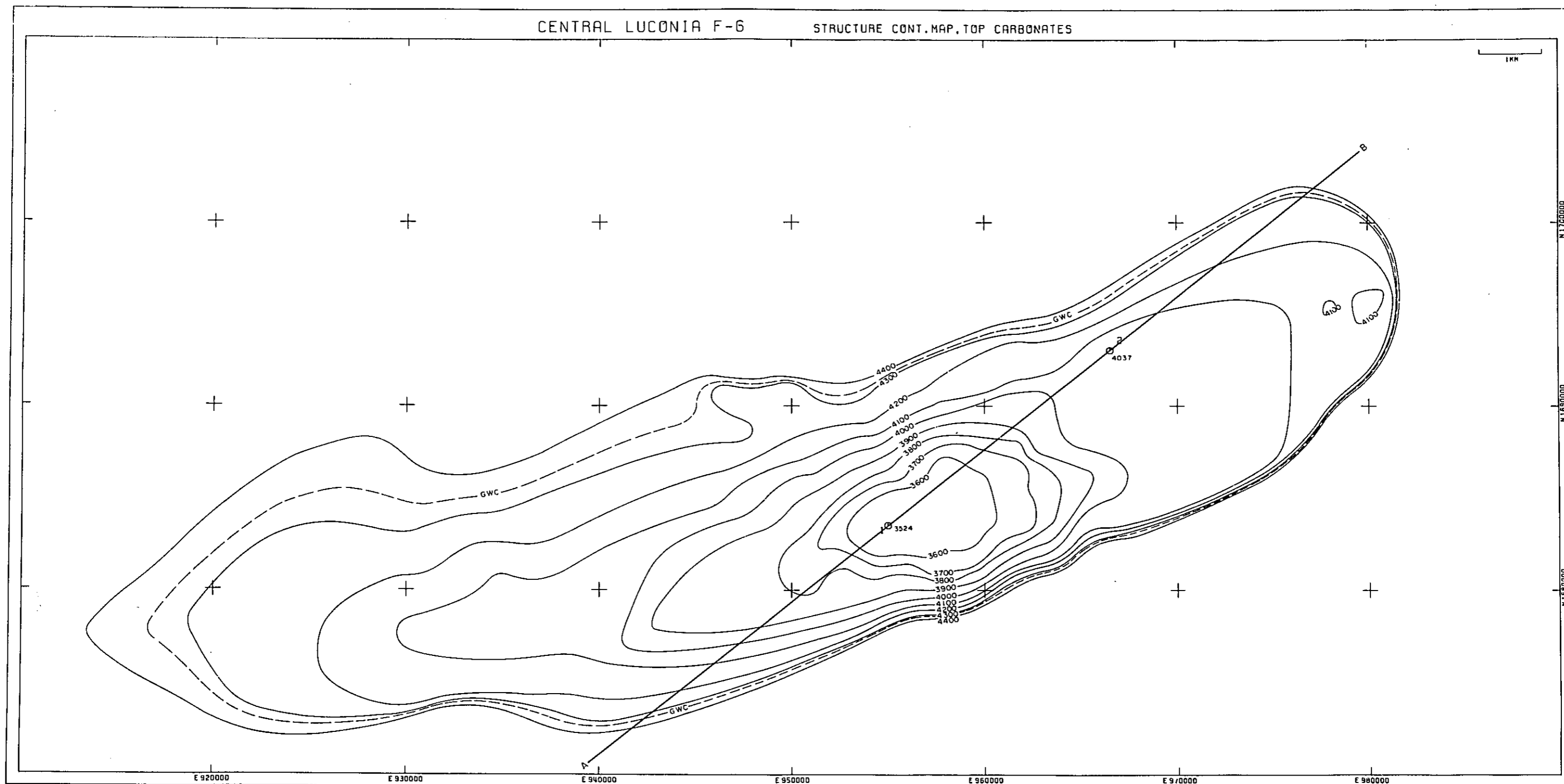
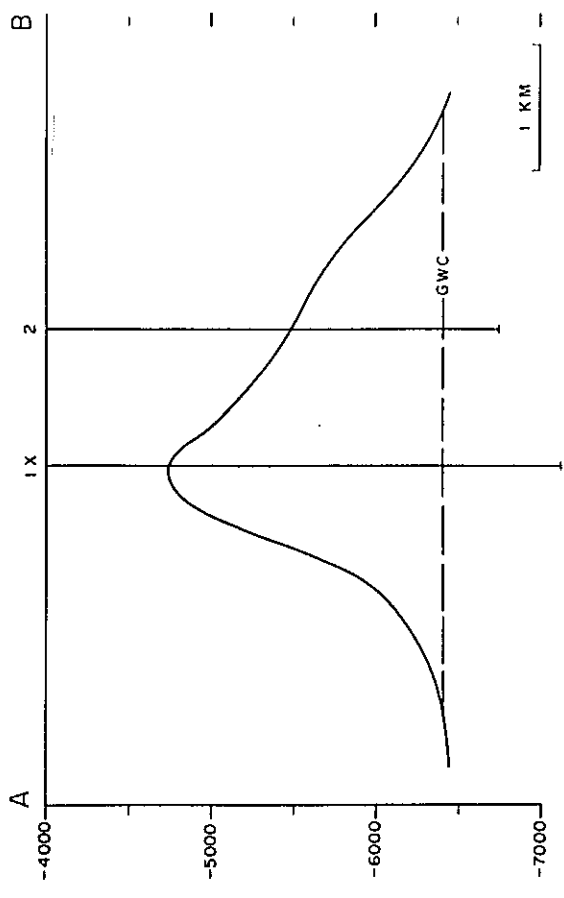


Fig. 12-2-8 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA
Vol. IV F6, TOP CARBONATES

E 11



F 6

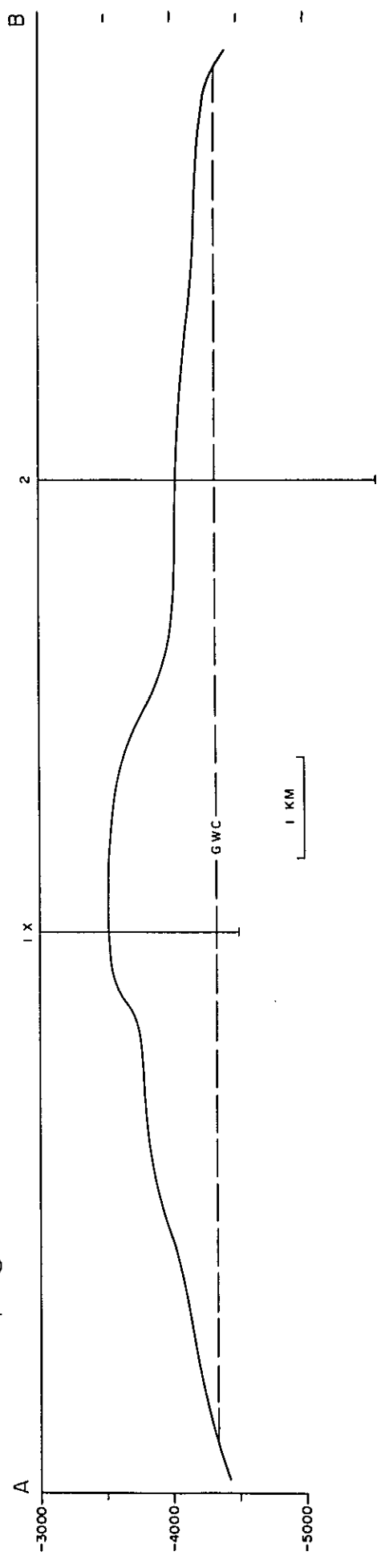


Fig. 12-2-9 STRUCTURAL CROSS-SECTION, CENTRAL LUCONIA E11 AND F6
Vol. IV

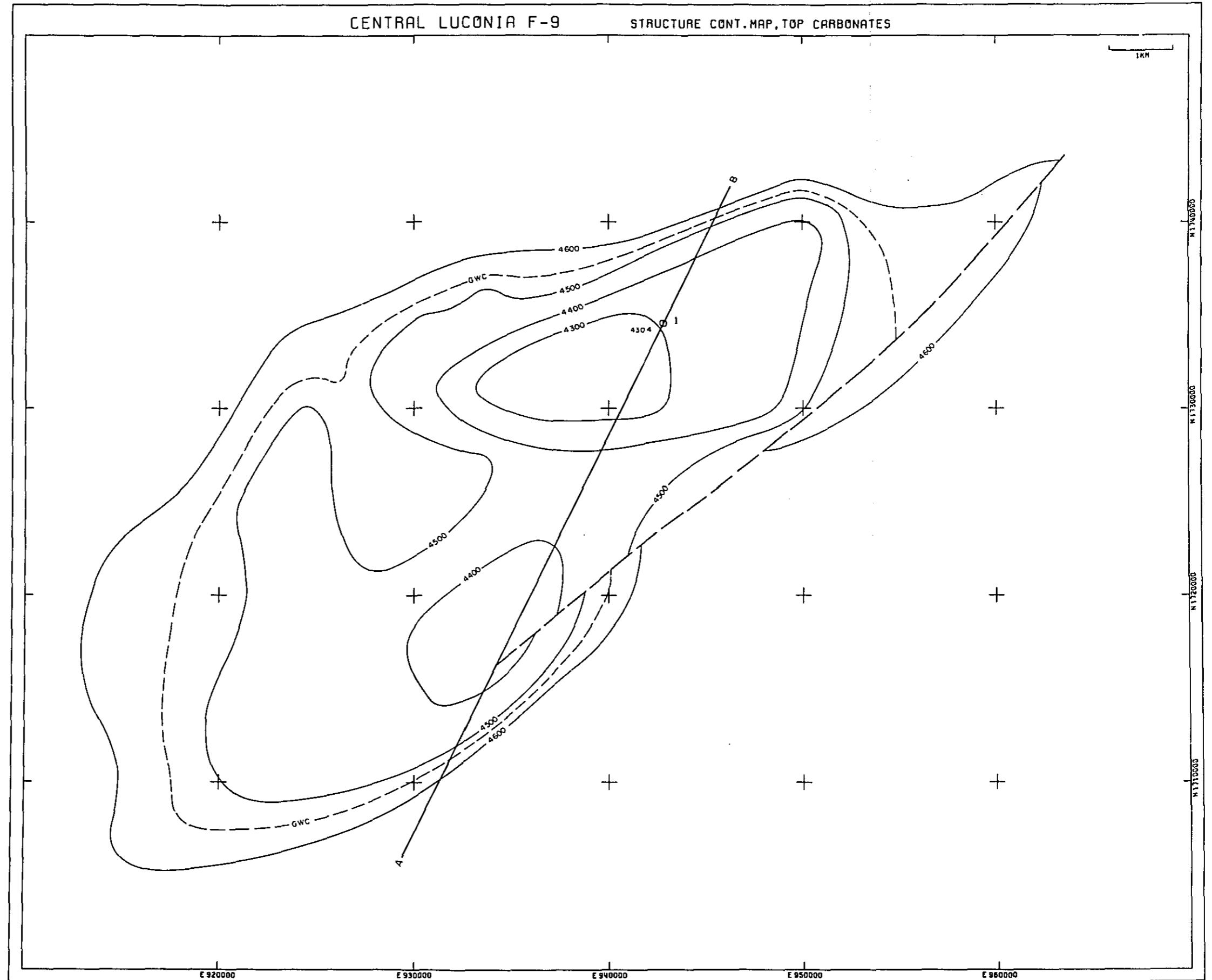


Fig. 12-2-10 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA F9, TOP
Vol. IV CARBONATES

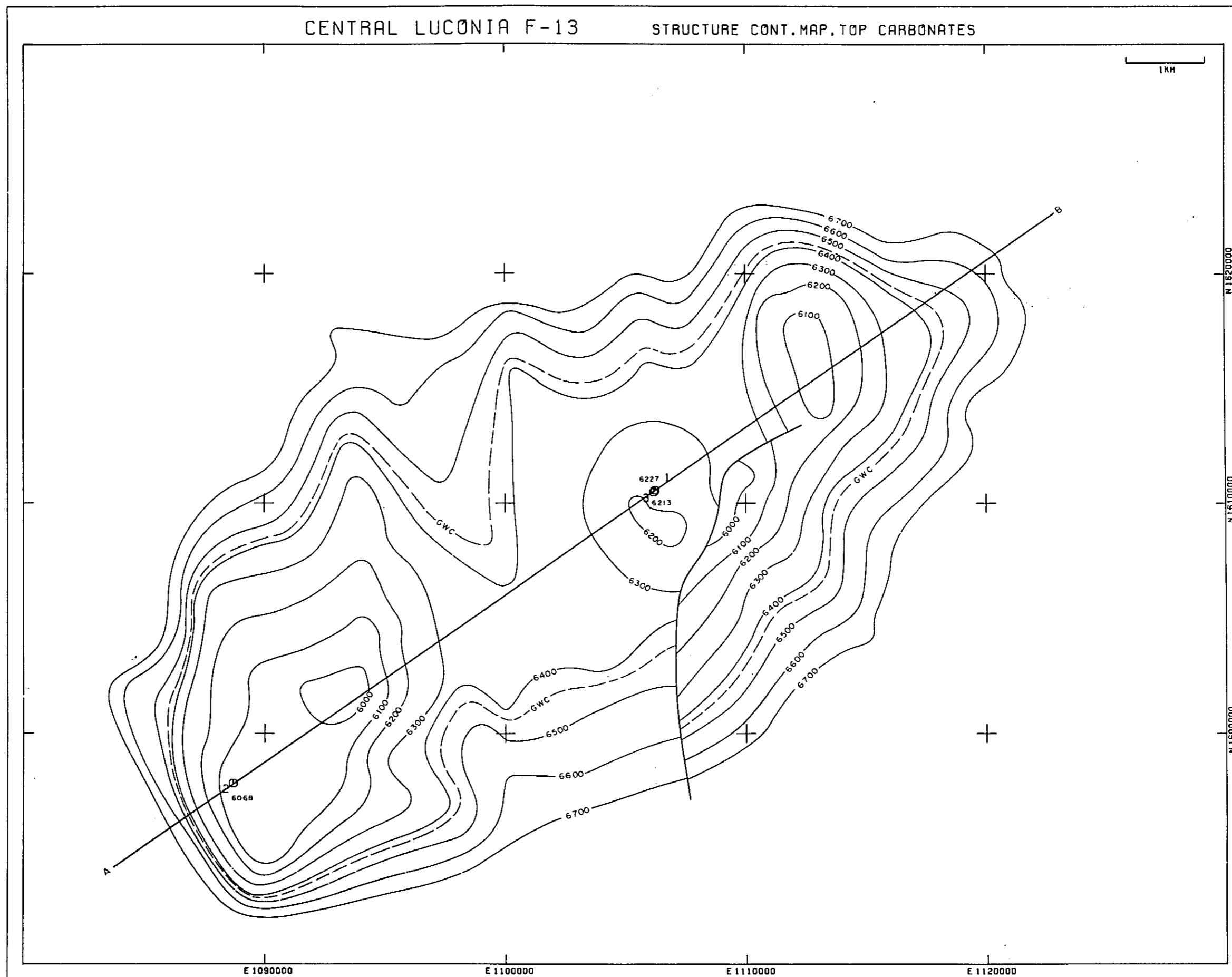
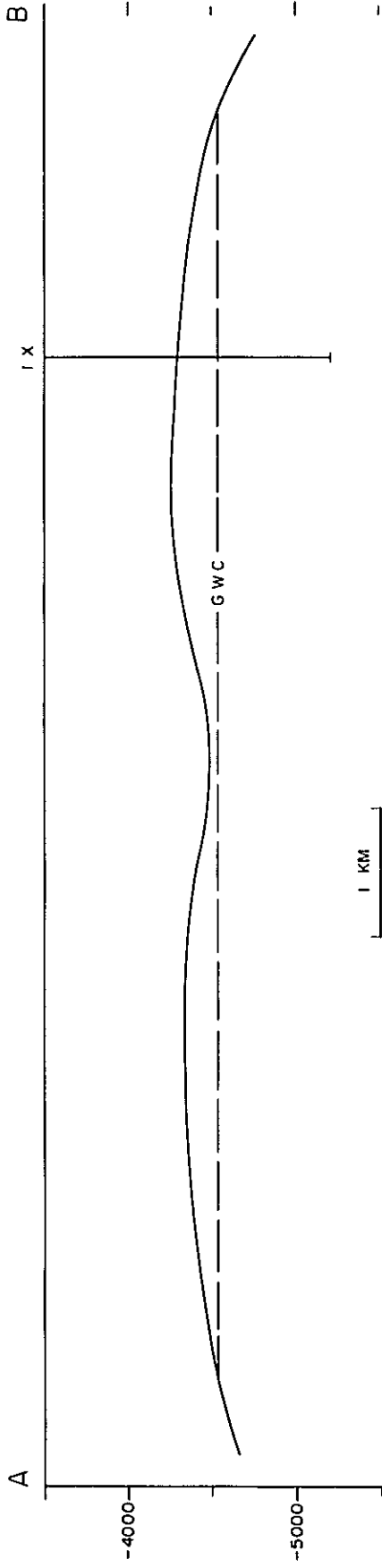


Fig. 12-2-11 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA F13, TOP
Vol. IV CARBONATES

F.9



F13

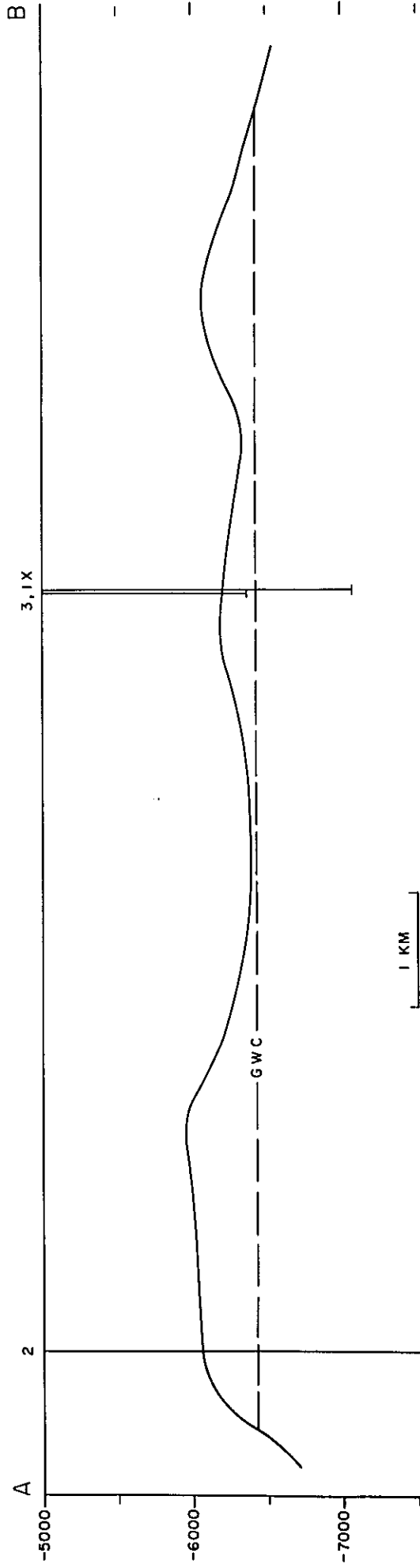


Fig. 12-2-12 STRUCTURAL CROSS-SECTION, CENTRAL LUCONIA F9 AND F13
Vol. IV

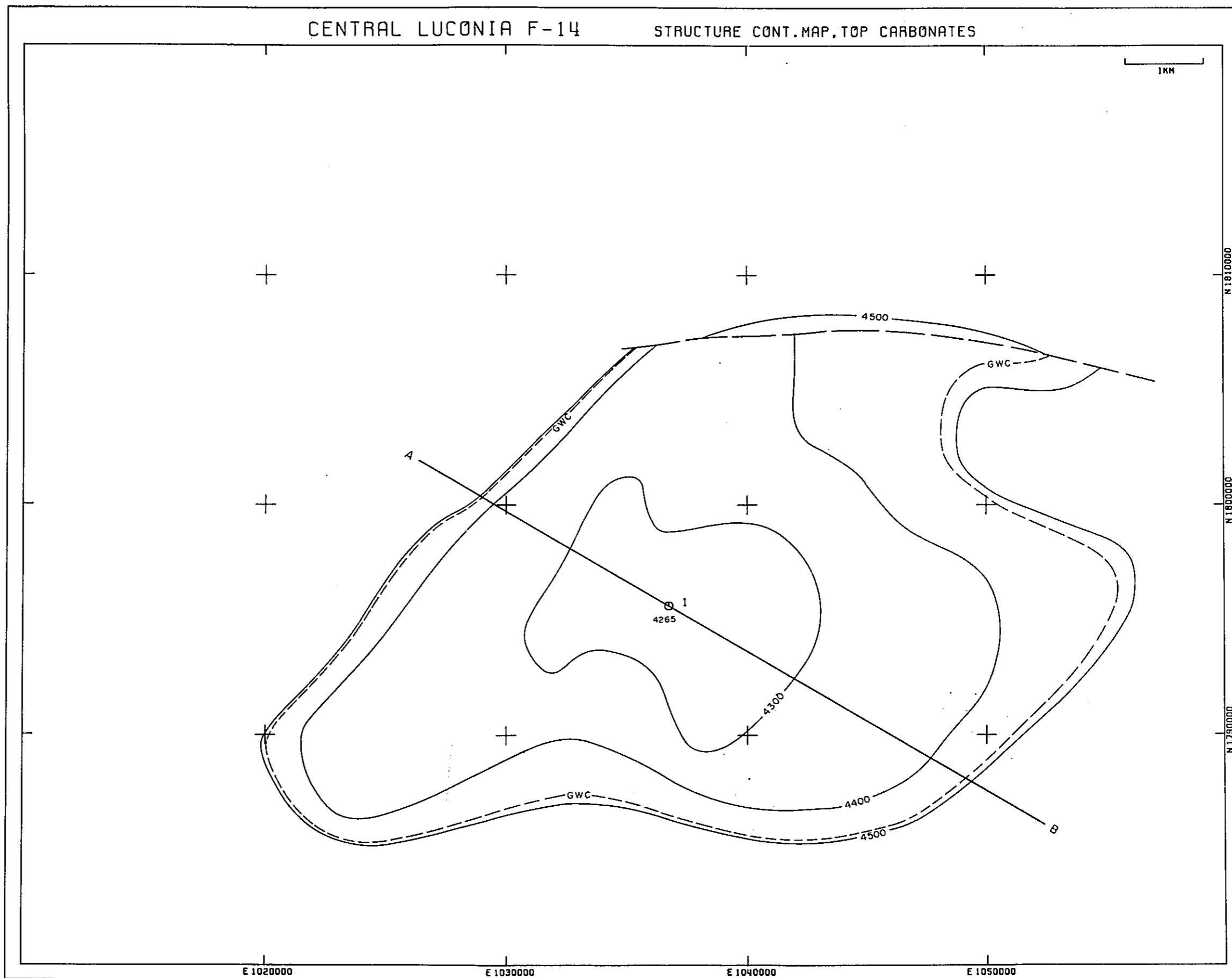


Fig. 12-2-13 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA F14, TOP
Vol. IV CARBONATES

CENTRAL LUCONIA F-22

STRUCTURE CONT. MAP. TOP CARBONATES

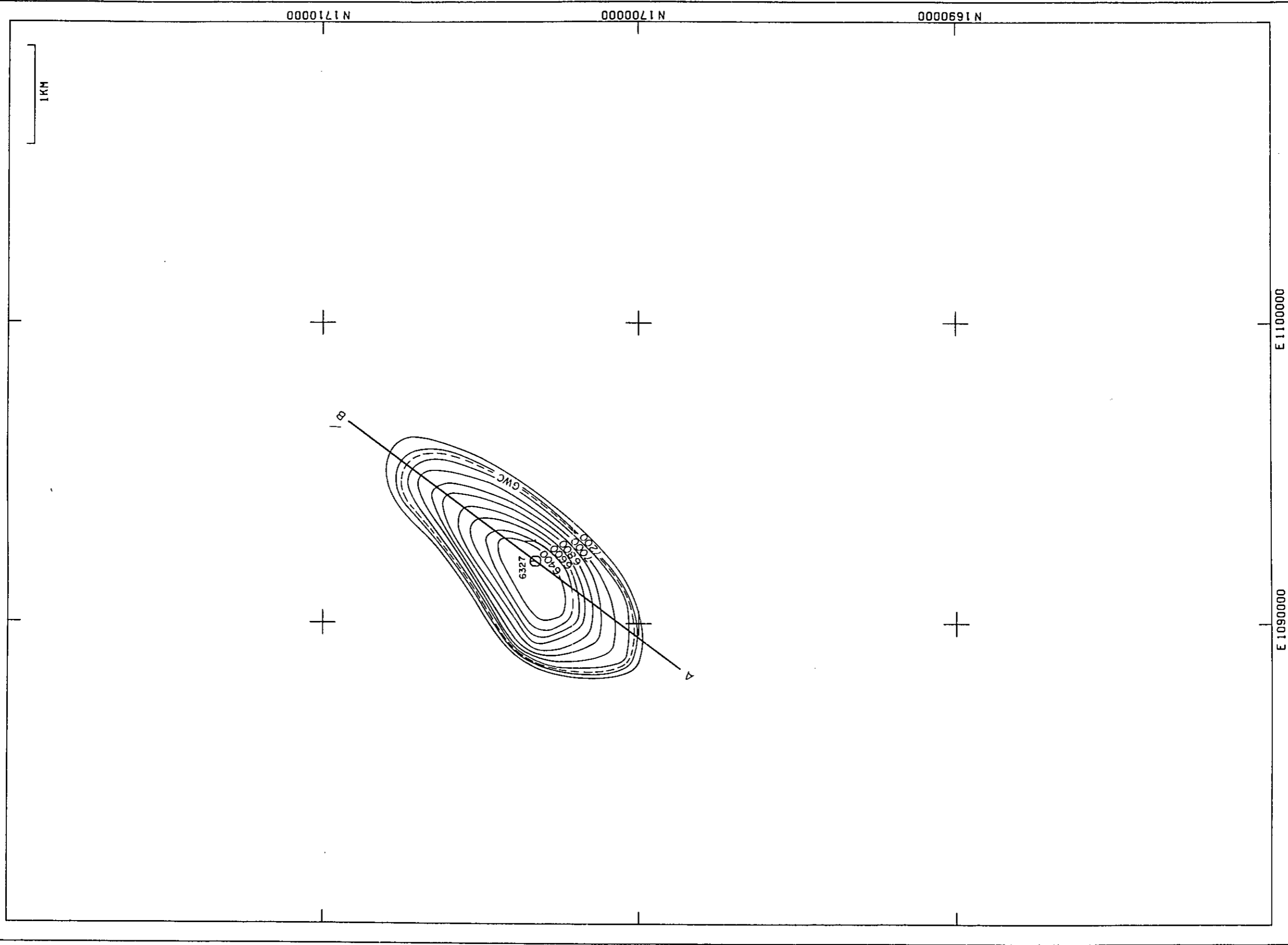


Fig. 12-2-14 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA F22, TOP
Vol. IV CARBONATES

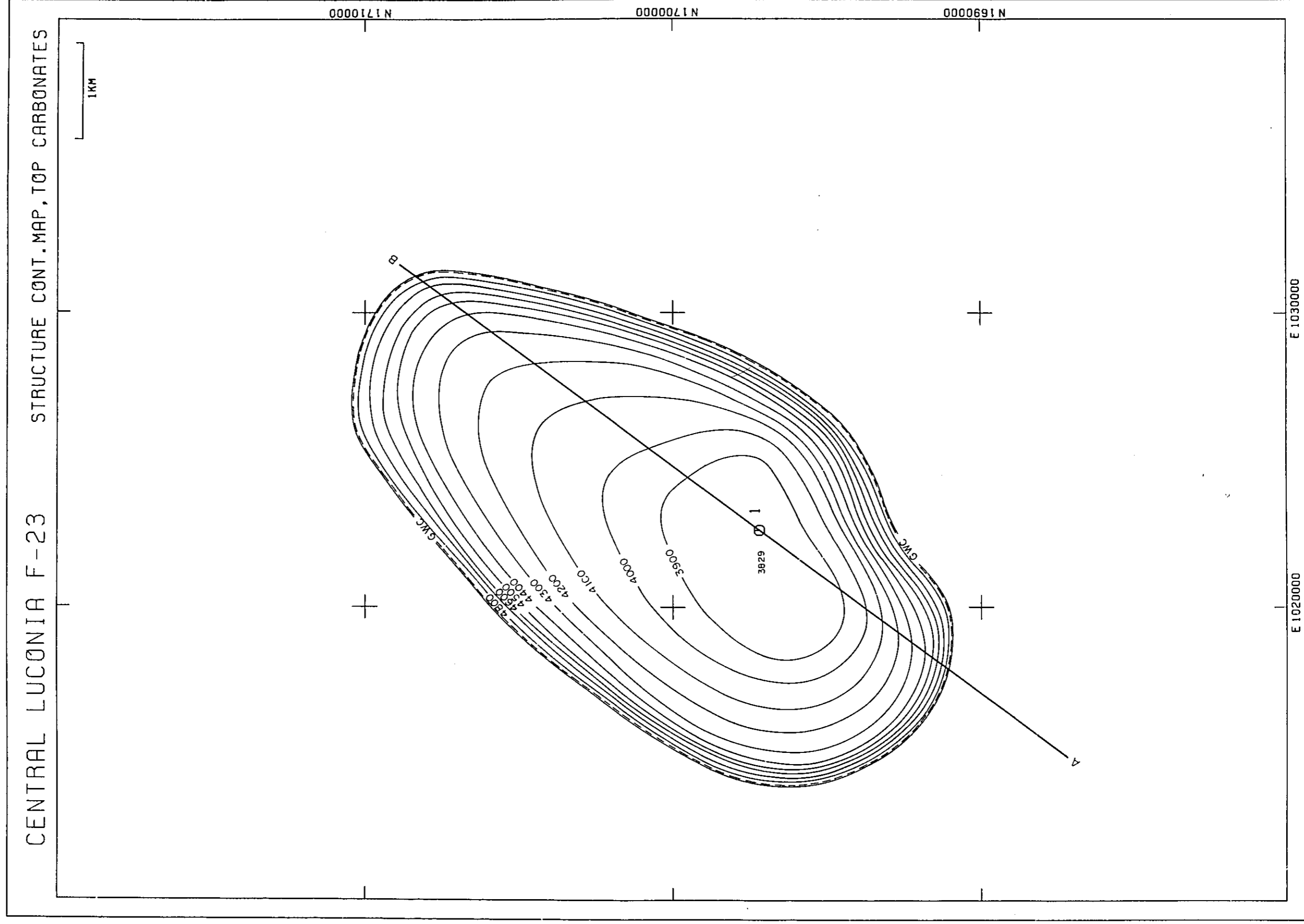


Fig. 12-2-15 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA F23, TOP
Vol. IV CARBONATES

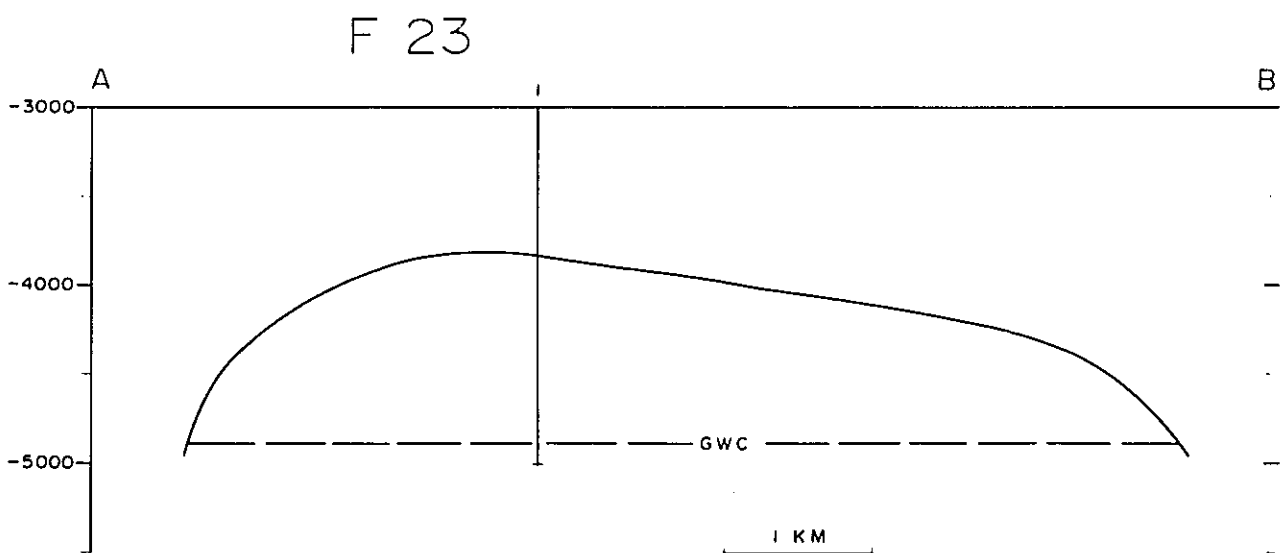
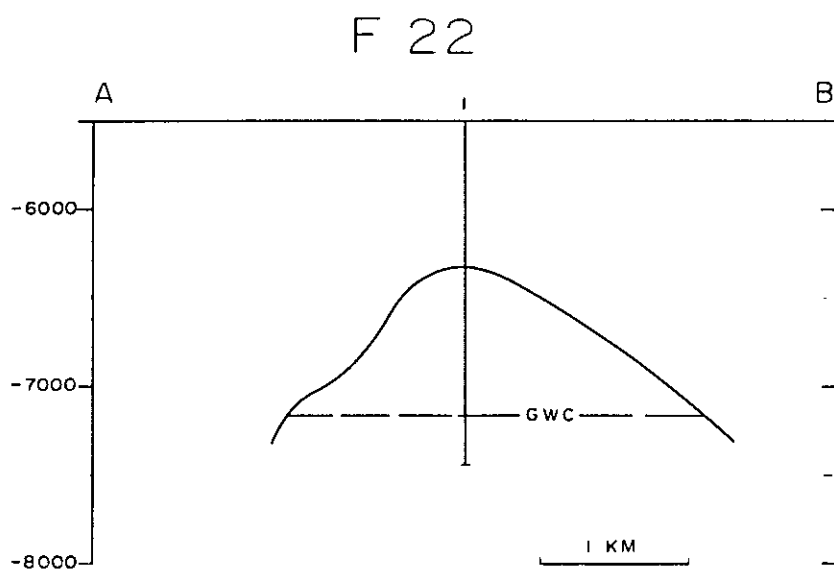
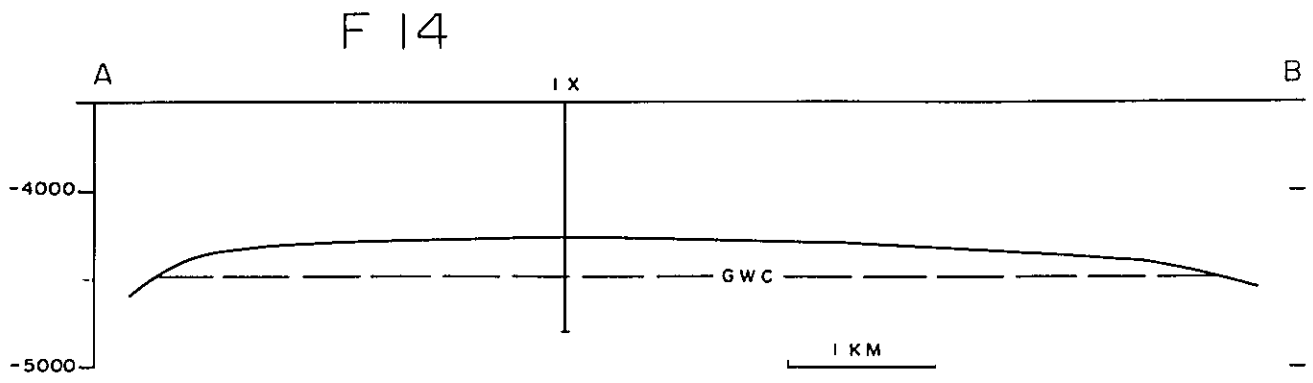


Fig. 12-2-16 STRUCTURAL CROSS-SECTION, CENTRAL LUCONIA F14, F22
Vol. IV AND F23

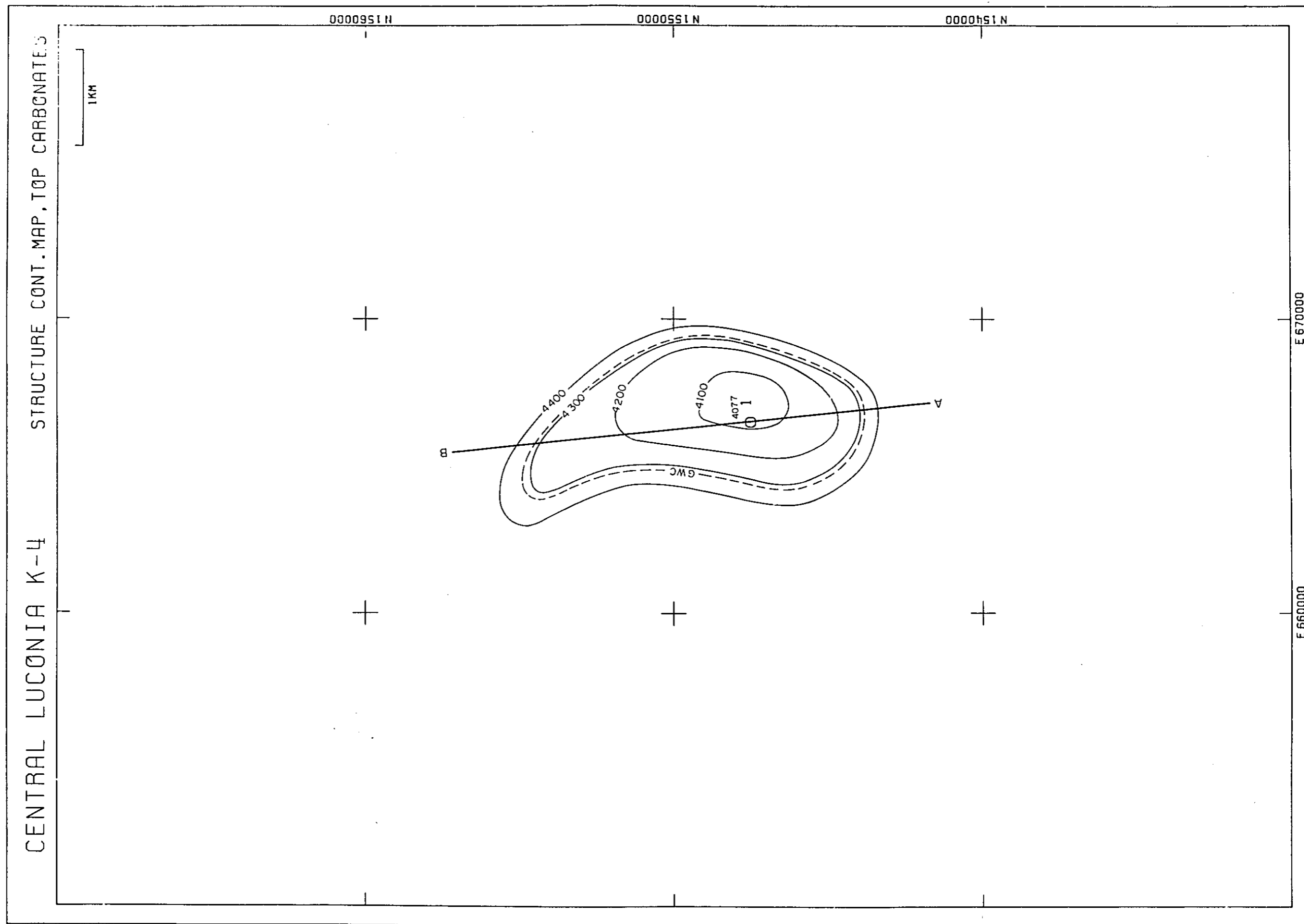


Fig. 12-2-17 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA K4, TOP
 Vol. IV CARBONATES

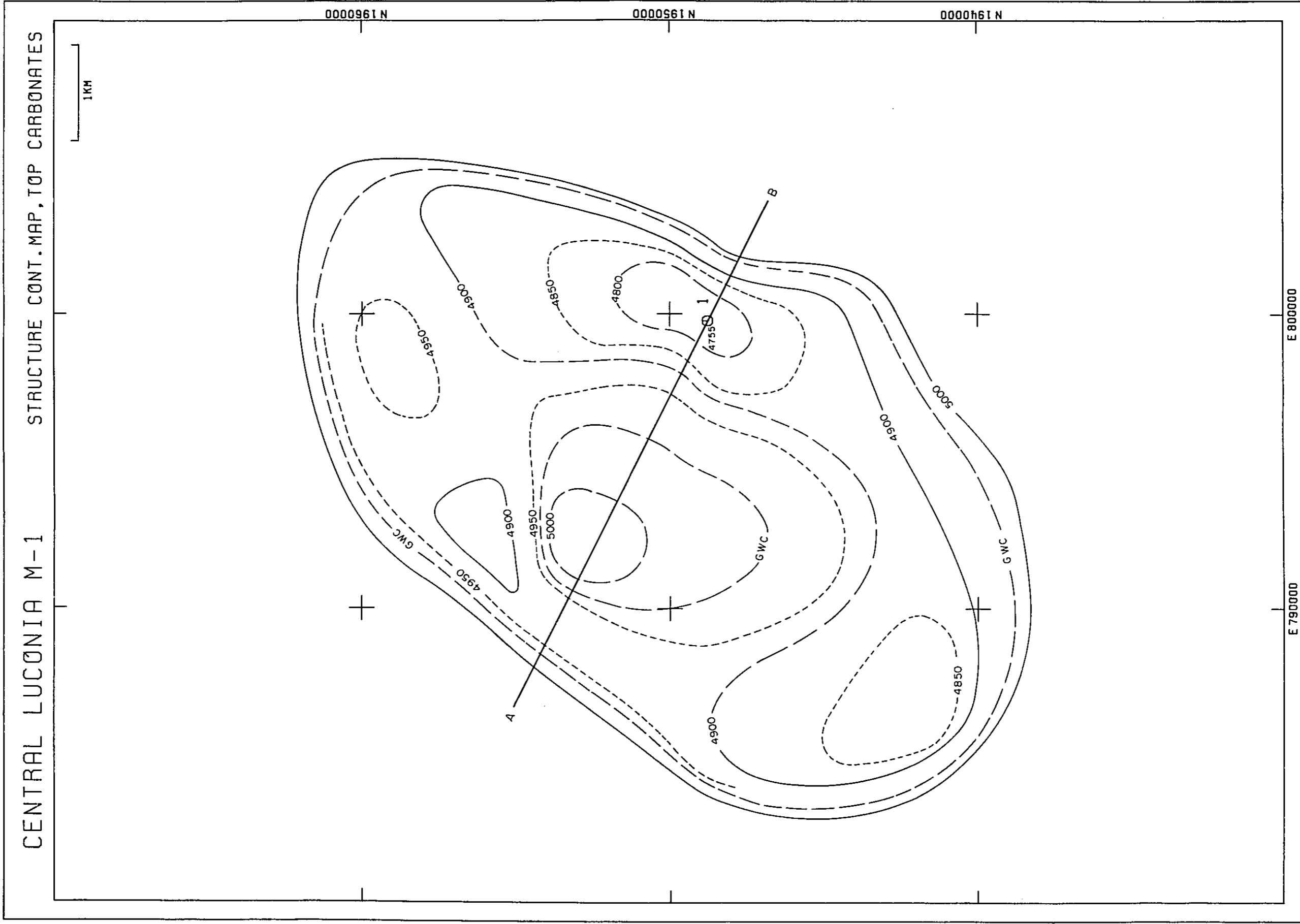


Fig. 12-2-18 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA M1, TOP
VOL. IV CARBONATES

CENTRAL LUCONIA M-3 STRUCTURE CONT. MAP, TOP CARBONATES

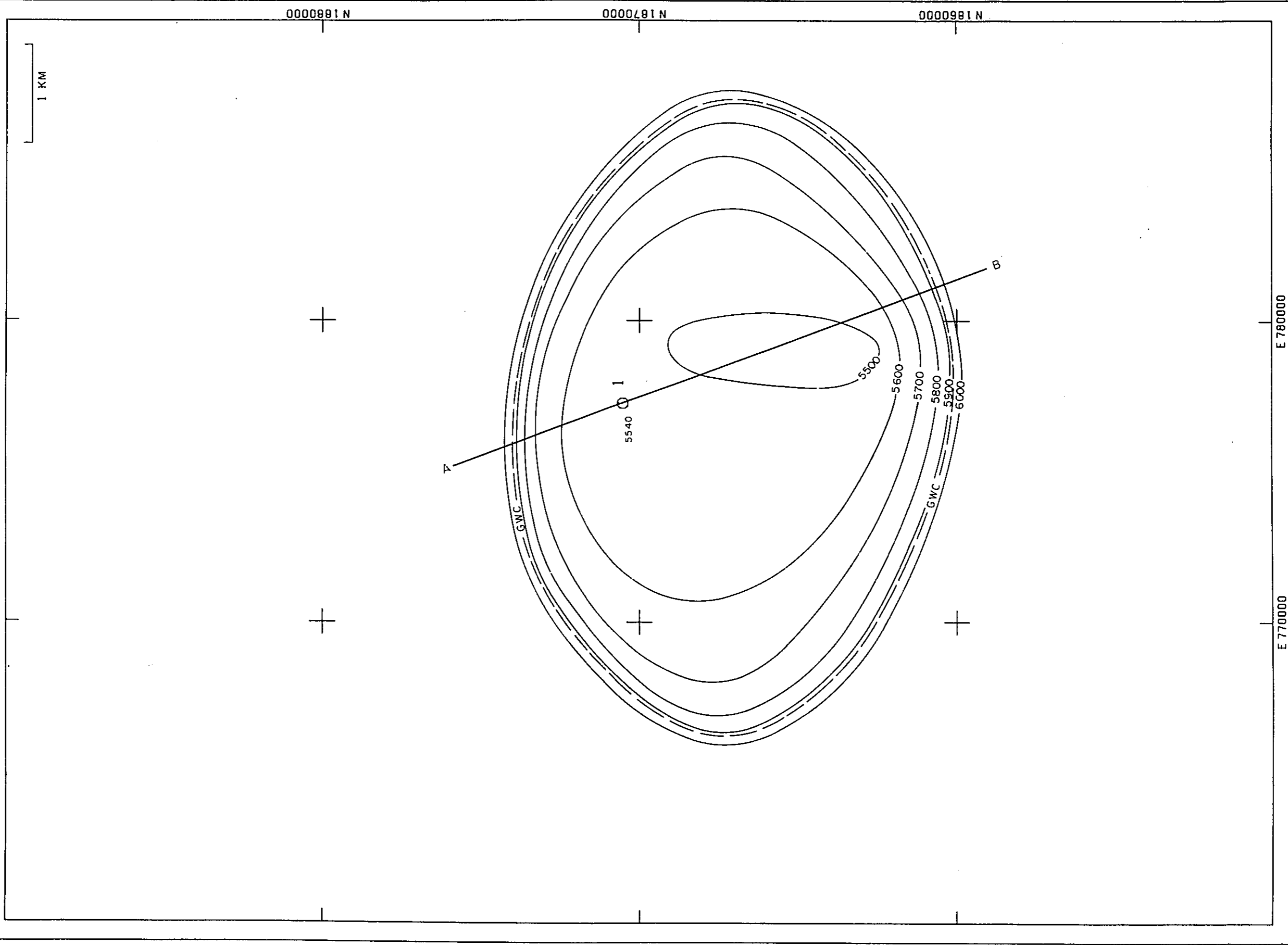


Fig. 12-2-19 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA M3, TOP CARBONATES
Vol. IV

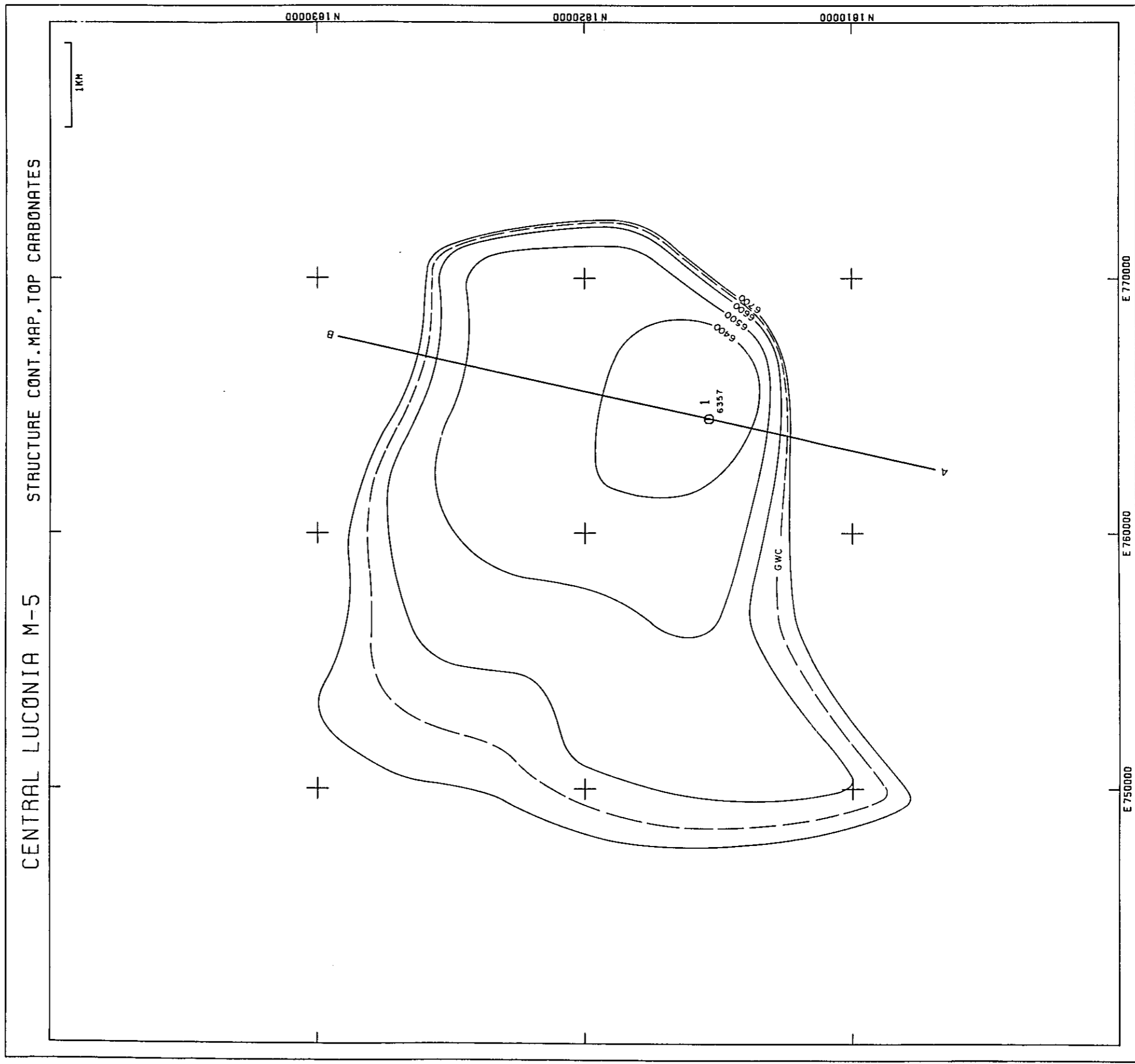


Fig. 12-2-20 STRUCTURE CONTOUR MAP, CENTRAL LUCONIA M5, TOP
VOL. IV CARBONATES

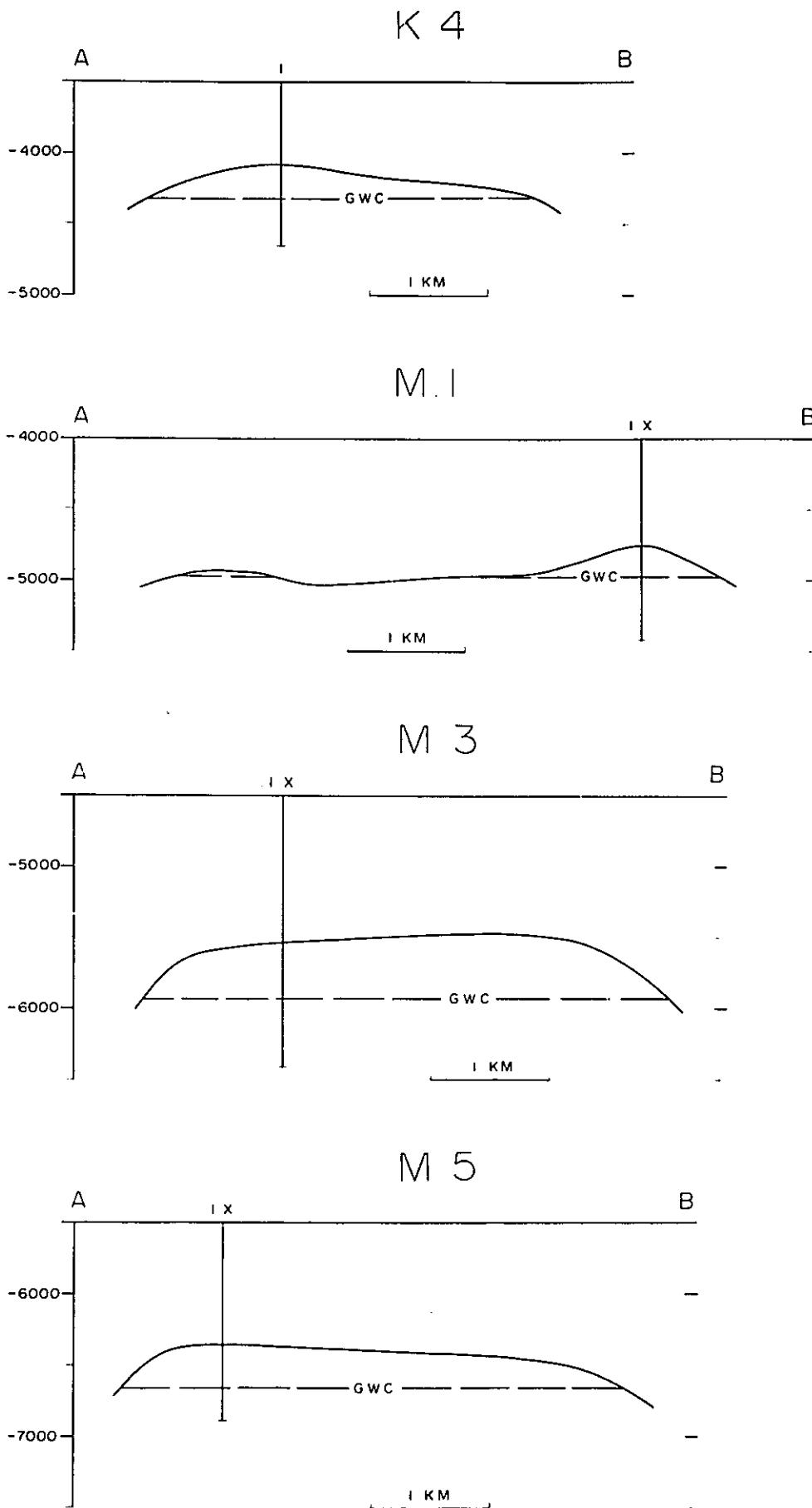


Fig. 12-2-21
Vol. IV

STRUCTURAL CROSS-SECTION, CENTRAL LUCONIA K4, M1,
M3 AND M5

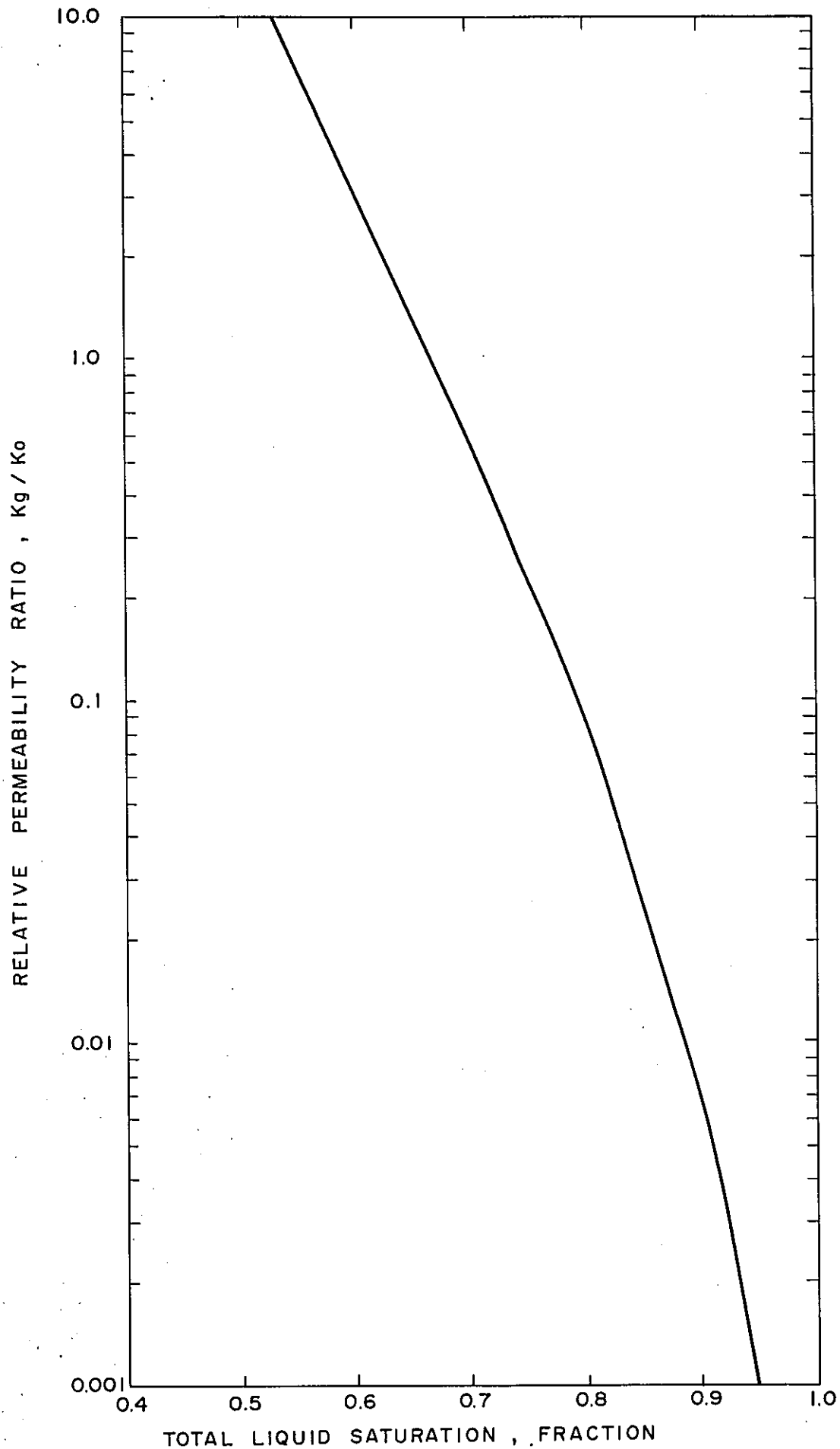


Fig. 12-3-1 GAS-OIL RELATIVE PERMEABILITY RATIO OF CENTRAL LUCONIA
 Vol. IV FIELD, E 6

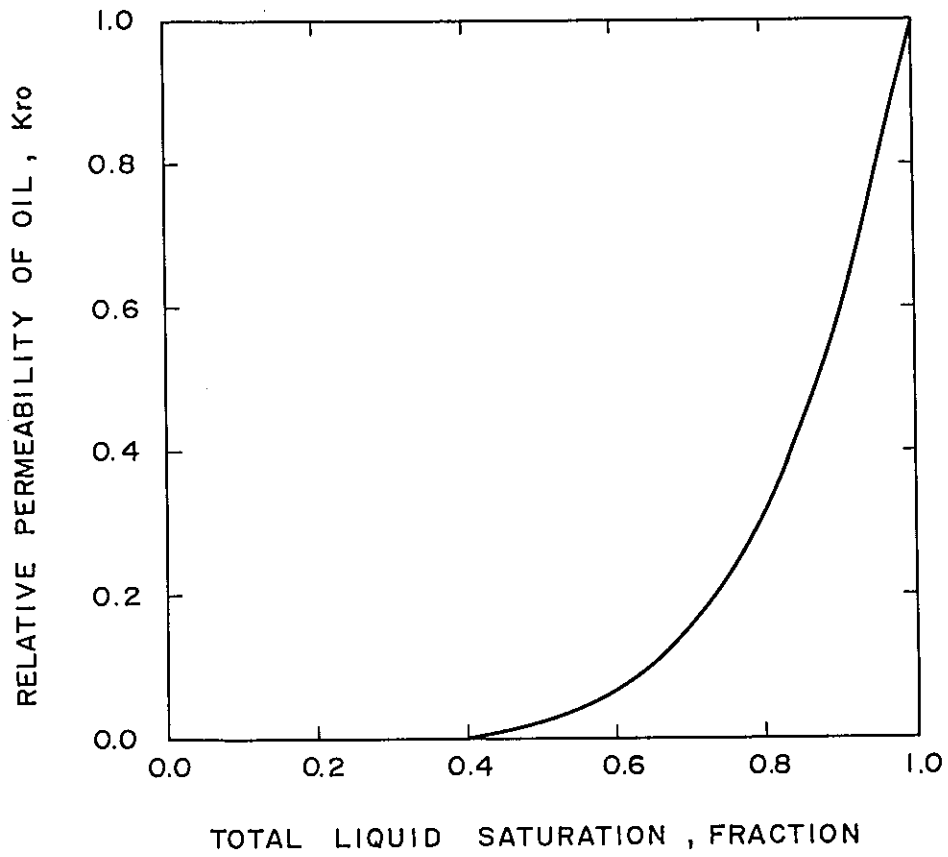


Fig. 12-3-2 OIL RELATIVE PERMEABILITY CURVE OF
Vol. IV CENTRAL LUCONIA FIELD, E 6

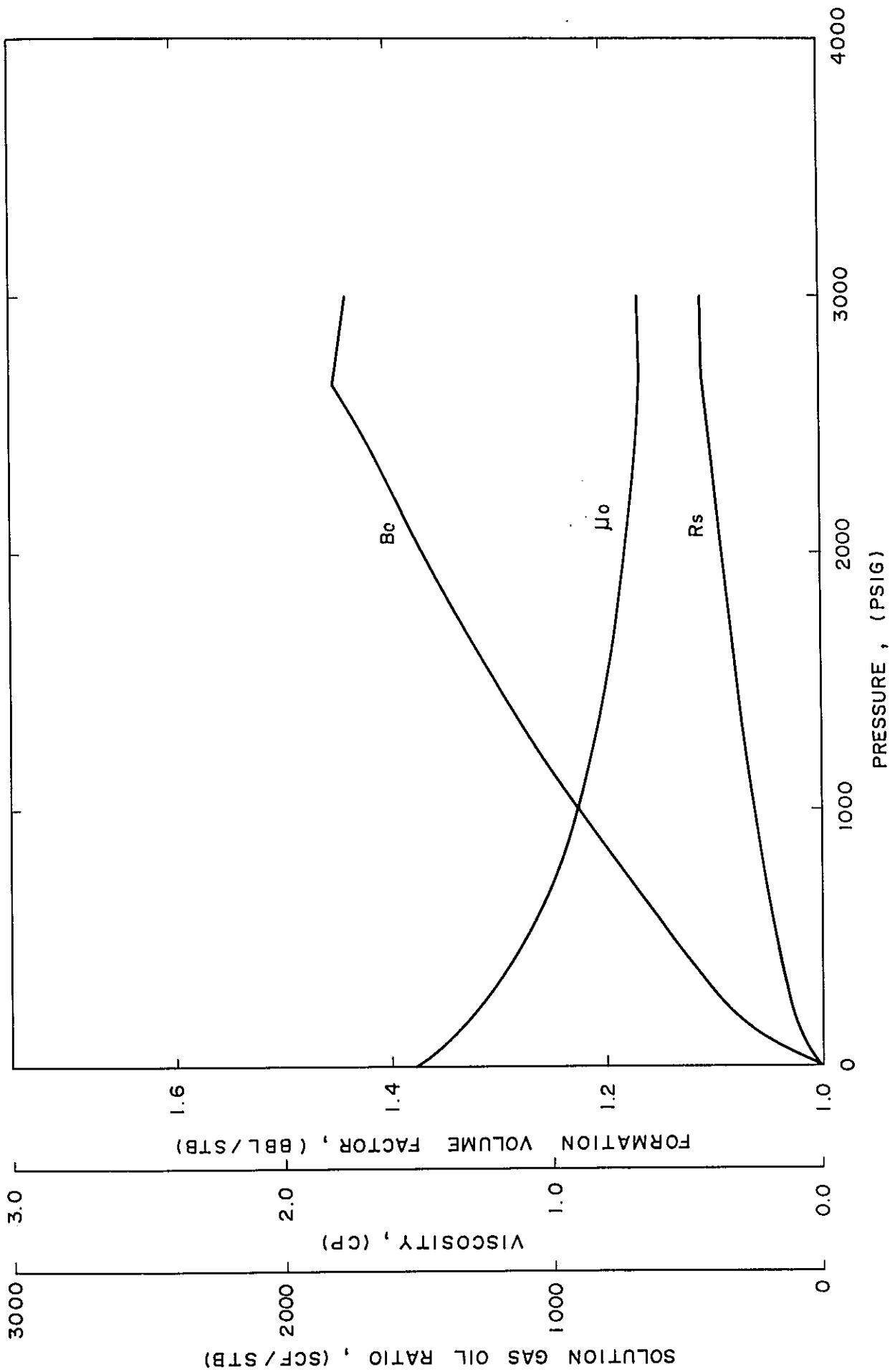


Fig. 12-3-3 OIL PROPERTIES OF CENTRAL LUCONIA FIELD, E 6
Vol. IV

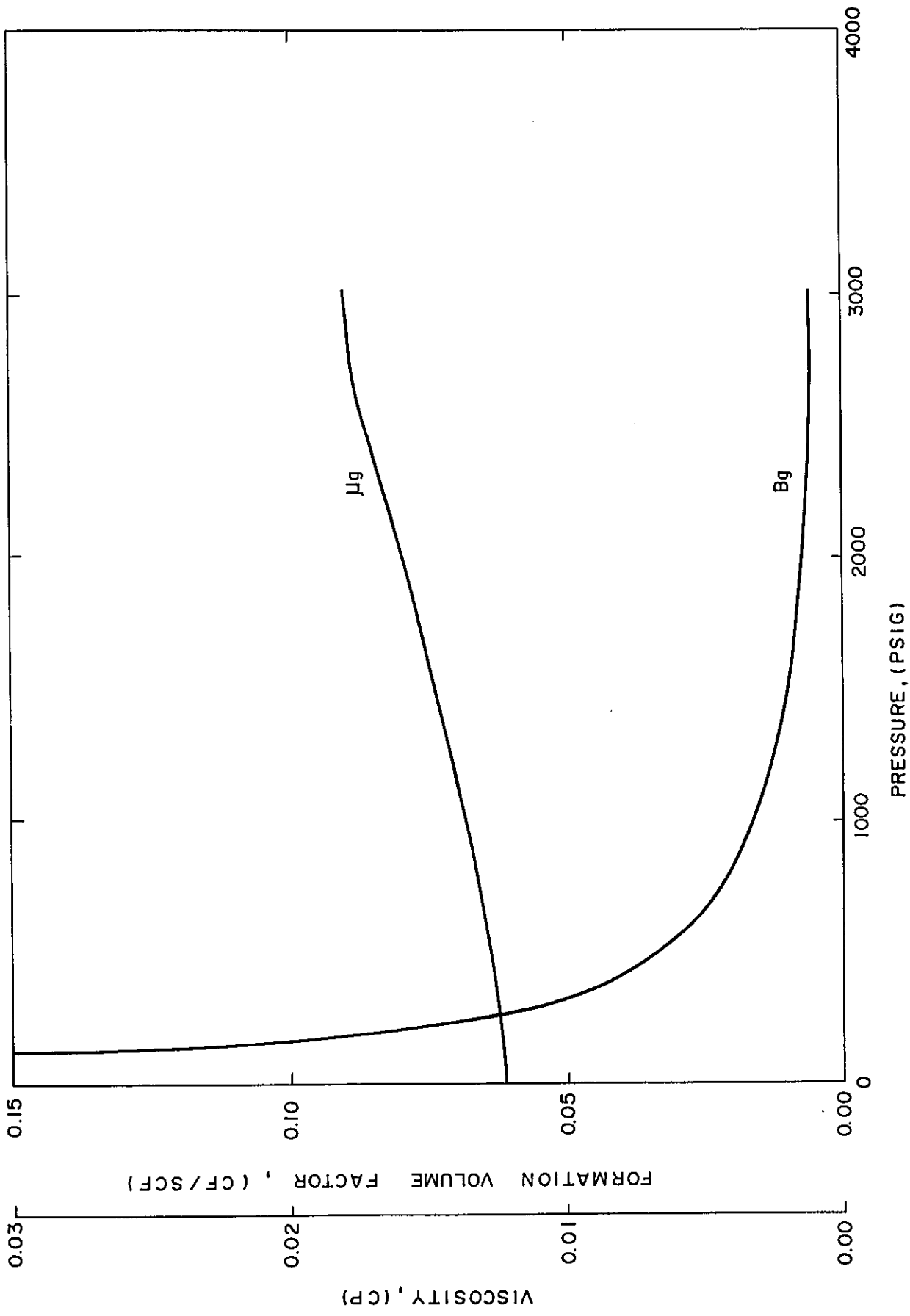


Fig. 12-3-4 GAS PROPERTIES OF CENTRAL LUCONIA FIELD, E 6
Vol. IV

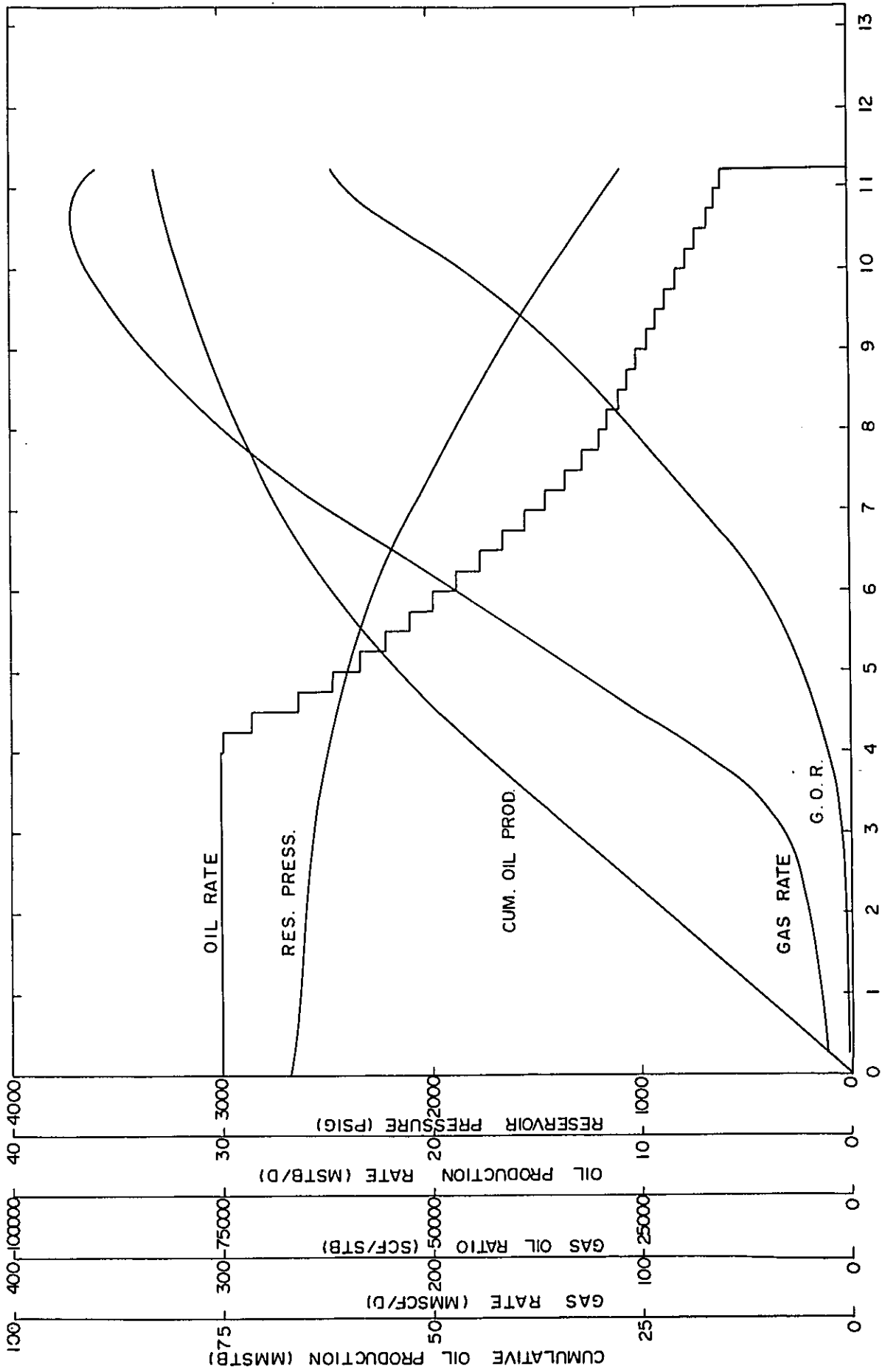


Fig. 12-3-5 PREDICTED PERFORMANCE CASE-1 OF CENTRAL LUCONIA, E 6
Vol. IV

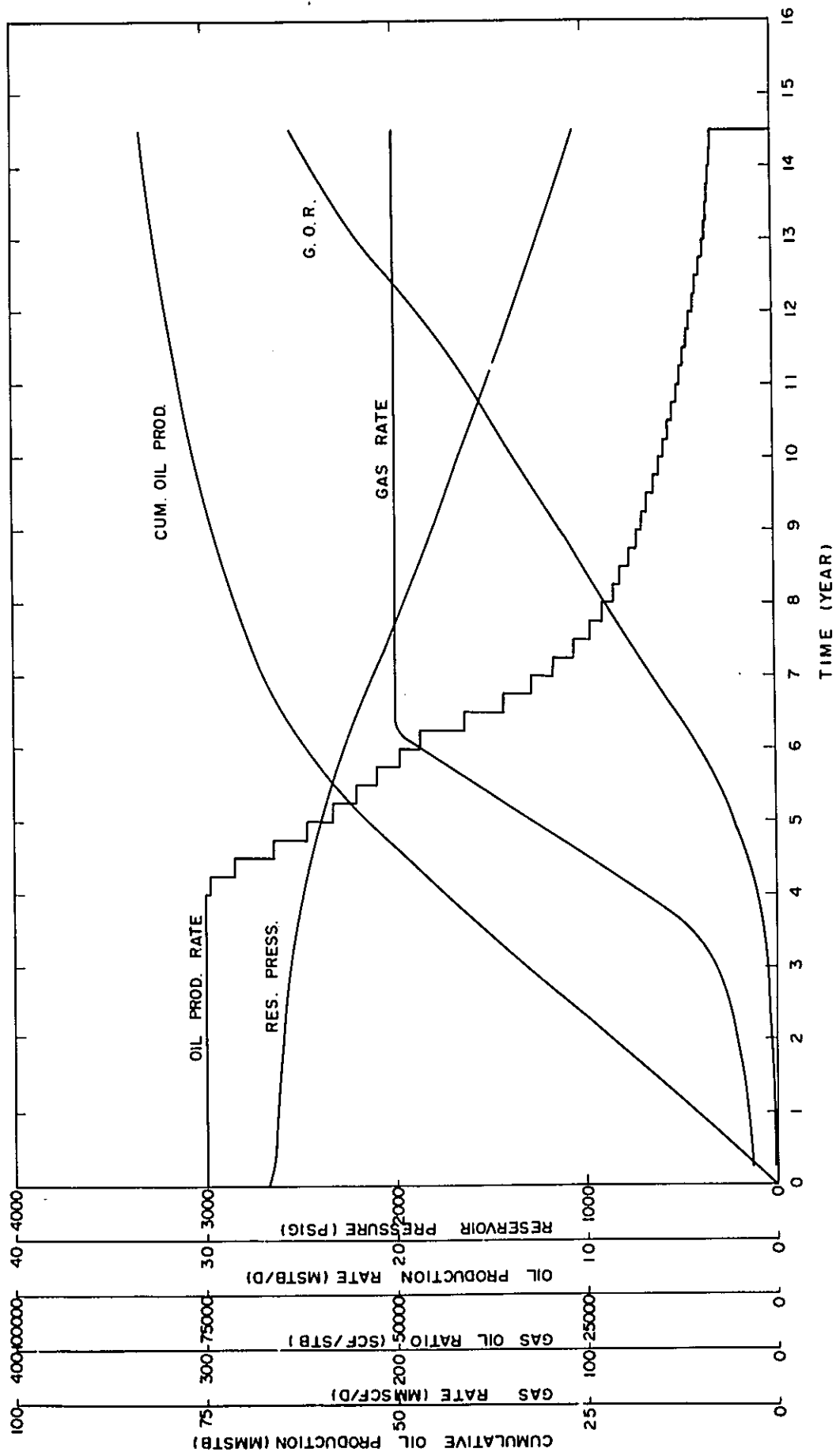


Fig. 12-3-6 PREDICTED PERFORMANCE CASE-2 OF CENTRAL LUCONIA, E 6
Vol. IV

Fig. 12-3-7
Vol. IV

BOTTOM HOLE FLOWING PRESSURE
VS. CUMULATIVE PRODUCTION OF
CENTRAL LUCONIA, E 8

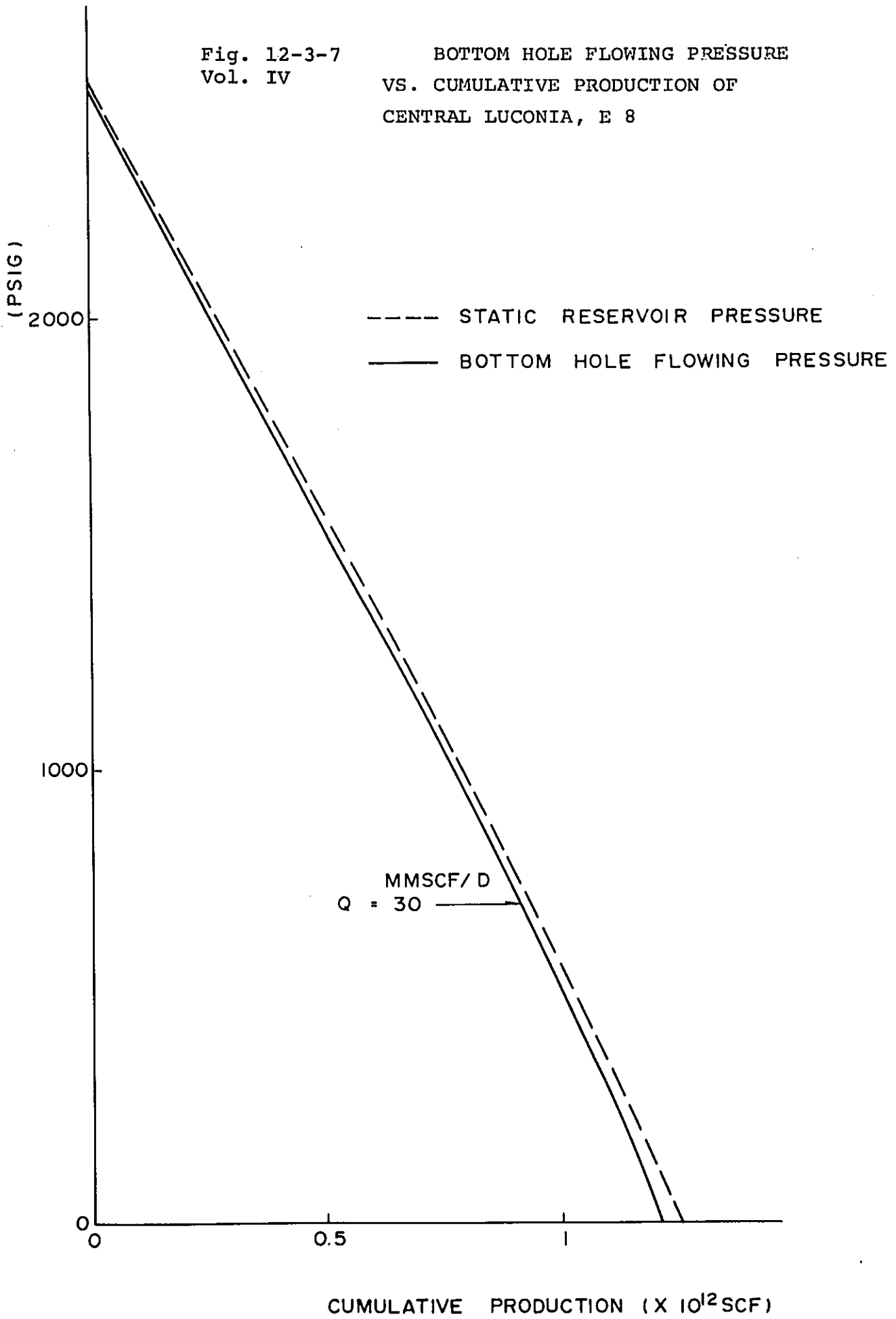


Fig. 12-3-8
Vol. IV

BOTTOM FLOWING PRESSURE VS. CUMULATIVE PRODUCTION
CENTRAL LUCONIA, E11

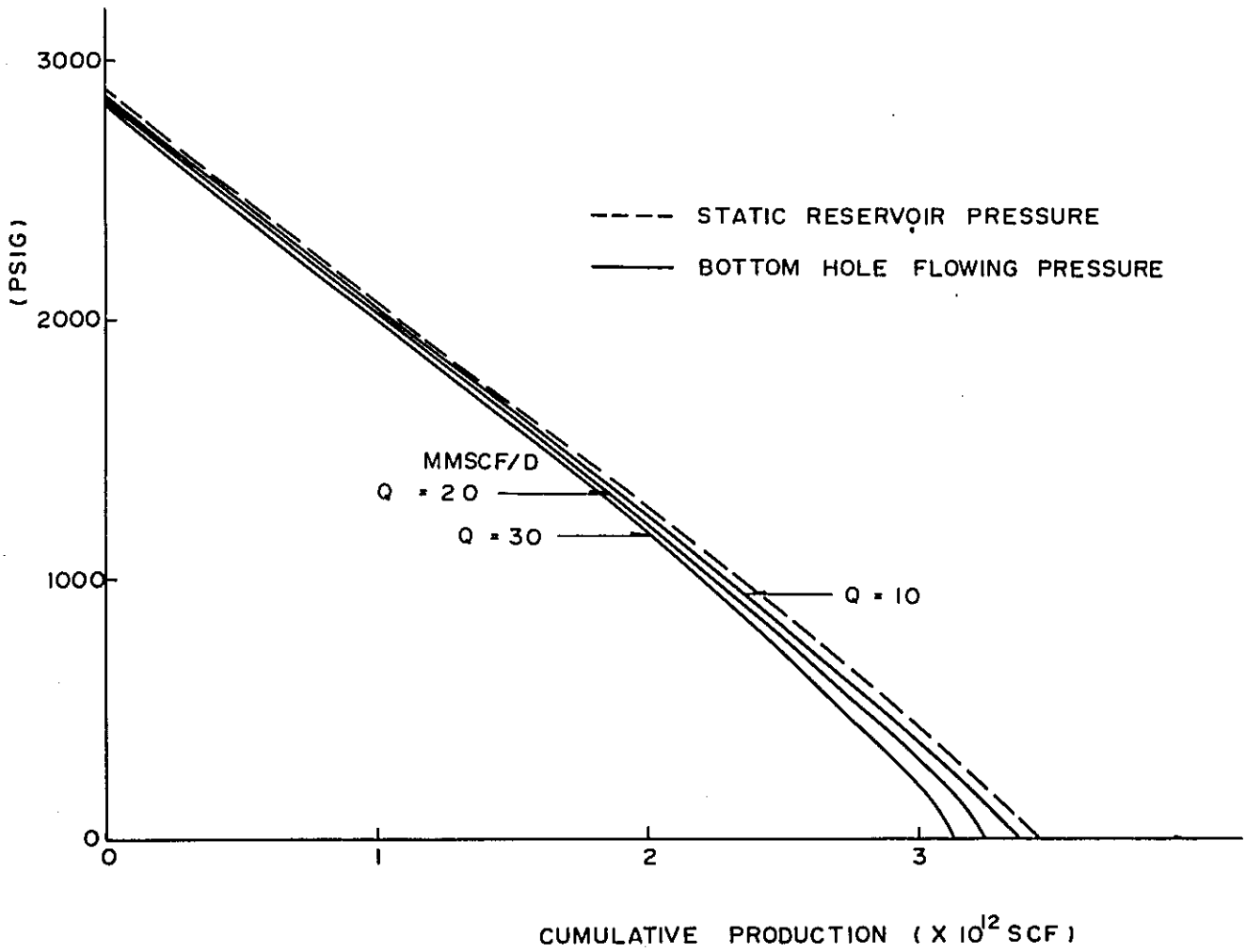


Fig. 12-3-9
Vol. IV

BOTTOM FLOWING PRESSURE
VS. CUMULATIVE PRODUCTION
OF CENTRAL LUCONIA, F 6

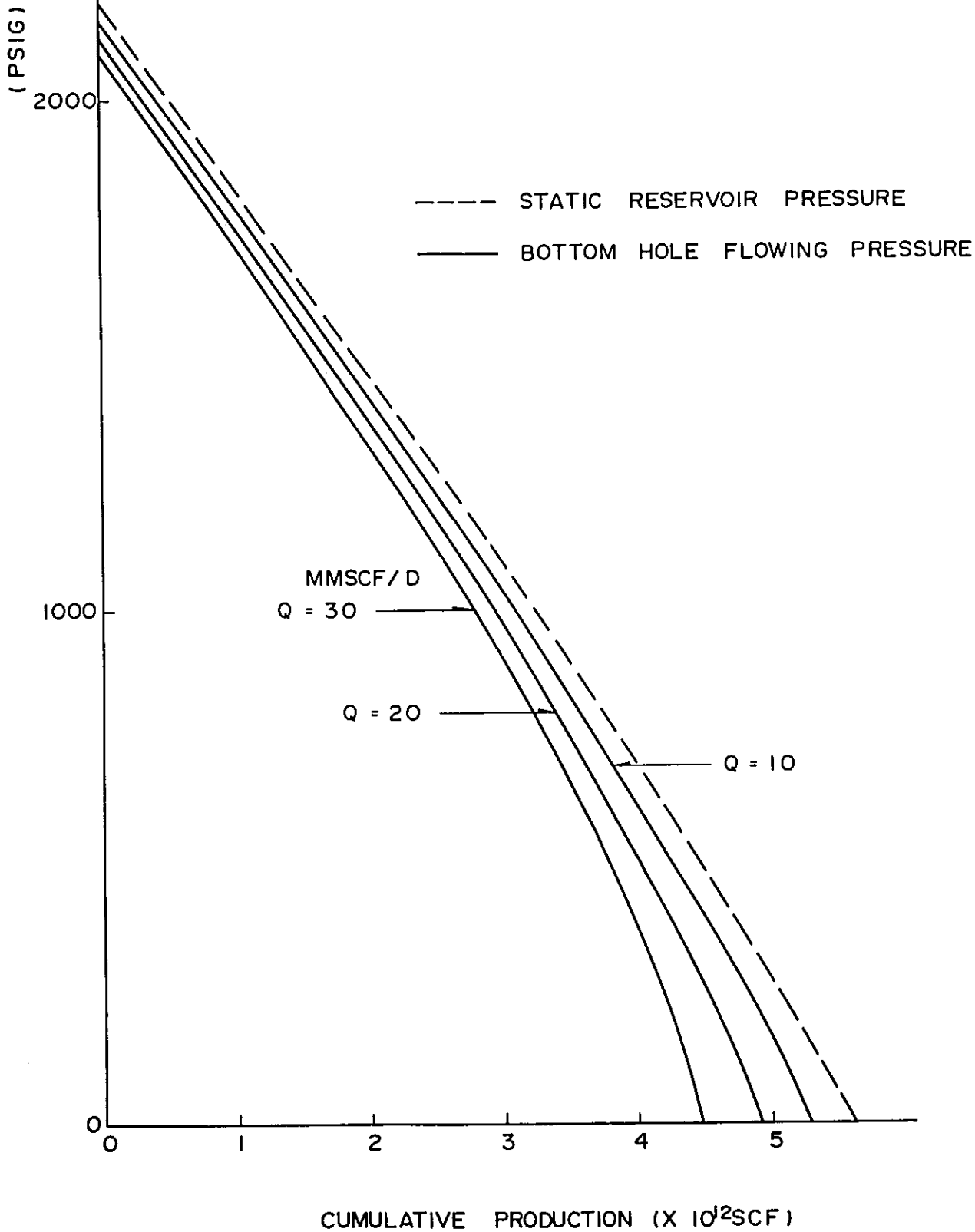


Fig. 12-3-10
Vol. IV

BOTTOM FLOWING PRESSURE
VS. CUMULATIVE PRODUCTION
OF CENTRAL LUCONIA, F13

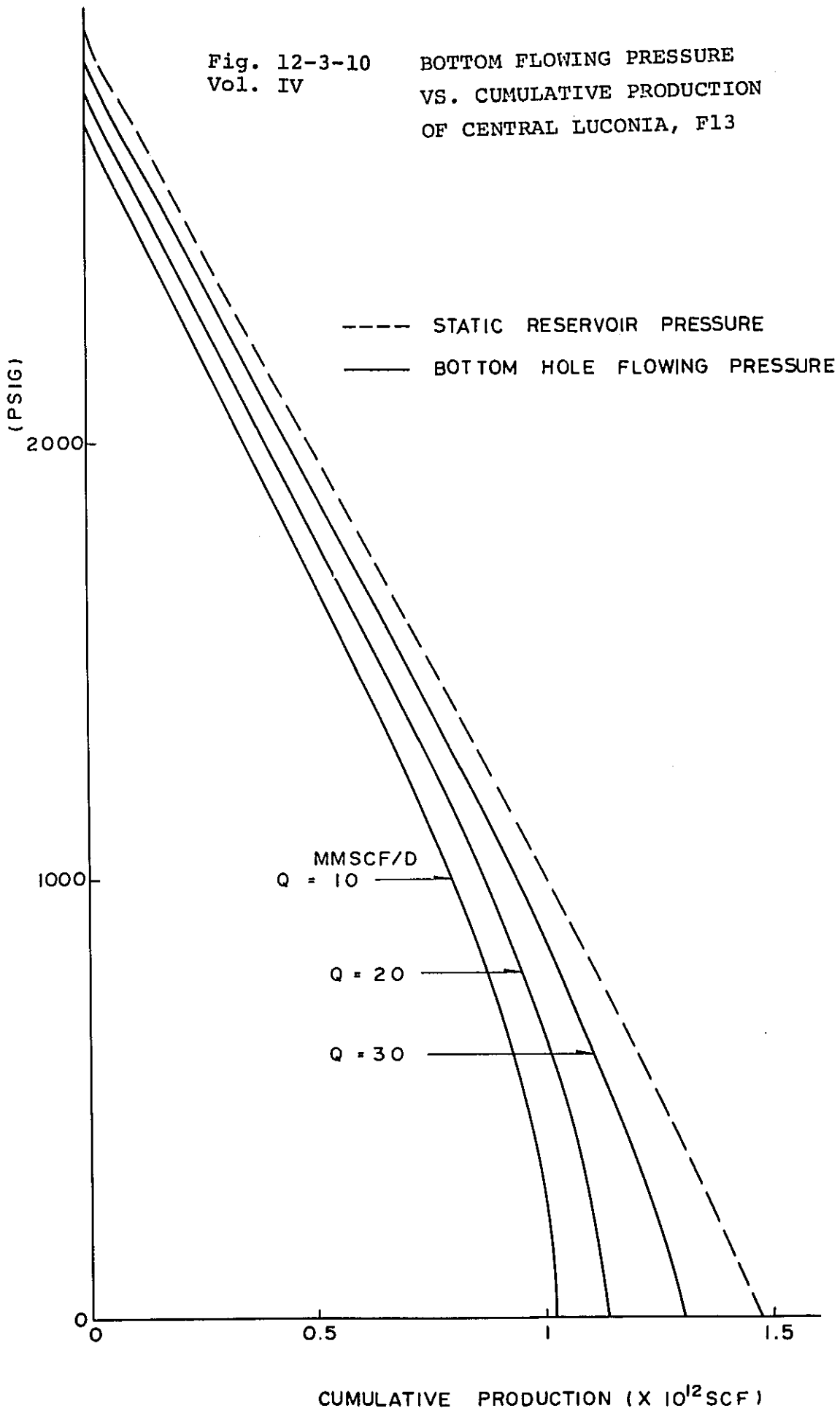


Fig. 12-3-11 BOTTOM FLOWING PRESSURE
Vol. IV VS. CUMULATIVE PRODUCTION
OF CENTRAL LUCONIA, F14

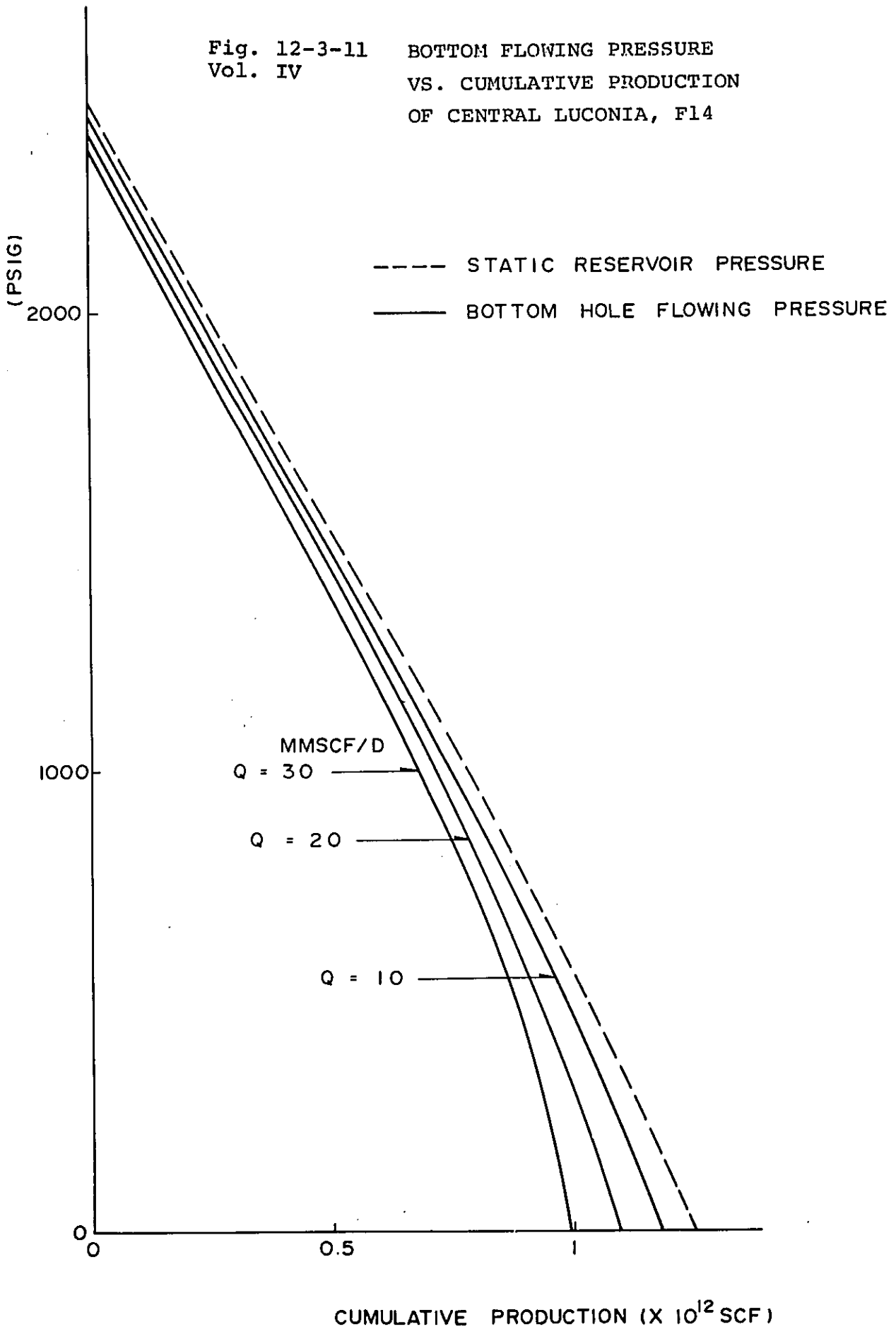
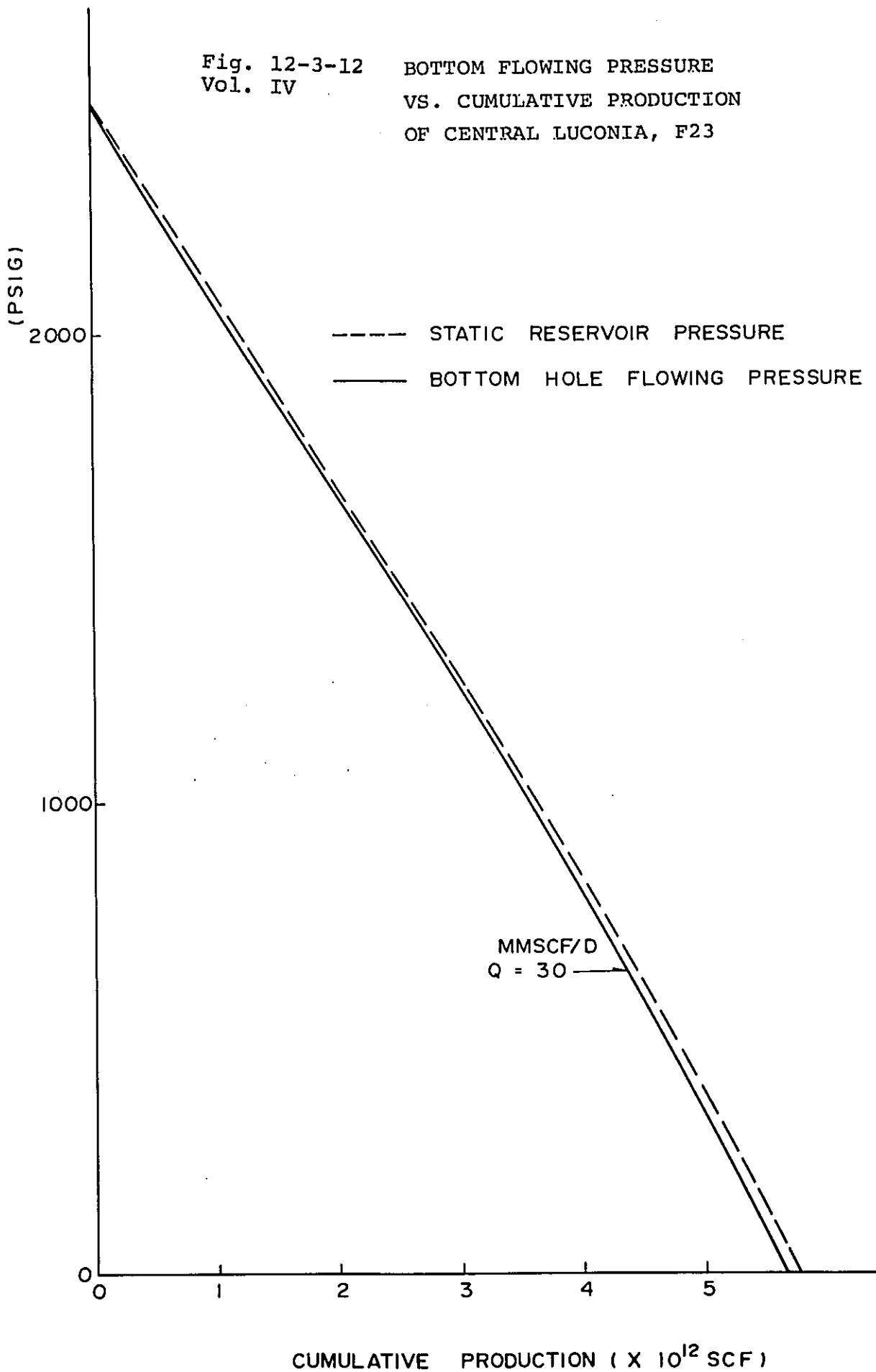


Fig. 12-3-12 BOTTOM FLOWING PRESSURE
Vol. IV VS. CUMULATIVE PRODUCTION
OF CENTRAL LUCONIA, F23



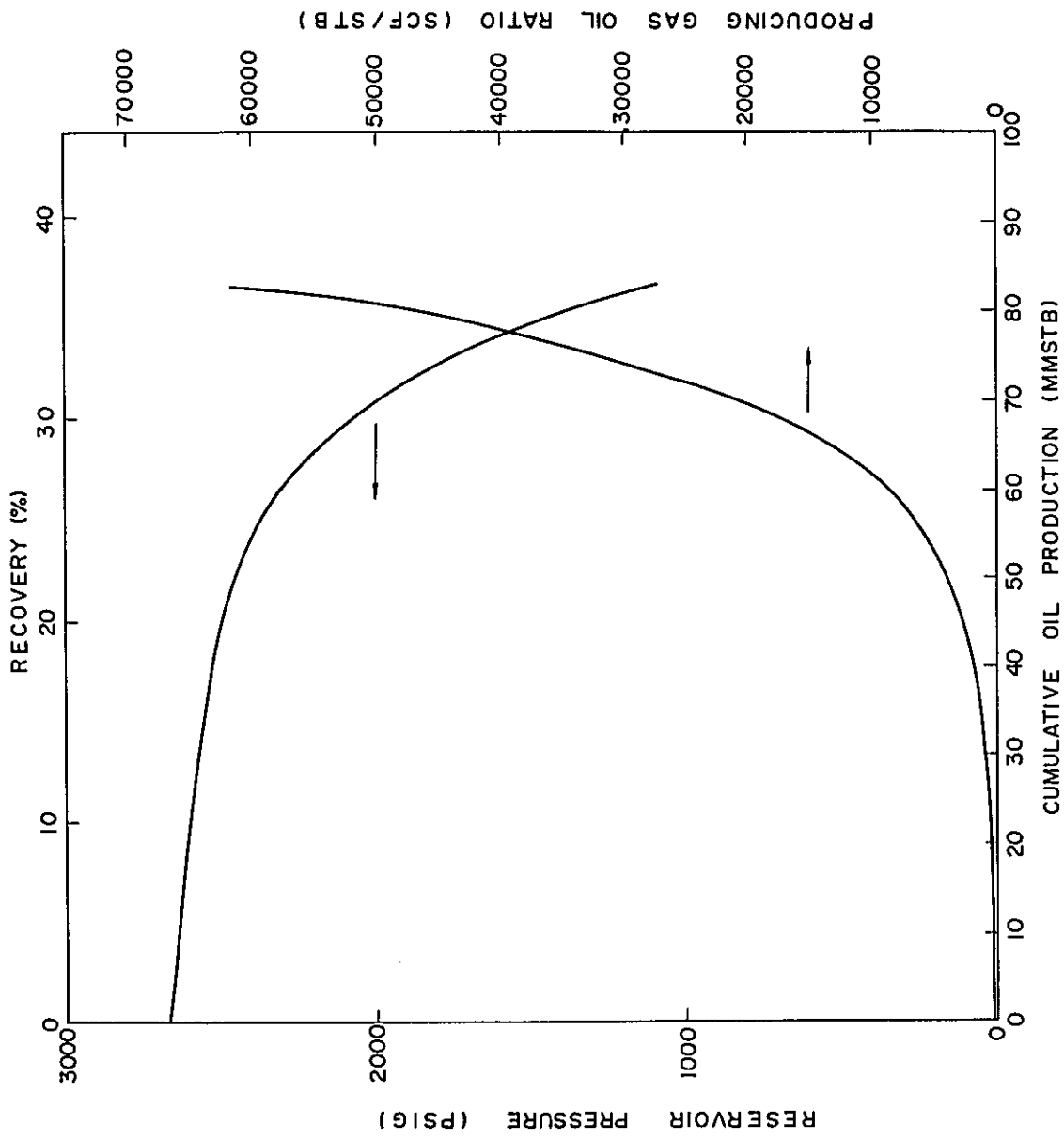
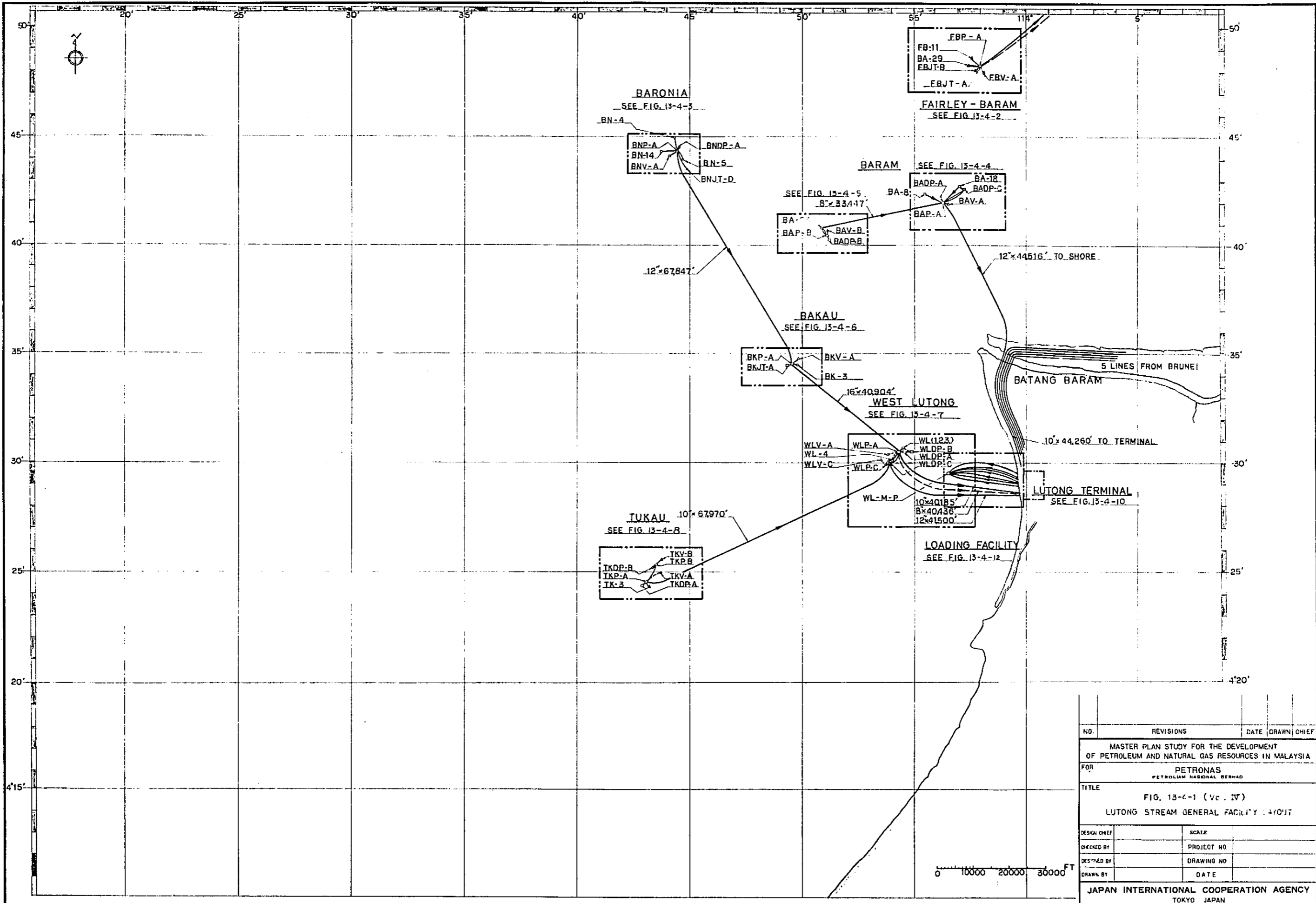
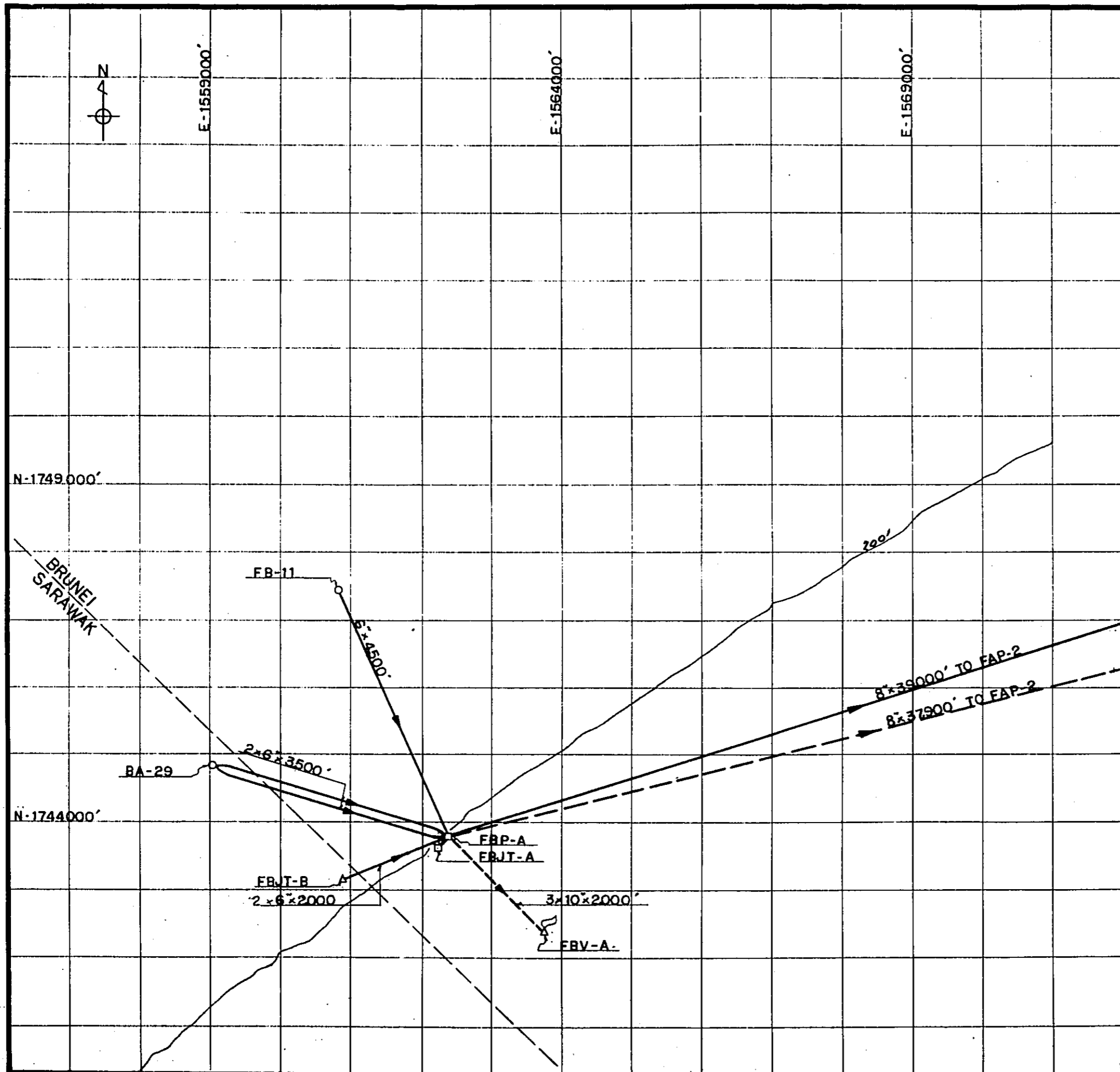


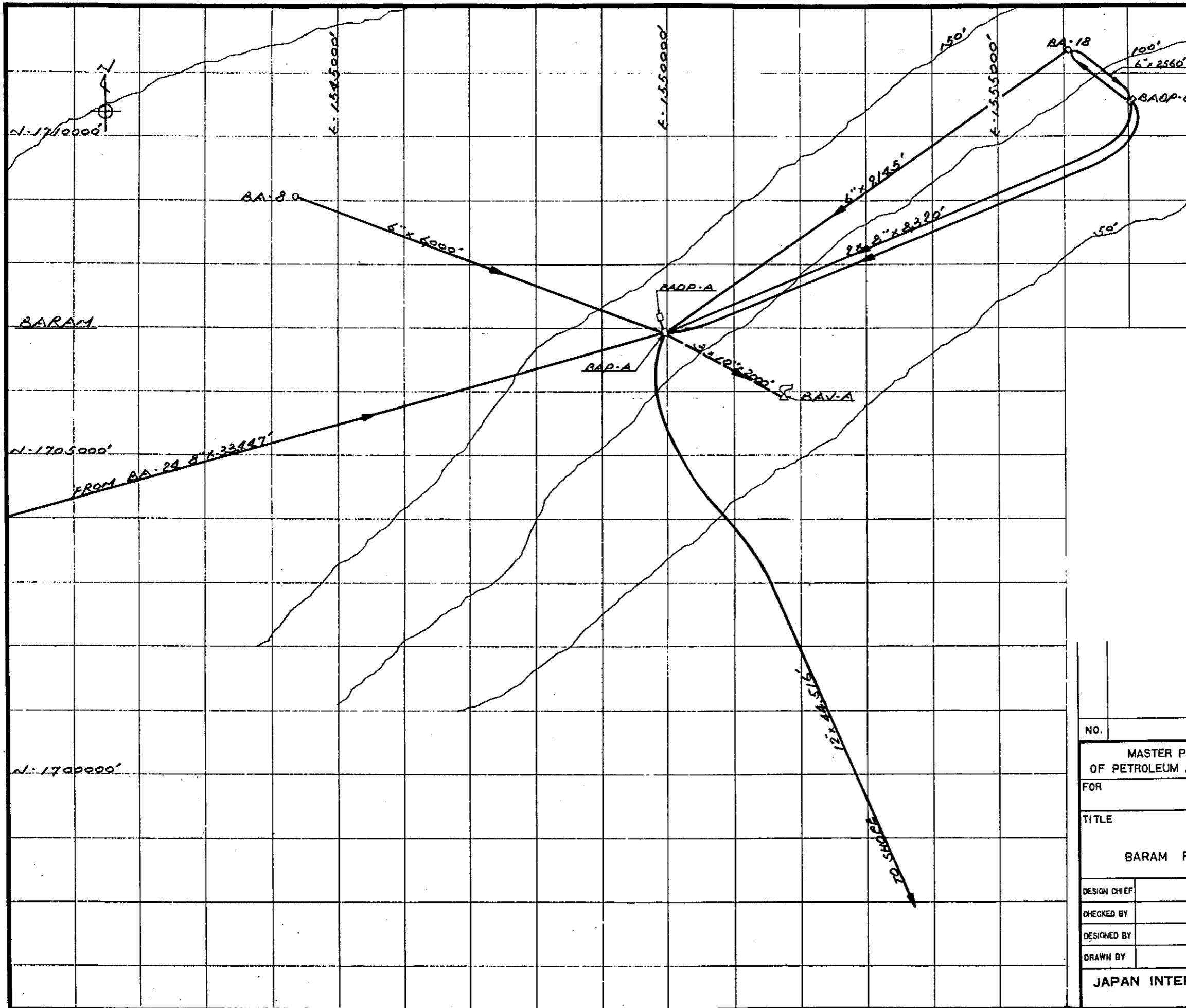
Fig. 12-3-13 CUMULATIVE OIL PRODUCTION VS. RESERVOIR PRESSURE
 AND PRODUCING GAS OIL RATIO OF CENTRAL LUCONIA E6
 Vol. IV (CASE-1 AND CASE-2)



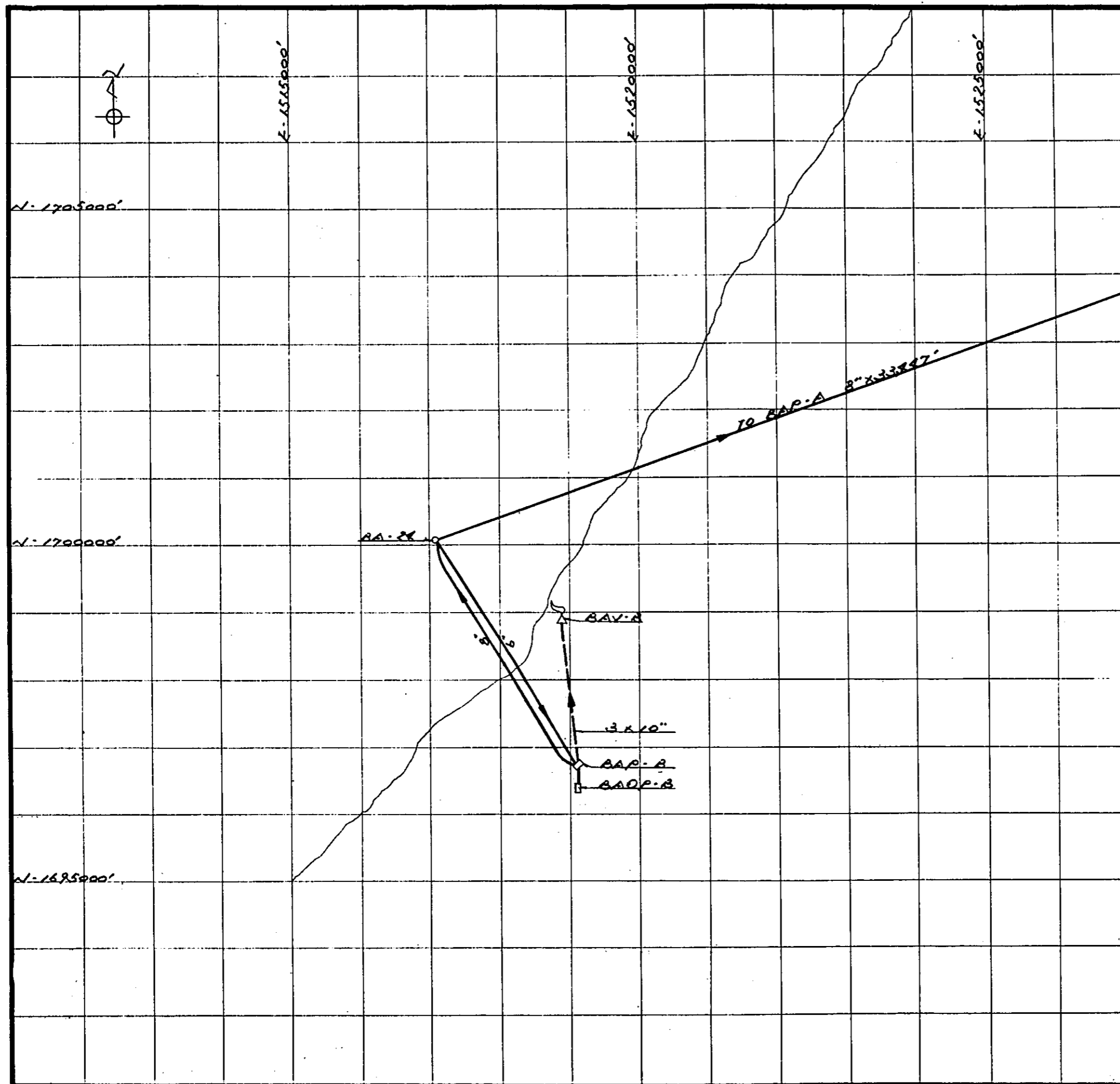
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 13-4-1 (Vol. IV) LUTONG STREAM GENERAL FACILITY 1:40'17				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



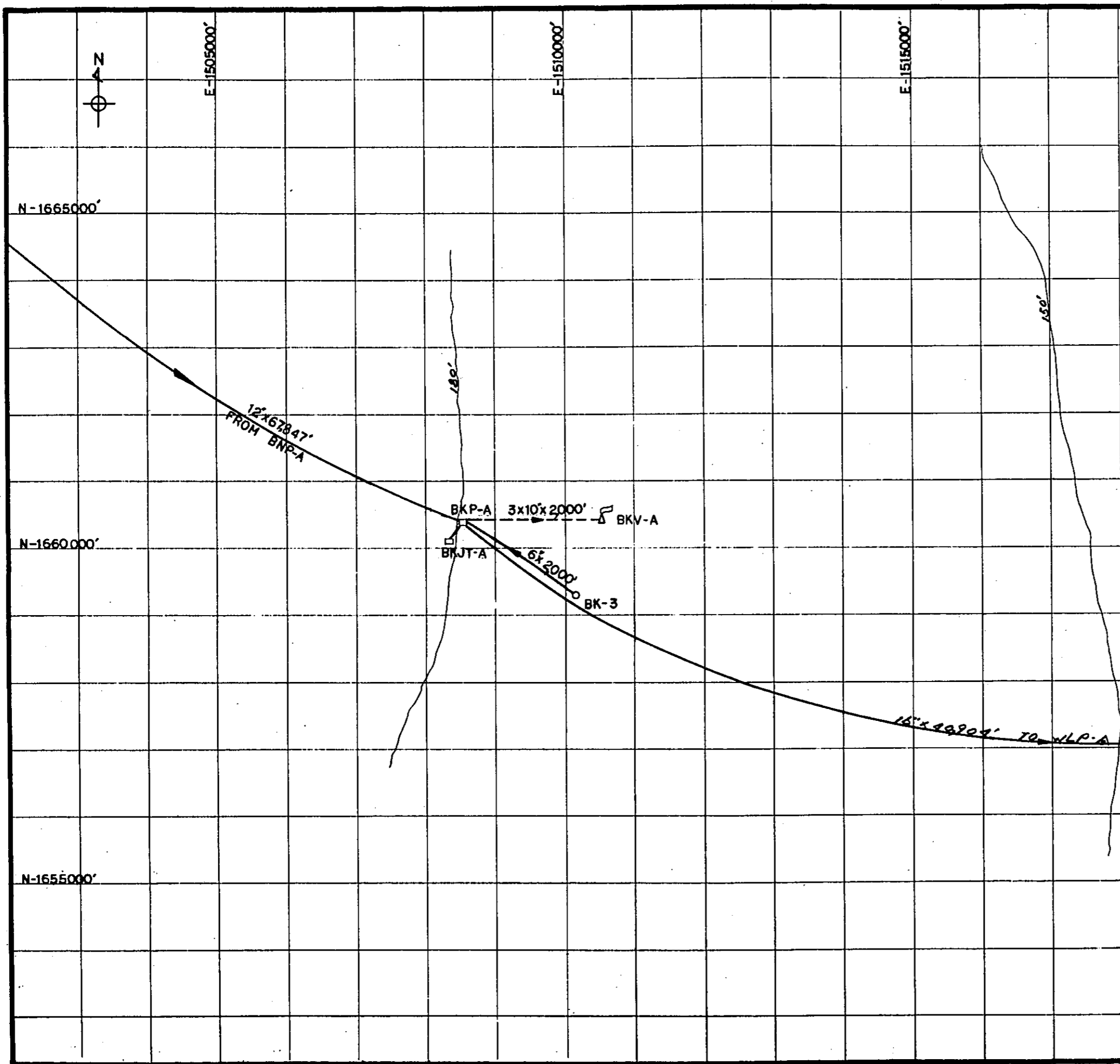
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 13-4-2 (Vol. IV) FAIRLEY-BARAM FIELD FACILITY LAYOUT				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



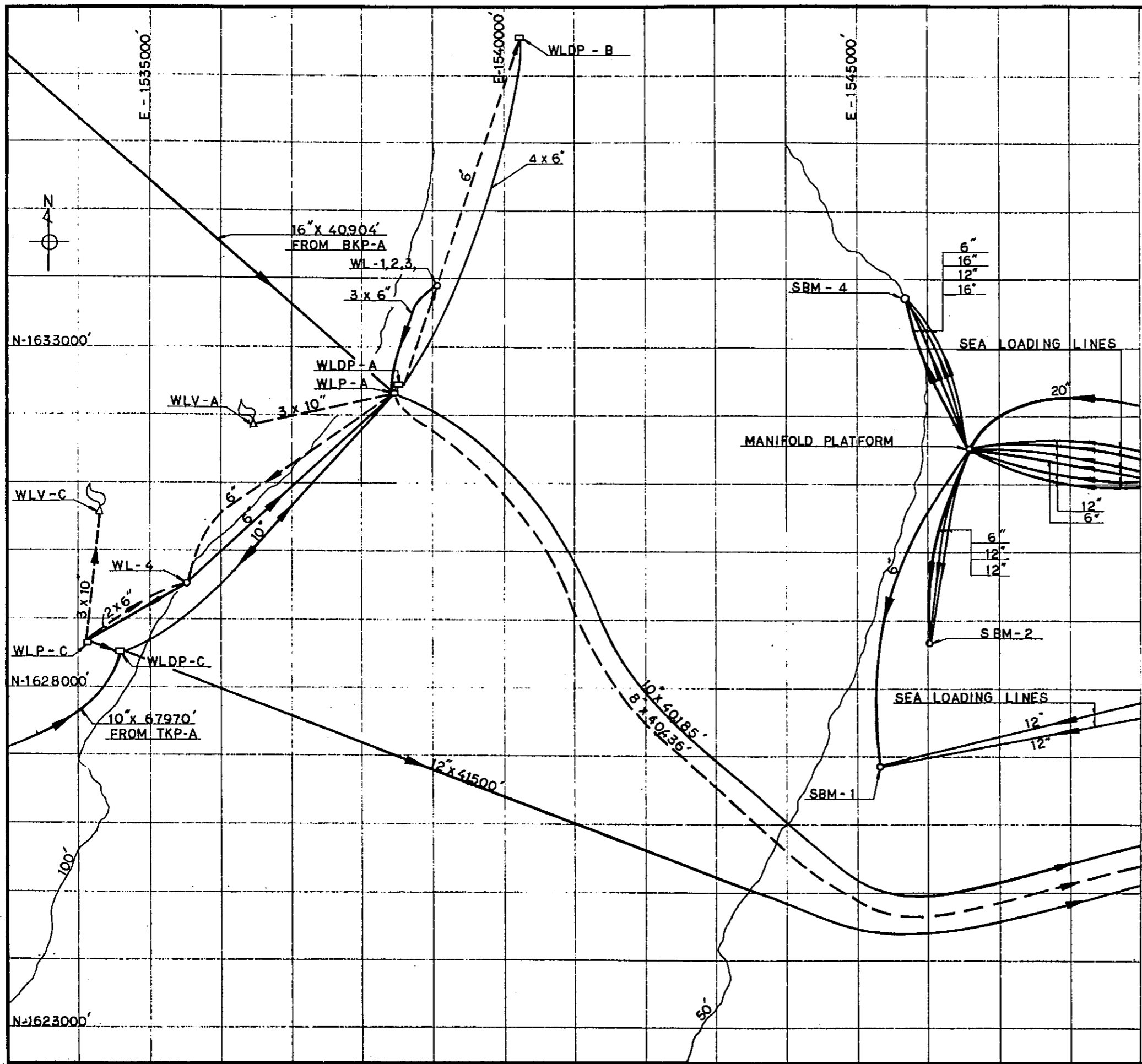
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS <small>PETROLIUM NASIONAL BERHAD</small>				
TITLE FIG. 13-4-4 (Vol. IV) BARAM FIELD FACILITY LAYOUT NO.1				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY <small>TOKYO JAPAN</small>				



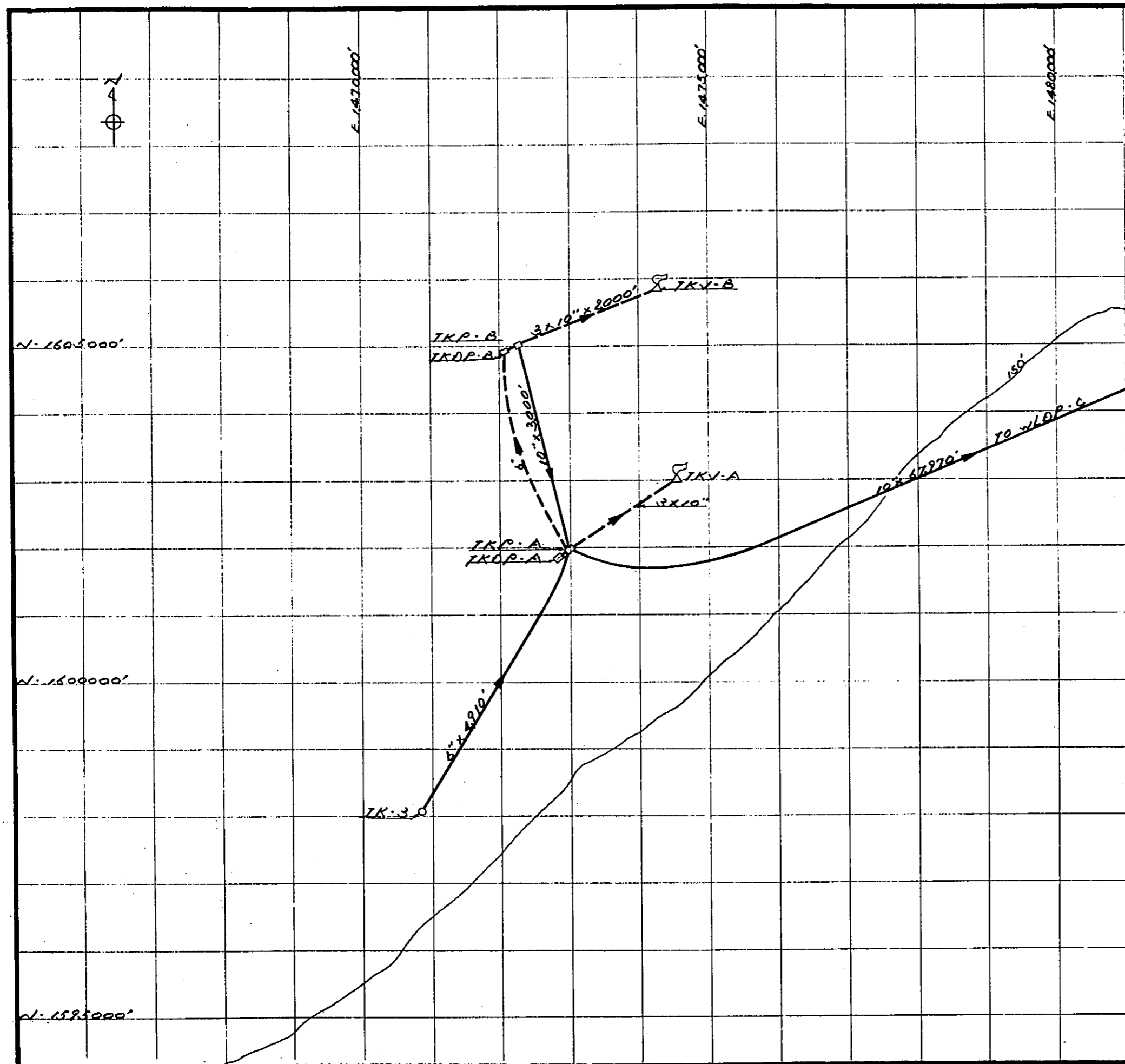
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 13-4-5 (Vol. IV) BARAM FIELD FACILITY LAYOUT NO. 2				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



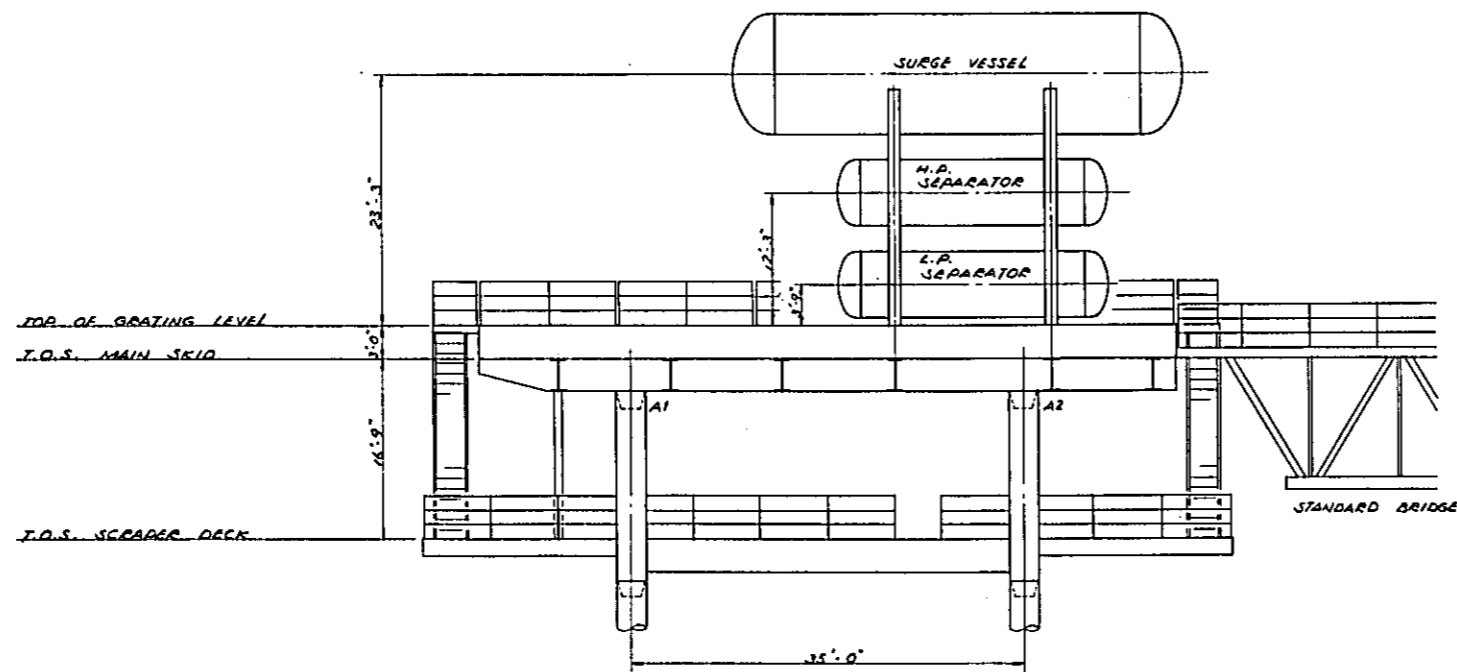
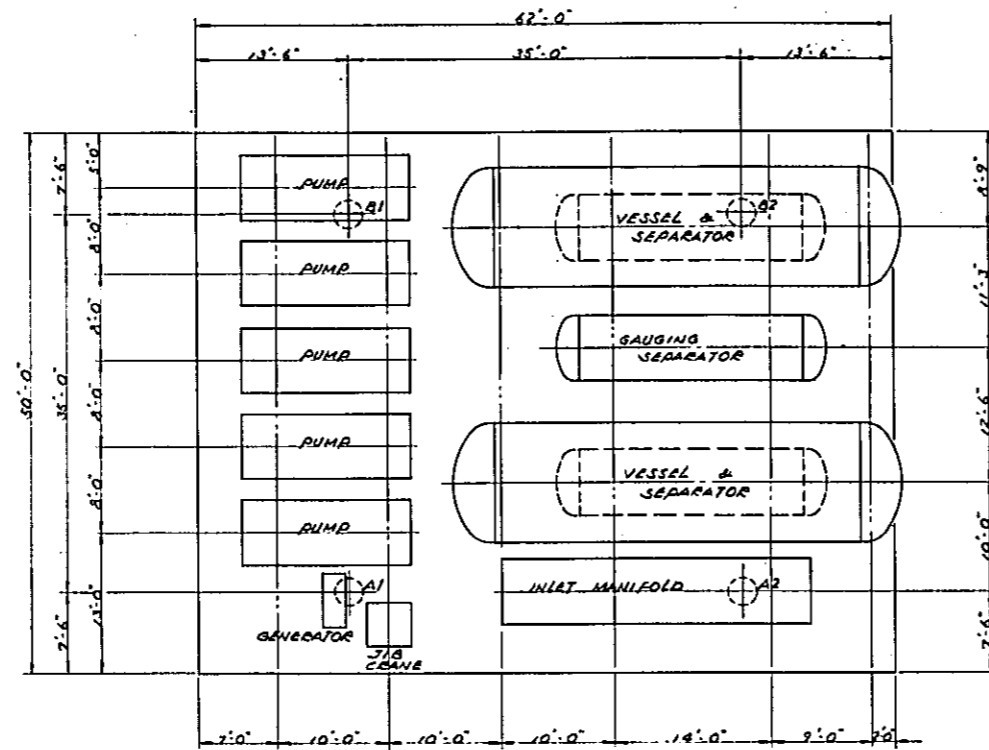
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIAM NASIONAL BERHAD TITLE FIG. 13-4-6 (Vol. IV) BAKAU FIELD FACILITY LAYOUT				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



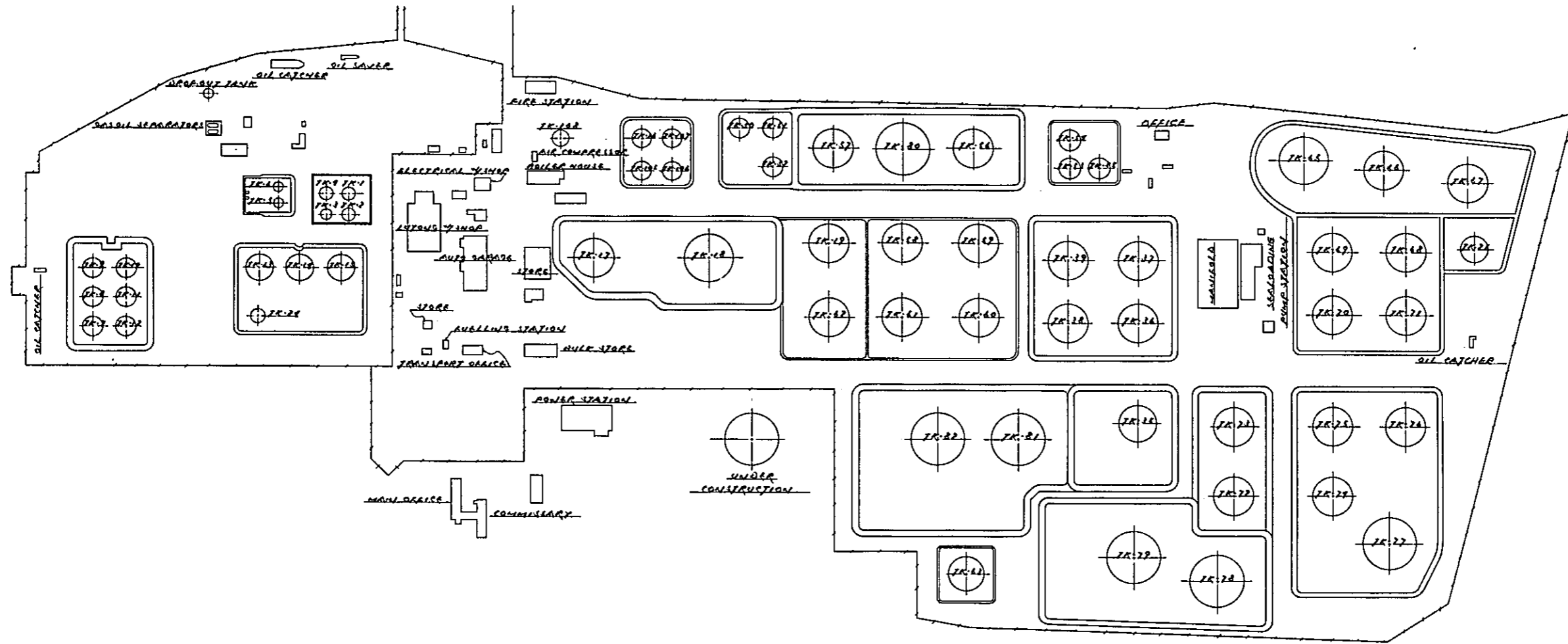
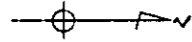
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG.13-4-7 (Vol. IV) WEST LUTONG FIELD FACILITY LAYOUT				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 13-4-8 (Vol. IV) TUKAU FIELD FACILITY LAYOUT				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



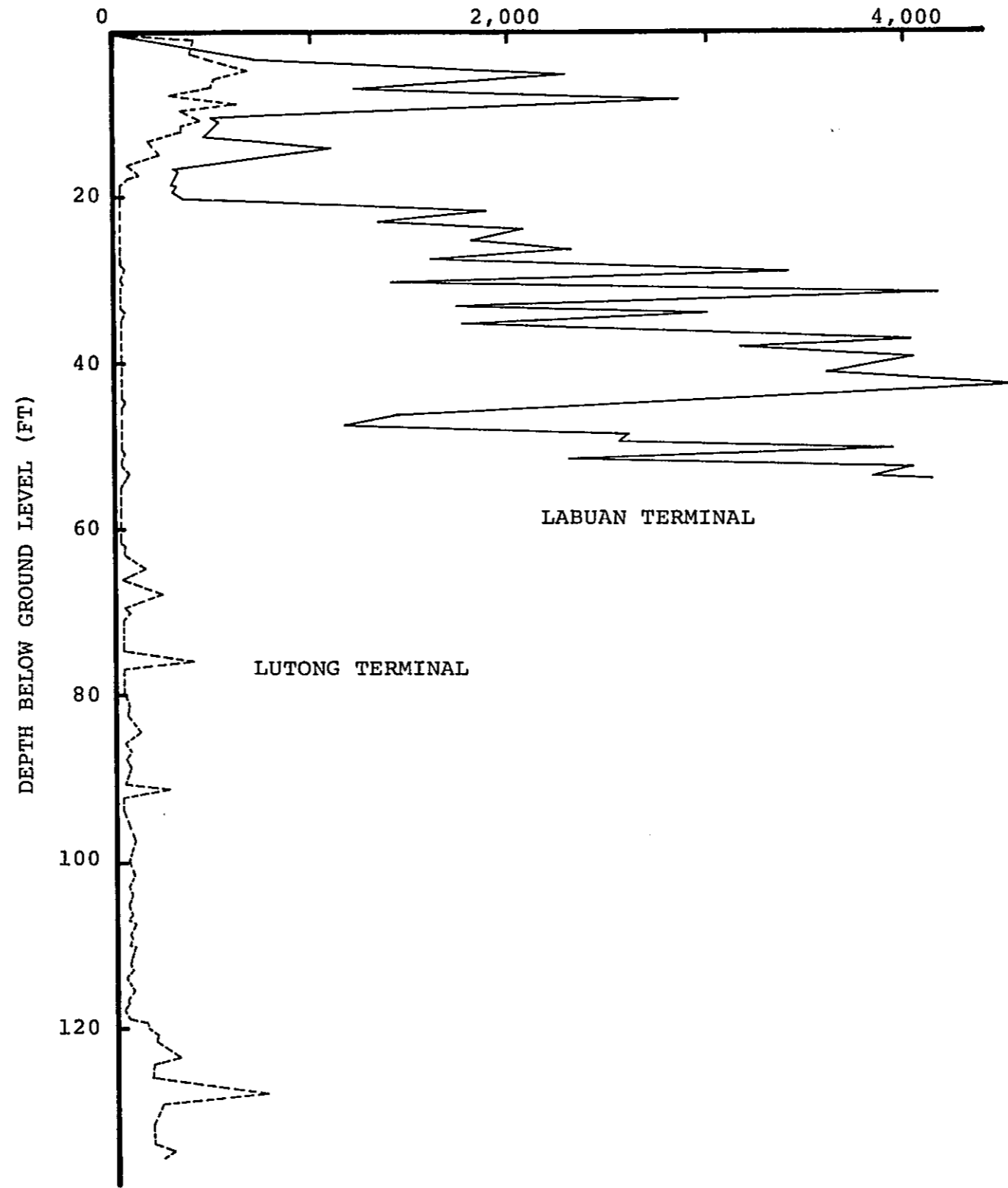
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 13-4-9 (Vol. IV) MAJOR EQUIPMENT ARRANGEMENT OF STANDARD PRODUCTION PLATFORM				
DESIGN CHECK	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

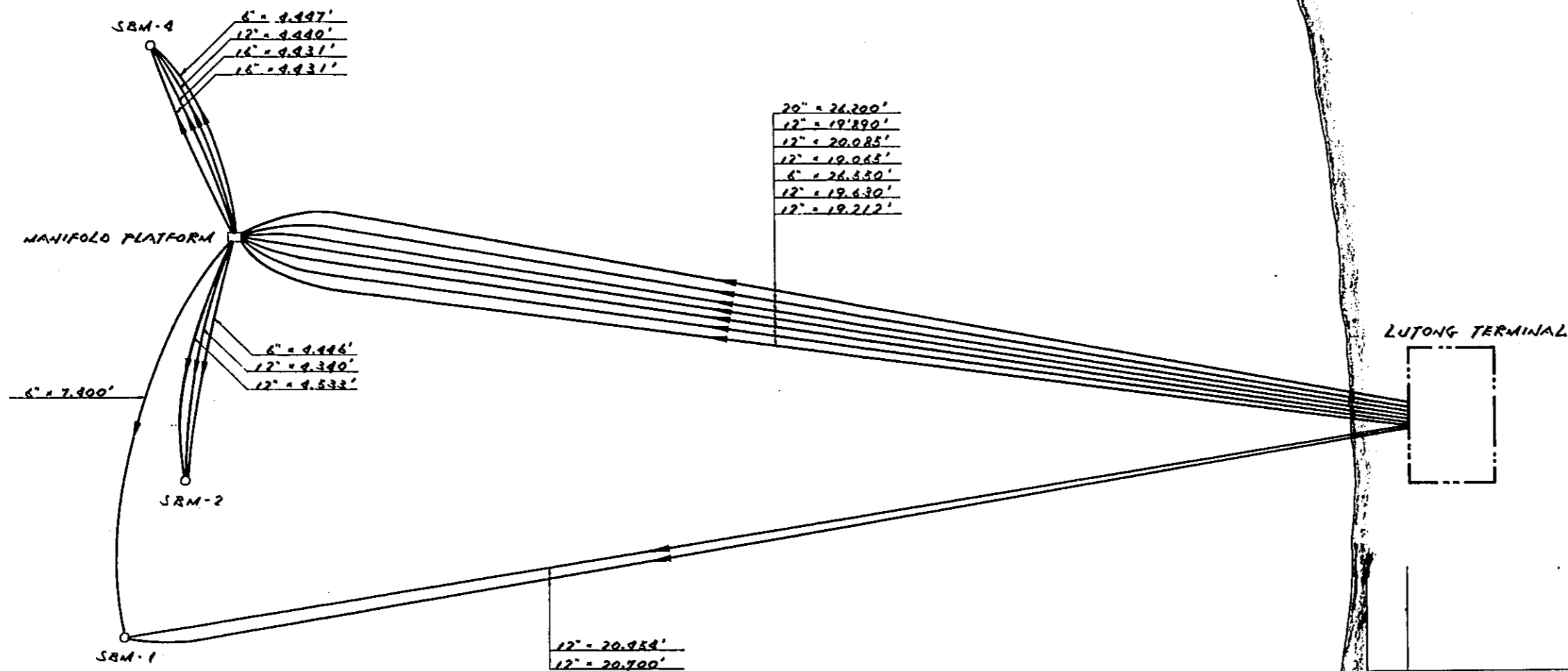


NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIAN NASIONAL BERHAD				
TITLE FIG. 13-4-10 (Vol. IV) LUTONG TERMINAL FACILITY LAYOUT				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

Fig. 13-4-11
(Vol. IV)

CONE PENETRATION TEST
LUTONG AND LABUAN TERMINAL
CONE RESISTANCE (LB/IN²)





NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS <small>PETROLIUM NASIONAL BERHAD</small>				
TITLE FIG. 13-4-12 (Vol. IV) LOADING FACILITY LAYOUT OF LUTONG TERMINAL				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

FIG. 18-5-2 (Vol. IV)

BLOCK FLOW DIAGRAM

FOR EAST TEMANA OIL FIELD

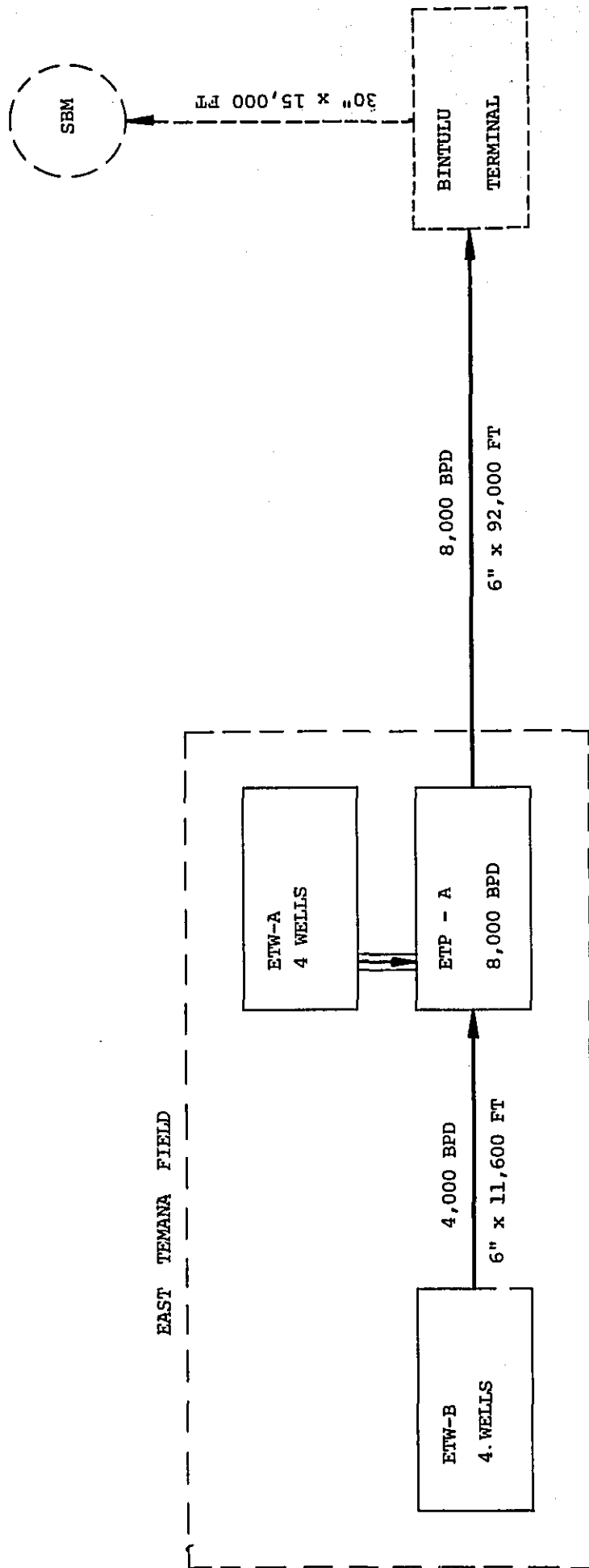


Fig. 13-4-13
(Vol. IV)

LUTONG STREAM PRESSURE BALANCE

AT PRESENT PRODUCTION RATE

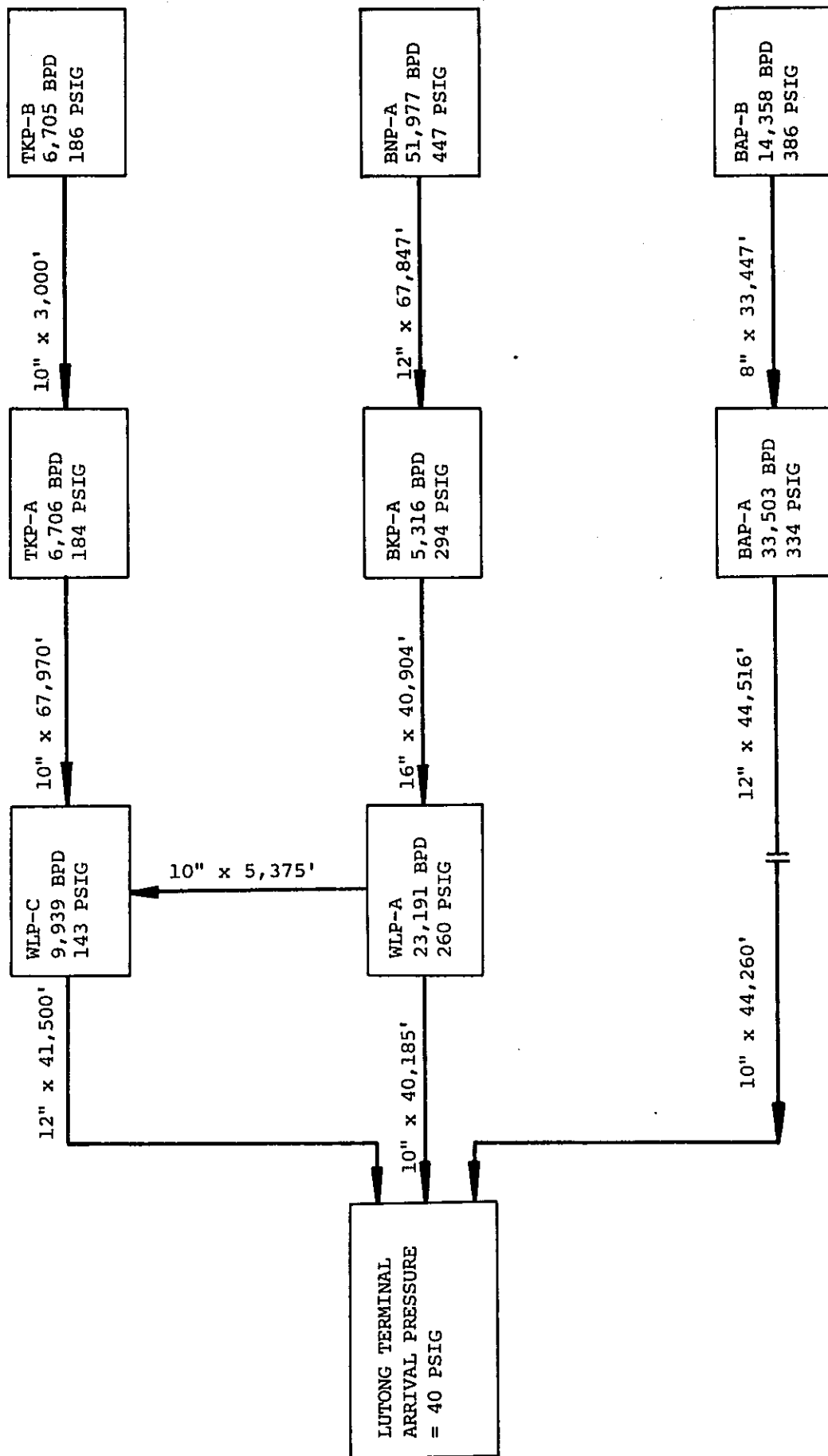


Fig. 13-4-14
(Vol. IV)

LUTONG STREAM PRESSURE BALANCE

AT MAXIMUM HANDLING CAPACITY OF PRODUCTION PLATFORMS

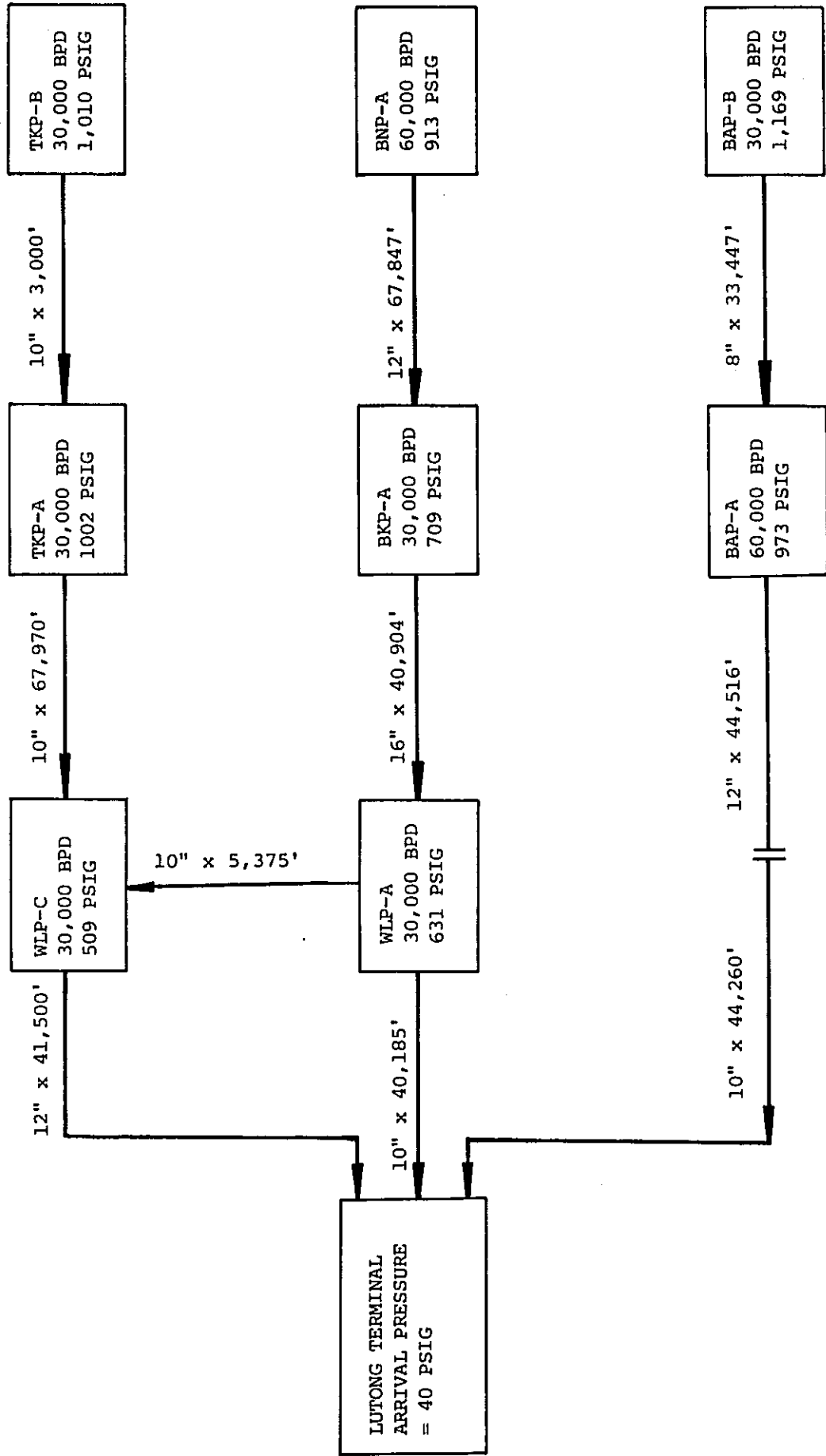


Fig. 13-4-15
(Vol. IV)

COMBINATION OF LOADING LINES
FOR BERTH NO. 2

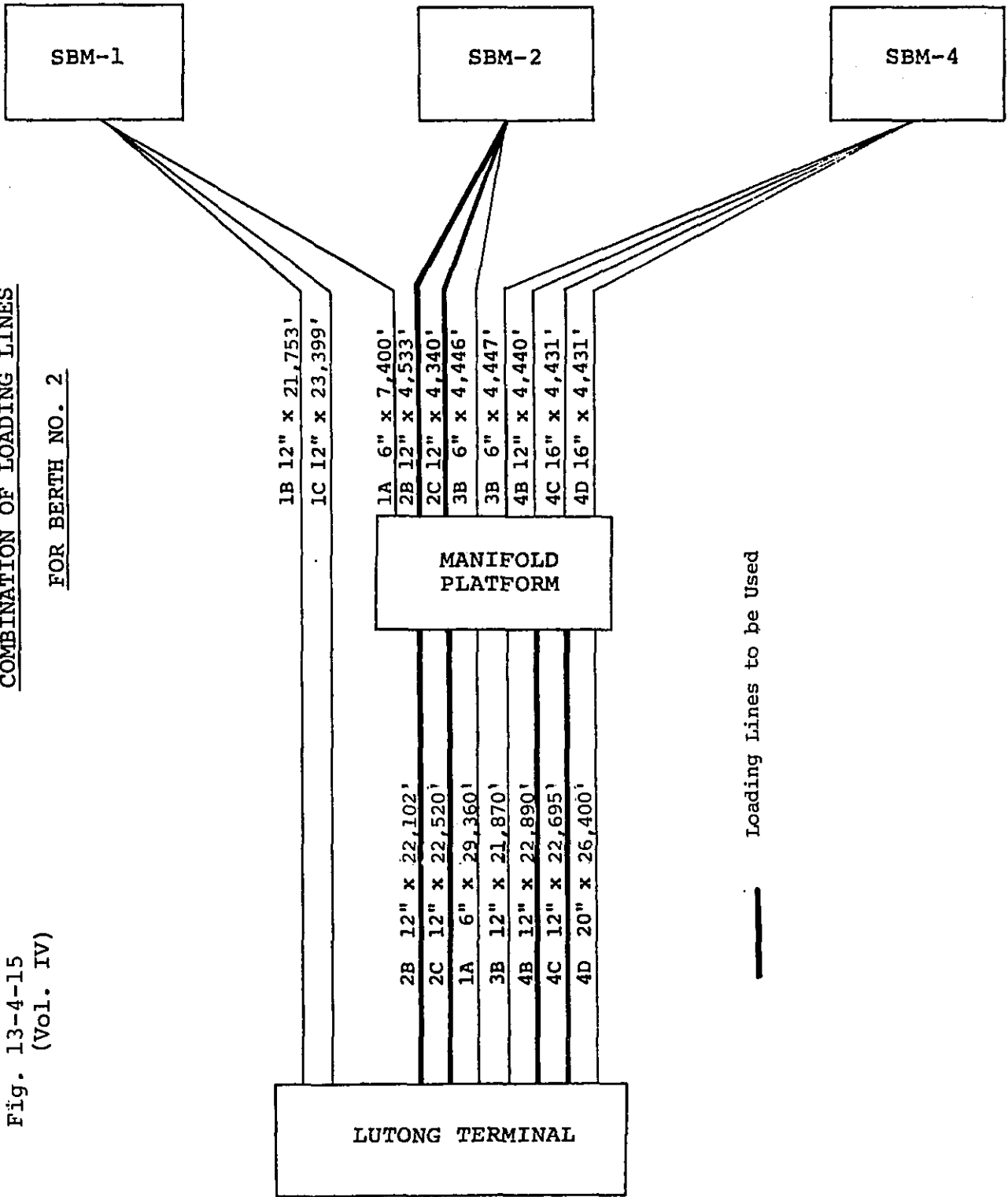


Fig. 13-4-16
(Vol. IV)

COMBINATION OF LOADING LINES

FOR BERTH NO. 4

(CASE 1)

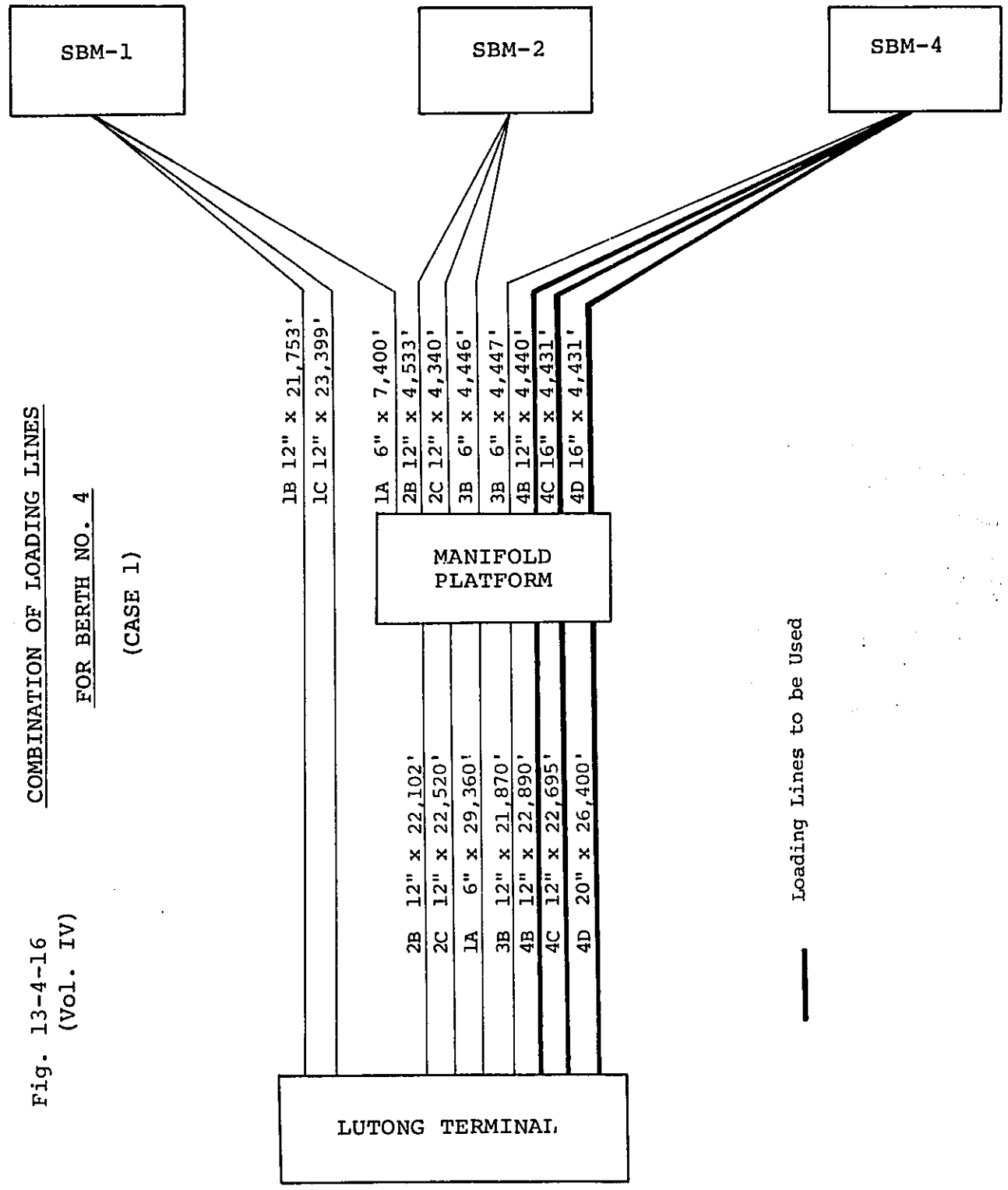


Fig. 13-4-17
(Vol. IV)

COMBINATION OF LOADING LINES

FOR BERTH NO. 4

(CASE 2)

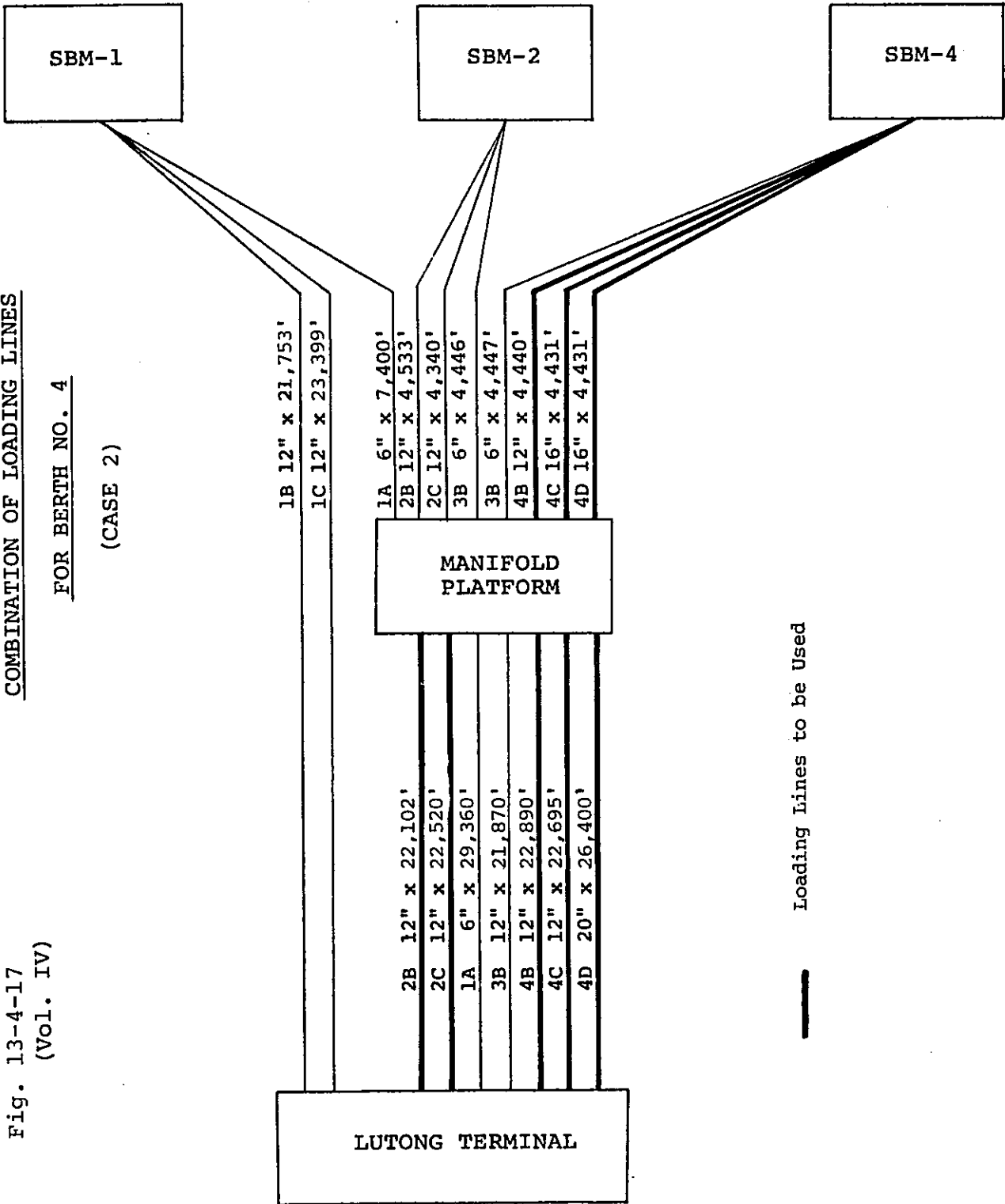
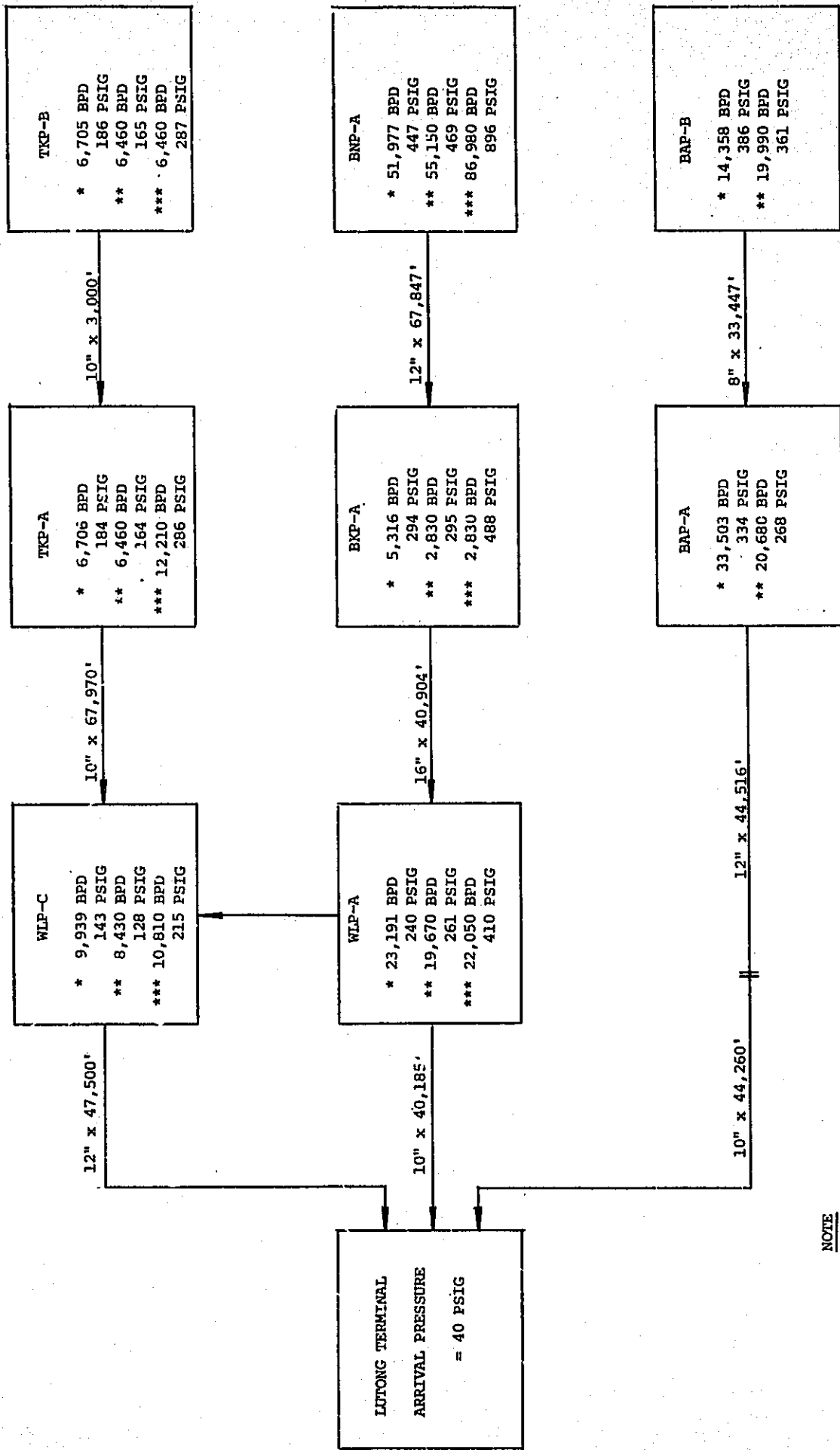


Fig. 13-4-18 PRESSURE BALANCE FOR THE PRESENT AND MAXIMUM
(Vol. IV) PREDICTED PRODUCTION RATE IN LUTONG STREAM



NOTE

- * VALUE AT PRESENT PRODUCTION RATE
- ** VALUE AT PREDICTED MAXIMUM PRODUCTION RATE
- *** VALUE AT PREDICTED PRODUCTION RATE OF ADDITIONAL WELL CASE

Fig. 13-4-19
(Vol. IV)

LUTONG STREAM PRESSURE BALANCE
IN THE CASE OF OFFSHORE DEHYDRATION

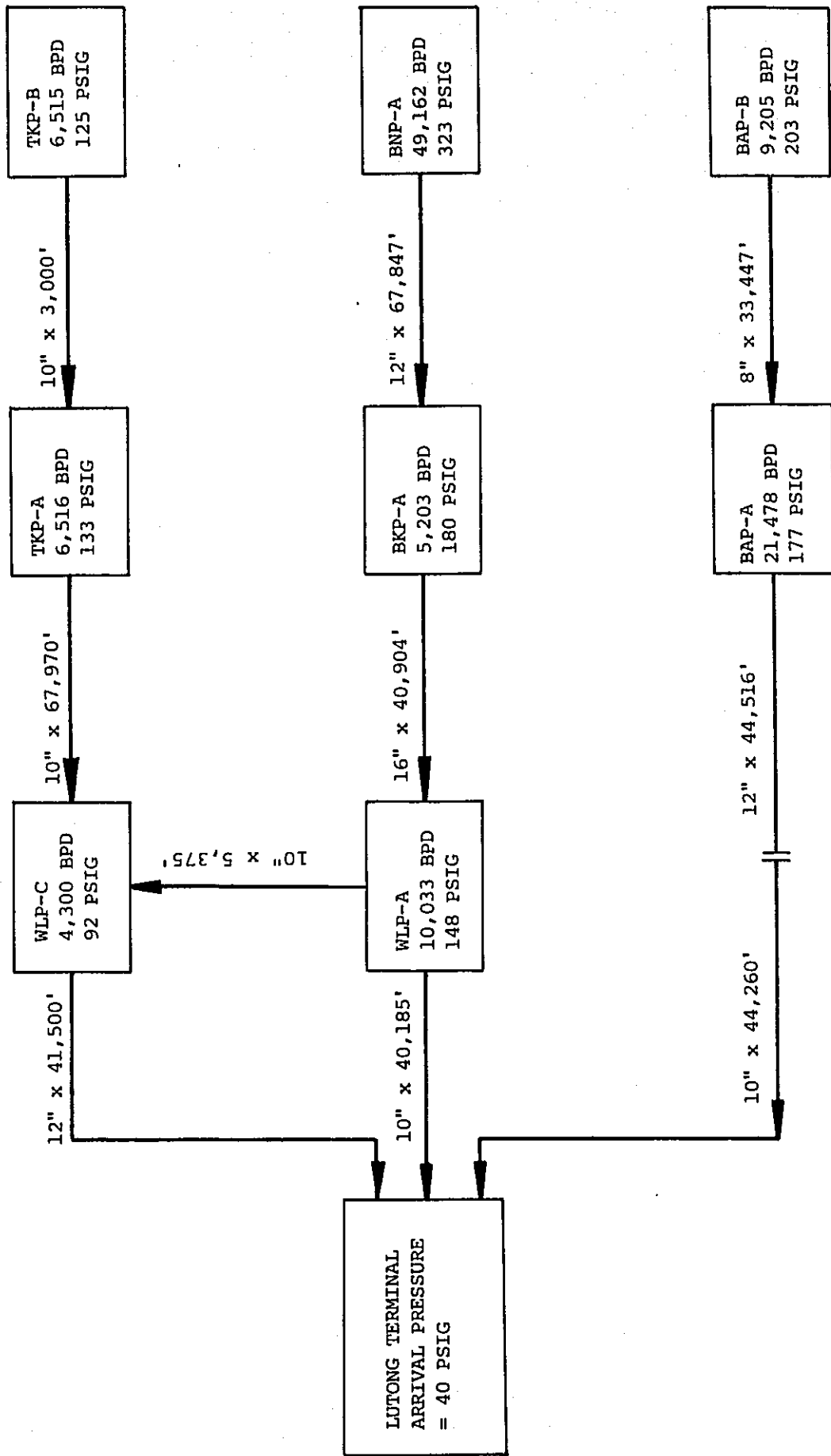


Fig. 13-4-20
(Vol. IV)

FLOW SHEET OF WASH TANK

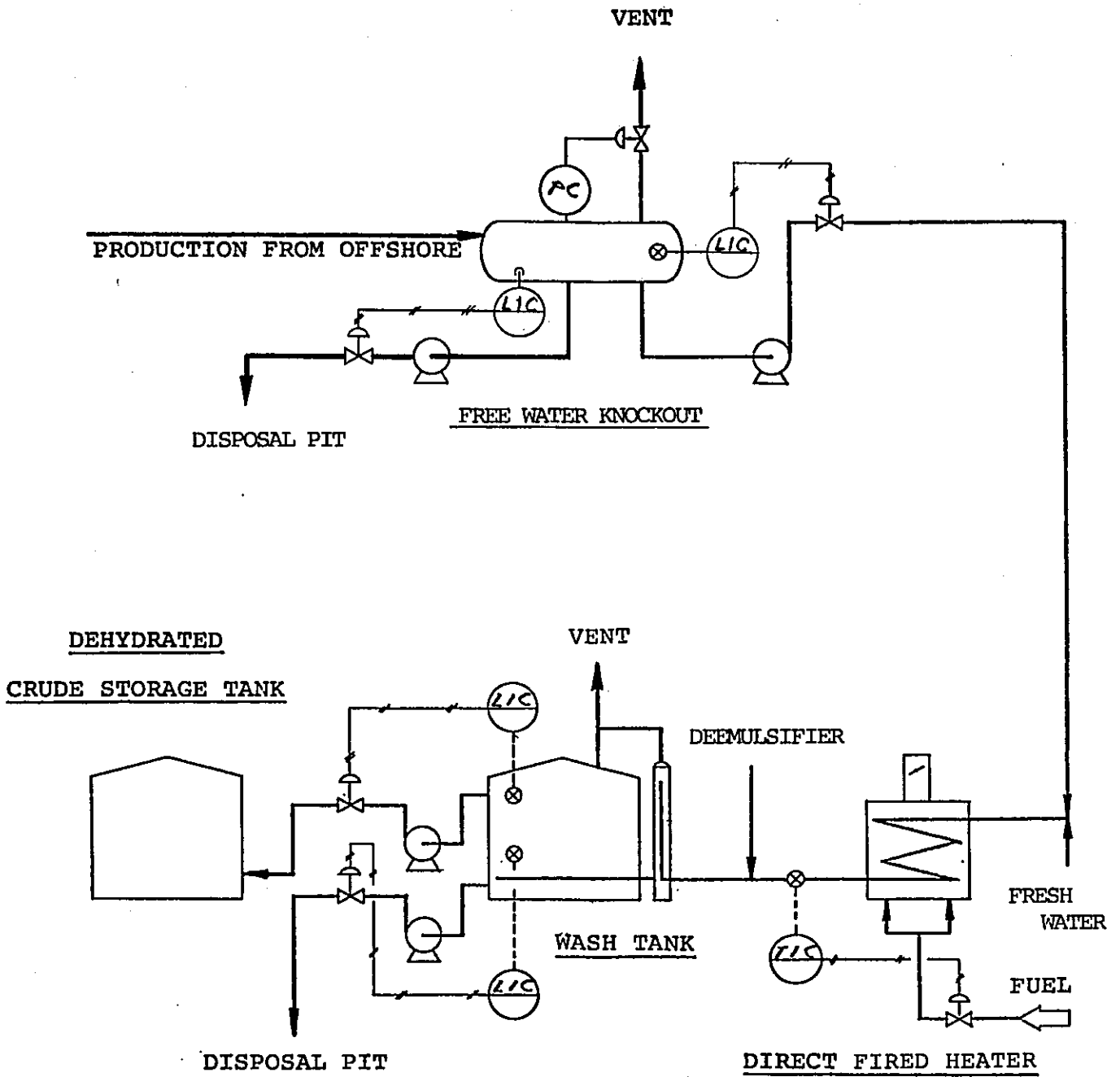


Fig. 13-4-21
(Vol. IV)

BEARING CAPACITY OF SOIL AT LUTONG TERMINAL AND
STRESS FOR 200,000 & 100,000 BBL TANK

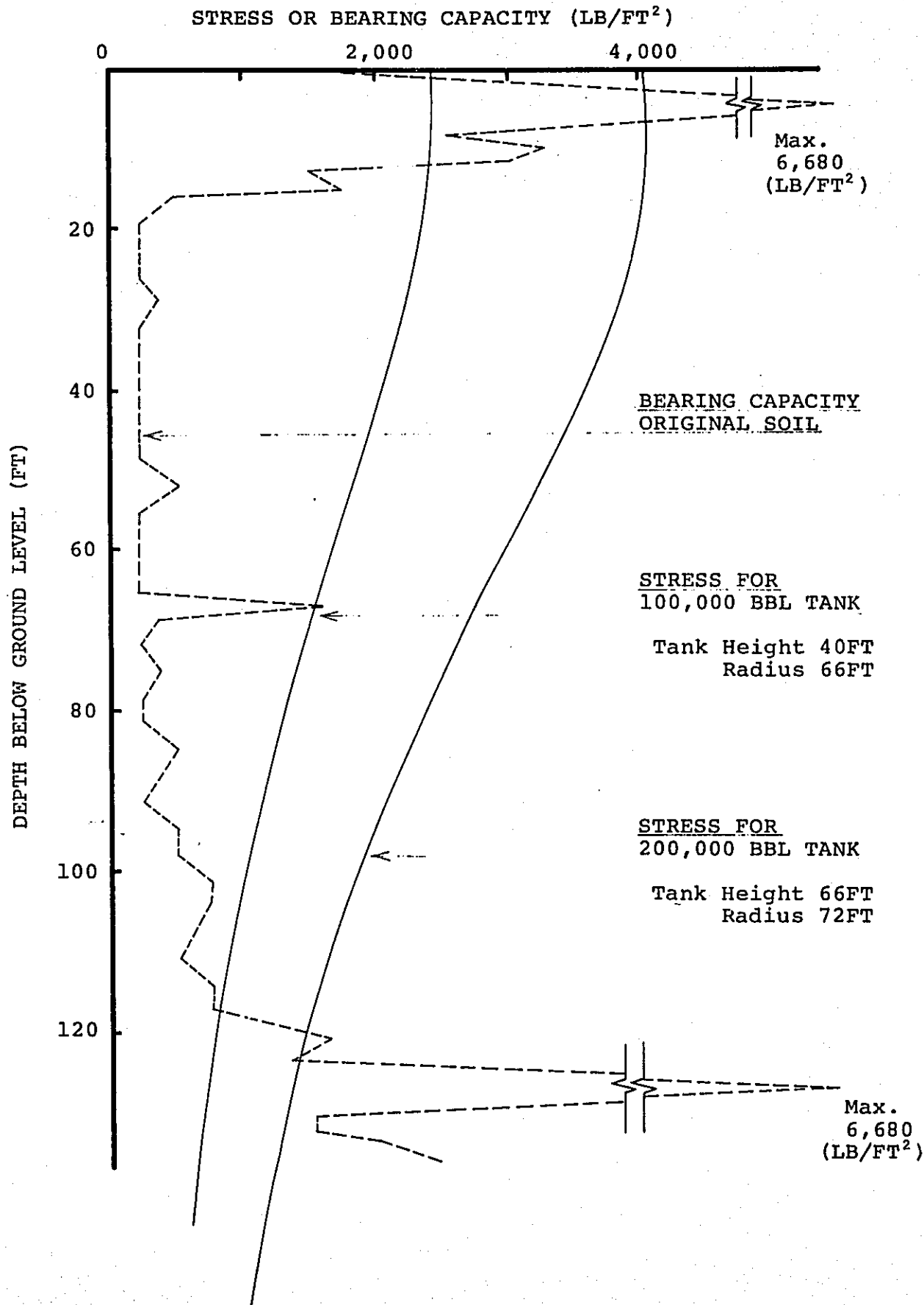


FIG. 14-5-1 (Vol. IV)
FACILITIES ARRANGEMENT

FOR BARONIA OIL FIELD AND B-12 GAS FIELD GAS UTILIZATION - CASE I A

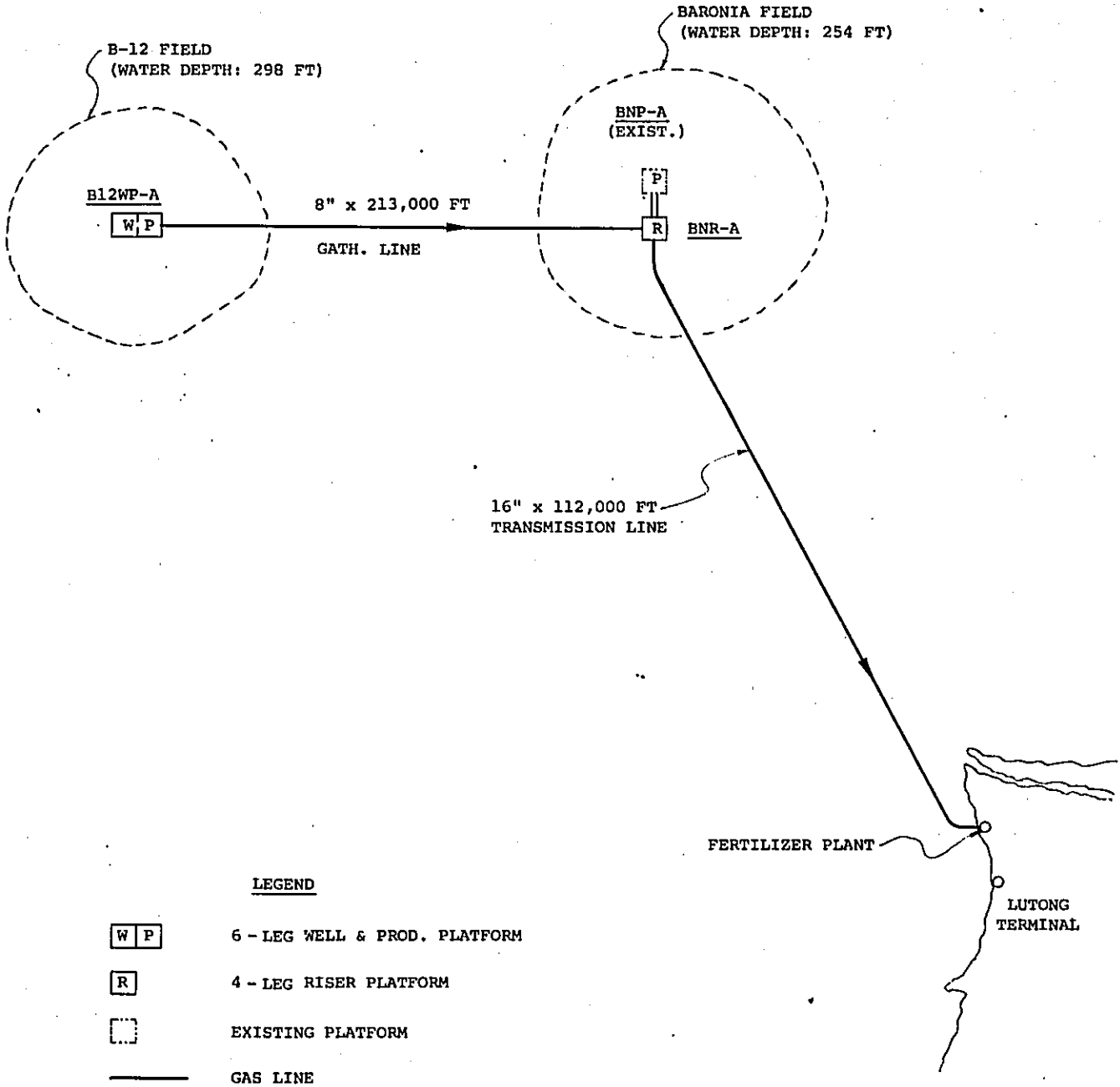
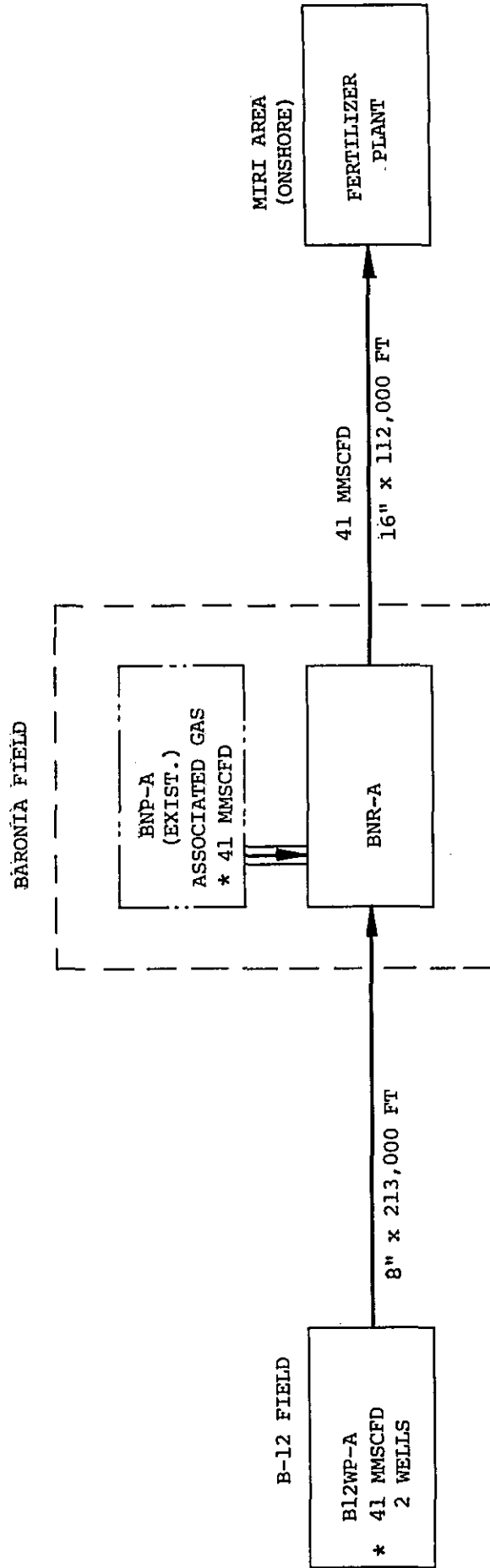


FIG. 14-5-2 (Vol. IV)

BLOCK FLOW DIAGRAM

FOR BARONIA OIL FIELD AND B-12 GAS FIELD GAS UTILIZATION - CASE I A



* Note: B-12 field gas backs up just in case of shut down or drop below 41 MMSCFD of Baronia associated gas production to supply the gas continuously to the fertilizer plant for 20 years.

FIG. 14-5-3 (Vol. IV)

FACILITIES ARRANGEMENT

FOR BARONIA OIL FIELD AND B-12 GAS FIELD GAS UTILIZATION - CASE I B

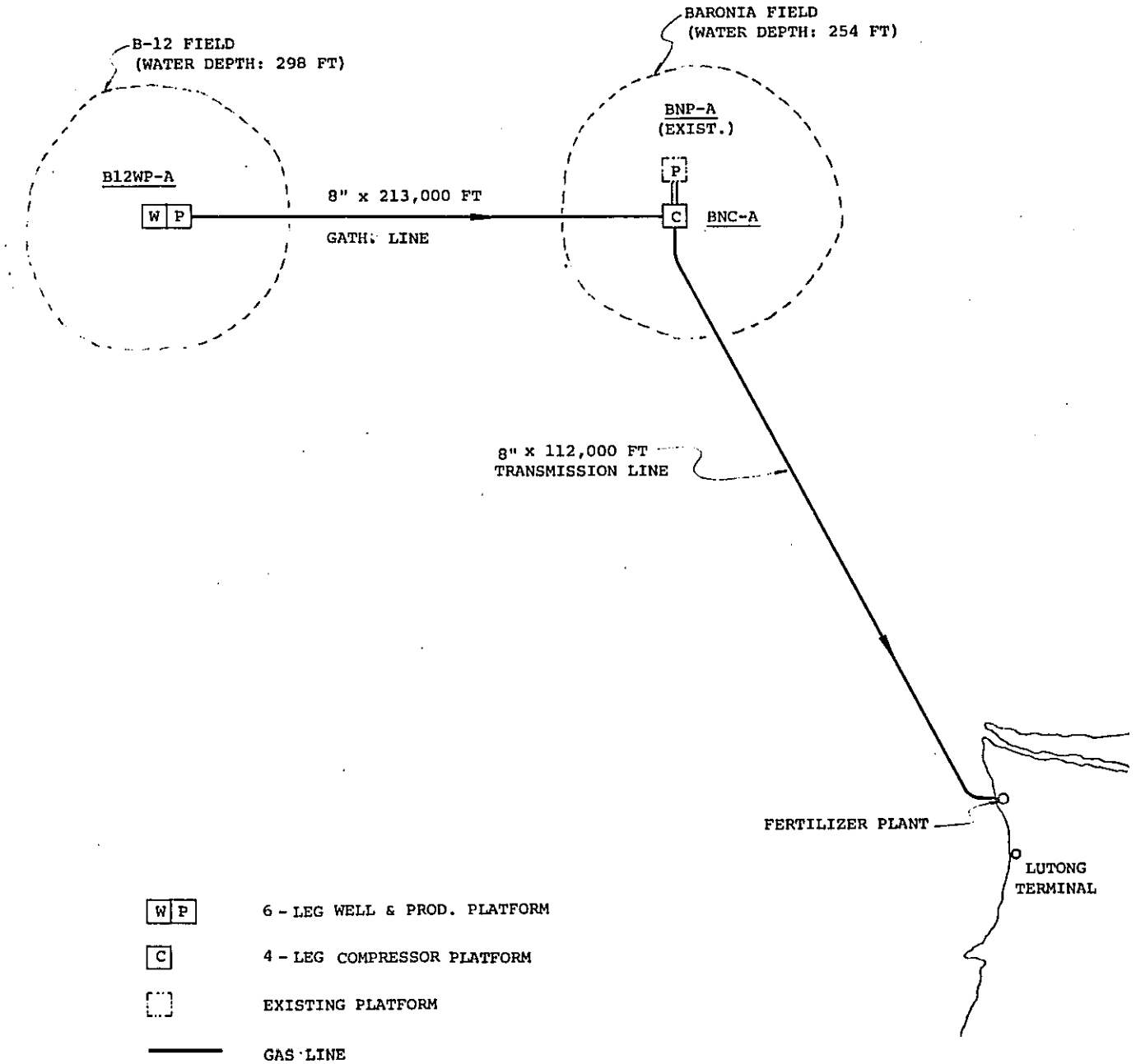
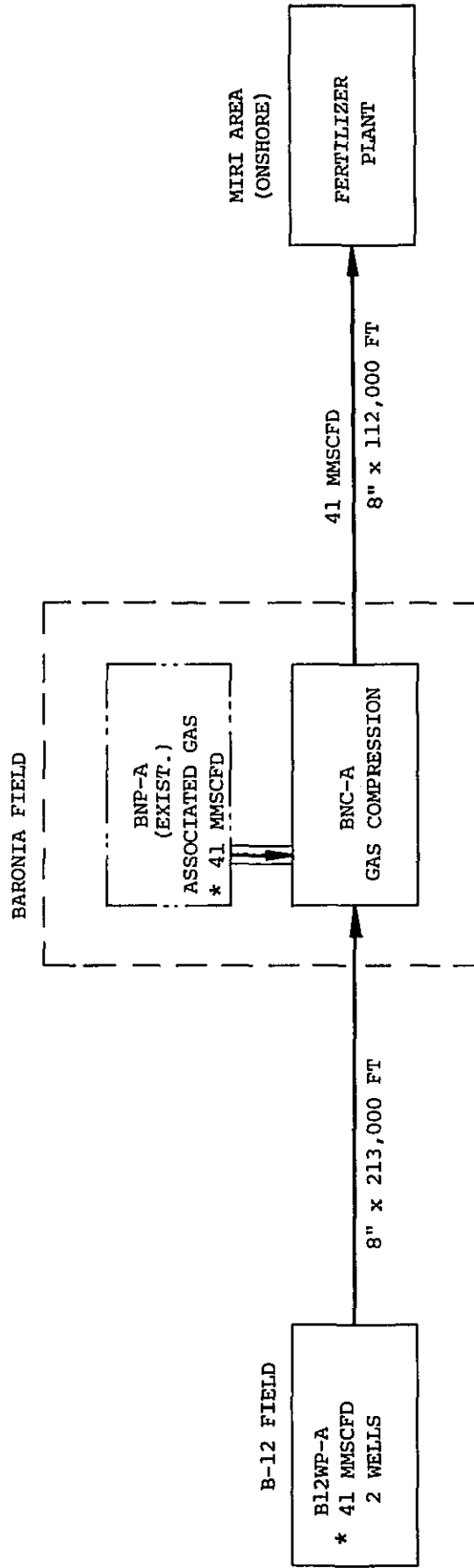


FIG. 14-5-4 (Vol. IV)

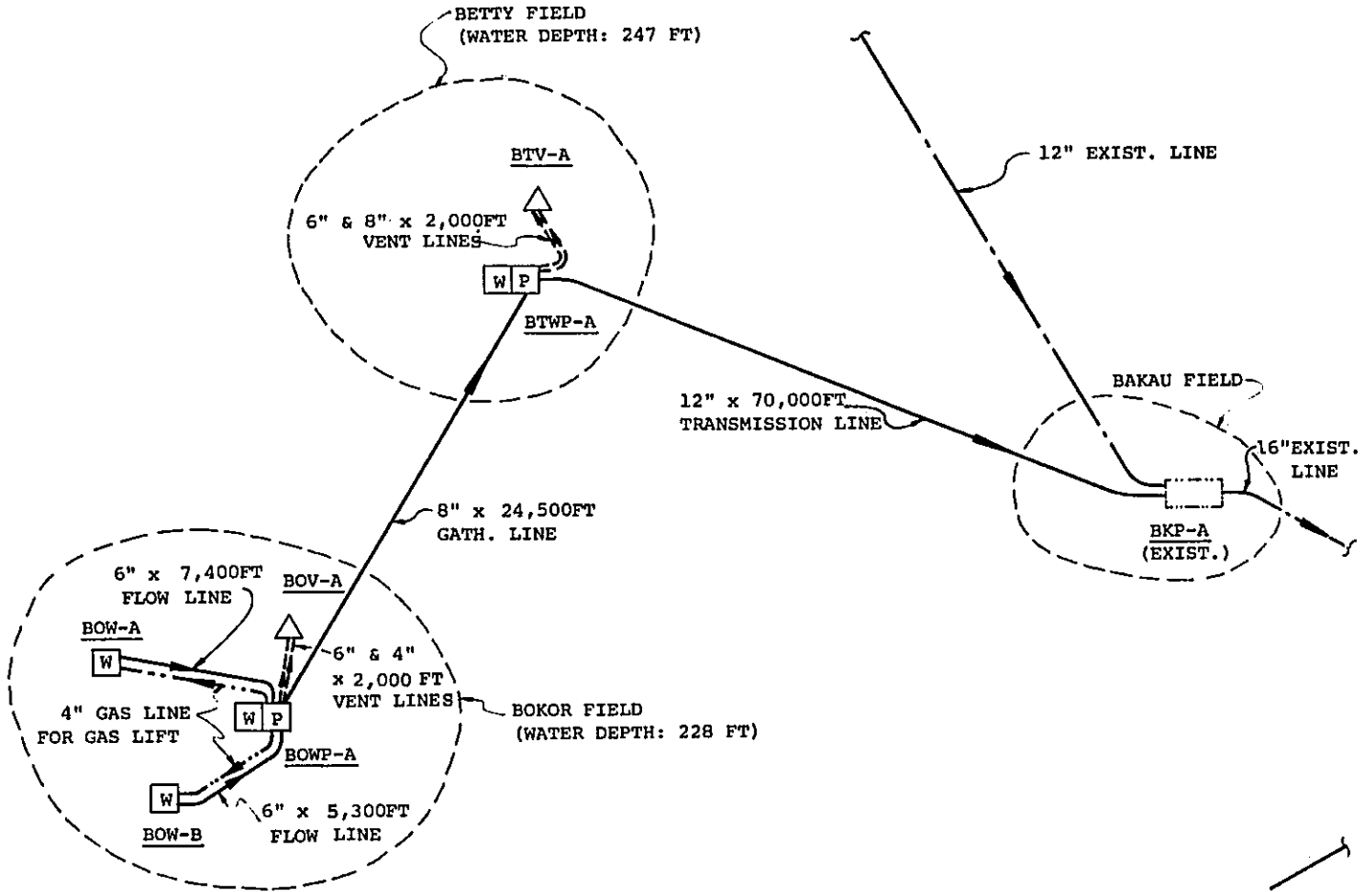
BLOCK FLOW DIAGRAM

FOR BARONIA OIL FIELD AND B-12 GAS FIELD GAS UTILIZATION - CASE I B



* Note: B-12 field gas backs up just in case of shut down or drop below 41 MMSCFD of Baronia associated gas production to supply the gas continuously to the fertilizer plant for 20 years.

FIG. 15-5-1 (Vol. IV)
FACILITIES ARRANGEMENT
FOR BETTY AND BOKOR OIL FIELDS - CASE I



LEGEND

- W P 6 - LEG WELL & PROD. PLATFORM
- W 4 - LEG WELL PLATFORM
- △ VENT JACKET
- EXISTING PLATFORM
- OIL LINE
- - - VENT LINE
- . - . - EXISTING LINE
- · - · - GAS LINE

FIG. 15-5-2 (Vol. IV)

BLOCK FLOW DIAGRAM

FOR BETTY AND BOKOR OIL FIELDS - CASE I

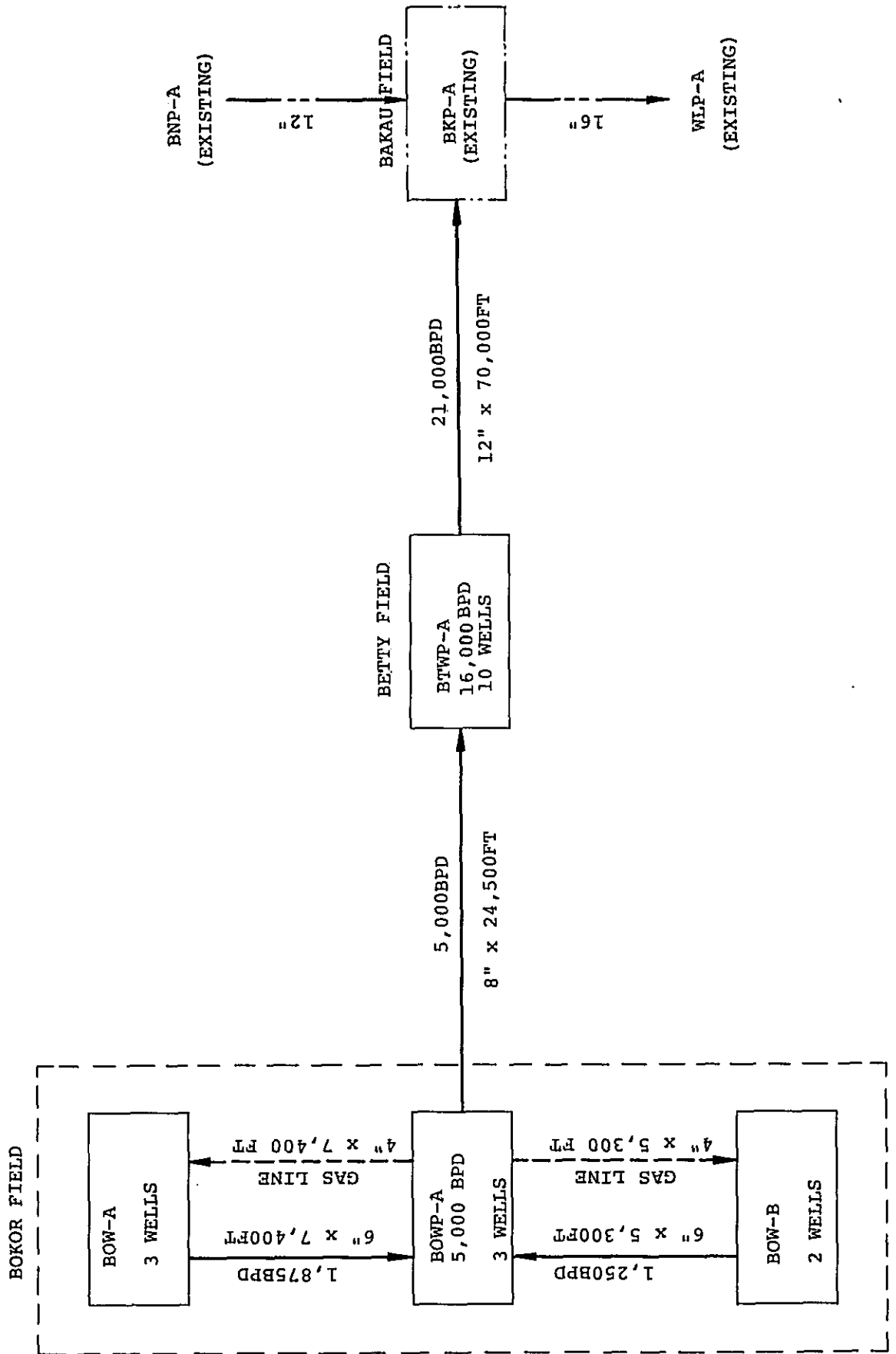


FIG. 15-5-3 (Vol. IV)
FACILITIES ARRANGEMENT
FOR BETTY AND BOKOR OIL FIELDS-CASE II

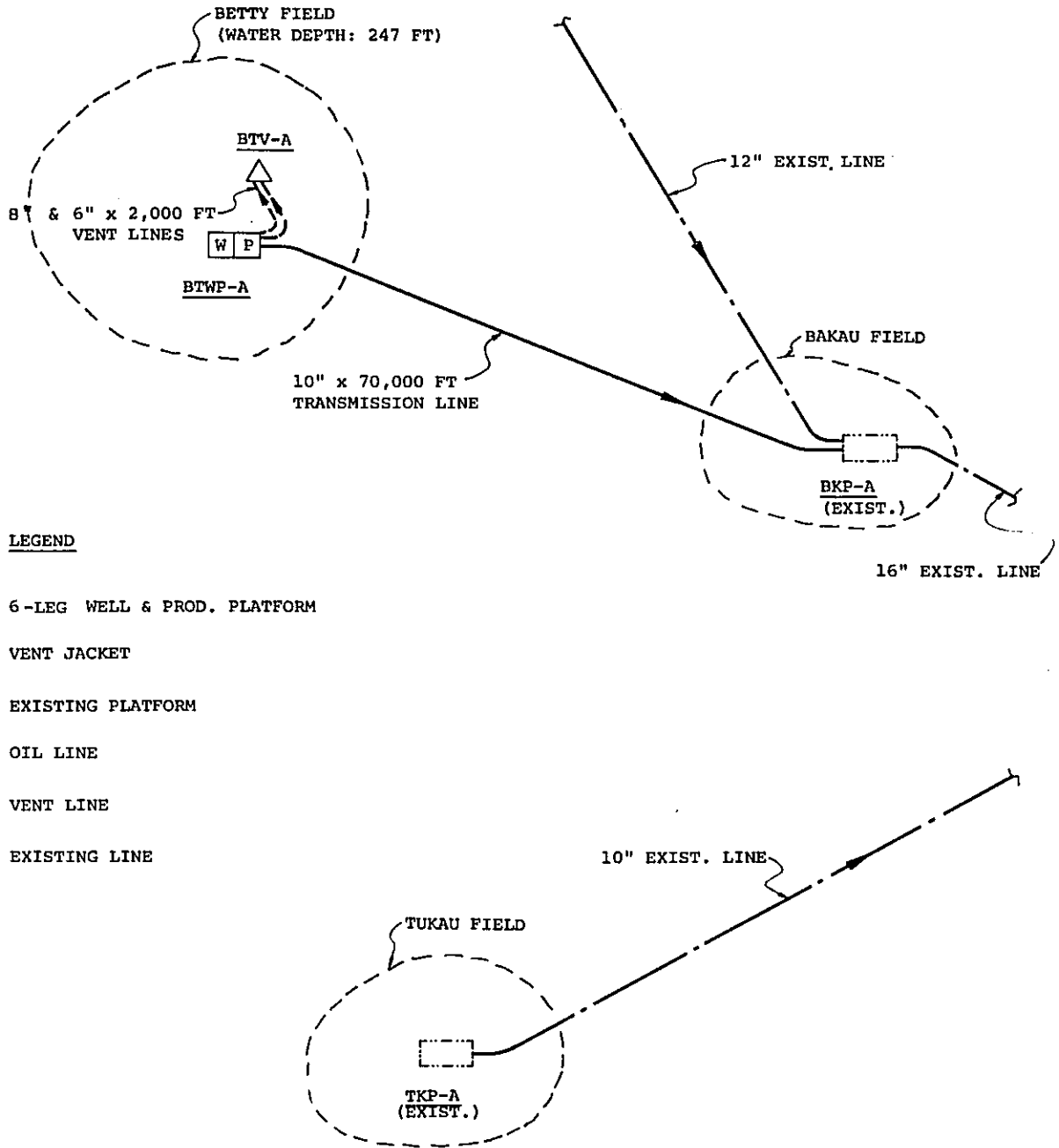


FIG. 15-5-4 (Vol. IV)

BLOCK FLOW DIAGRAM

FOR BETTY AND BOKOR OIL FIELDS - CASE II

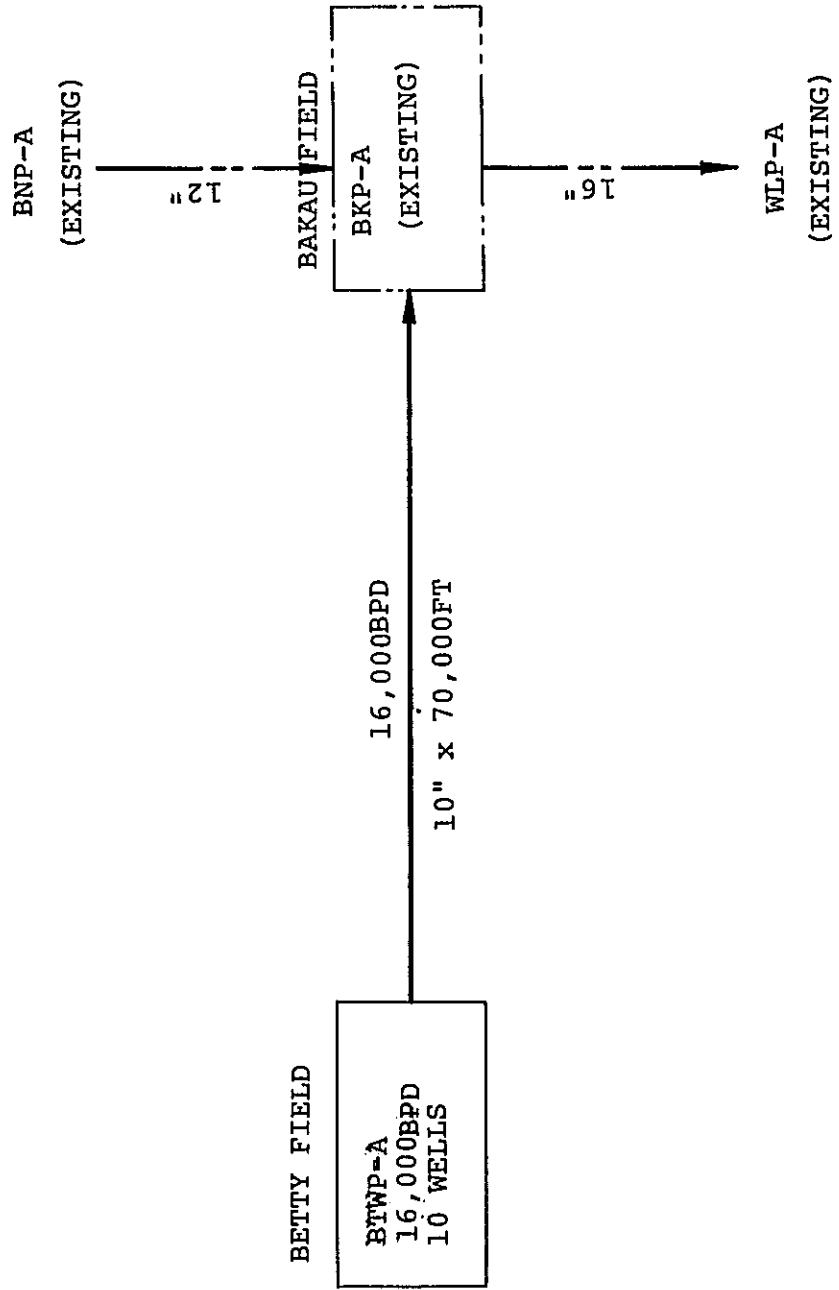
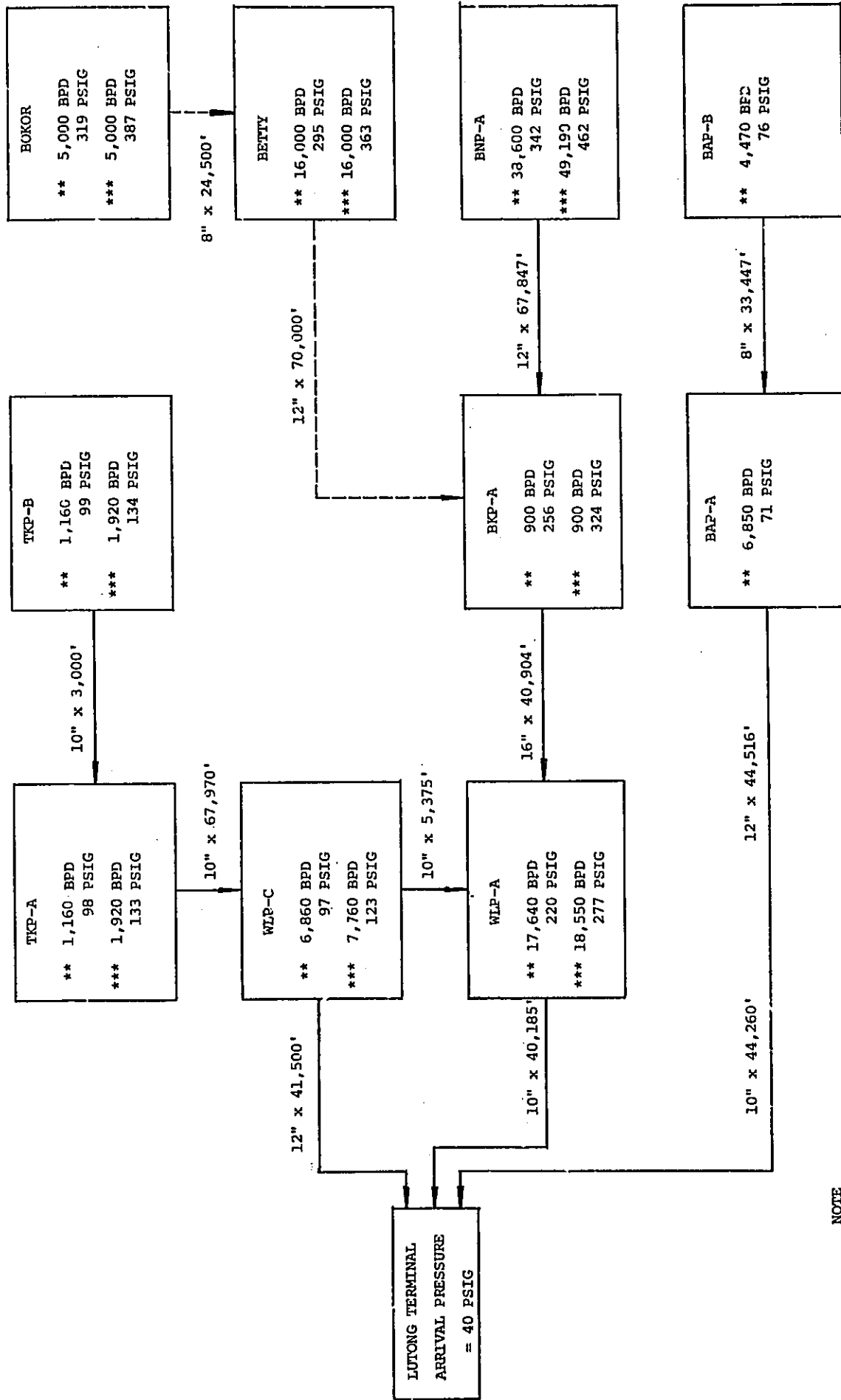


Fig. 15-5-5
(Vol. IV)

LUTONG STREAM PRESSURE BALANCE AT THE PREDICTED
PRODUCTION RATE IN 1981, CASE I (DEVELOPMENT CASE)



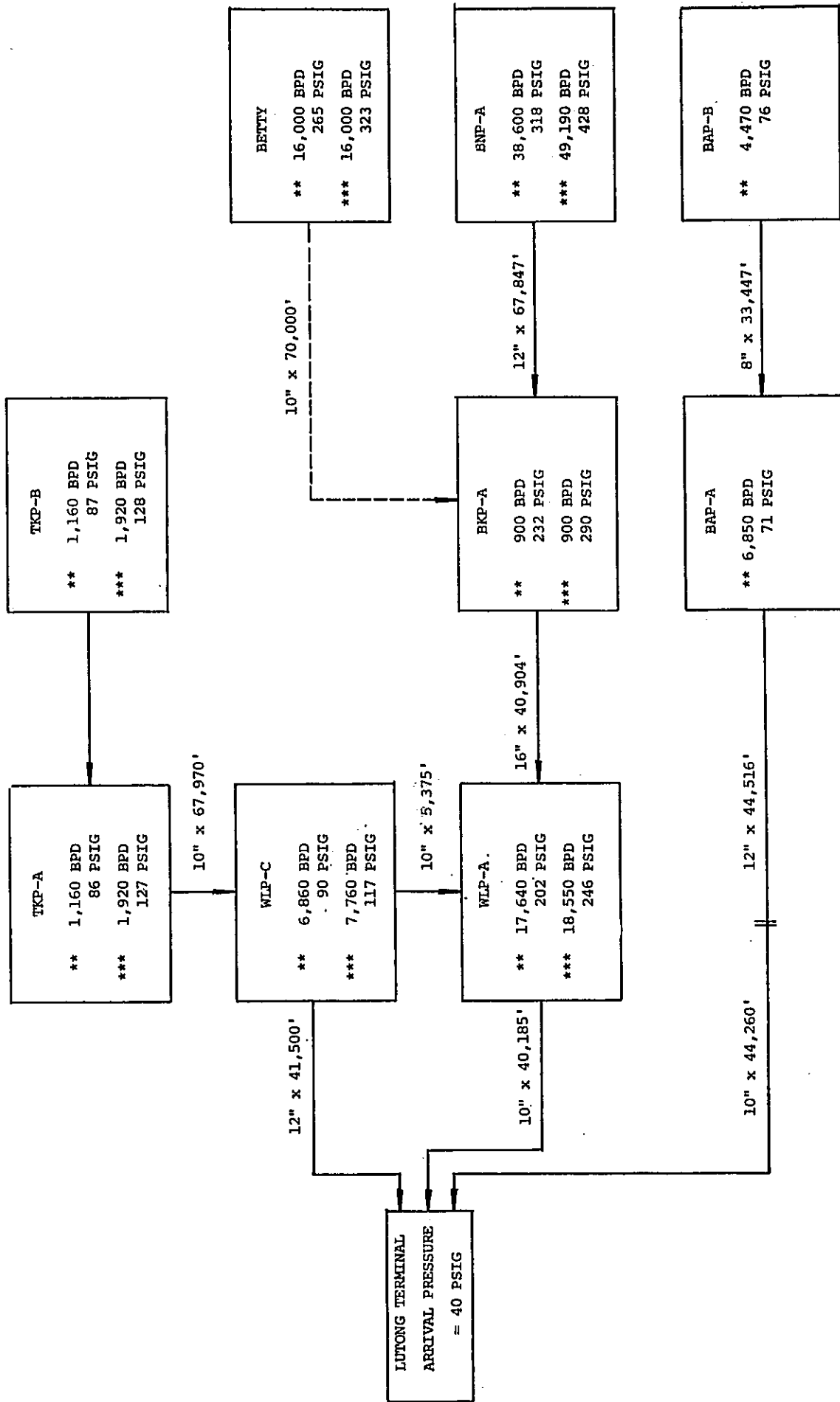
NOTE

** VALUE OF THE PREDICTED PRODUCTION RATE IN 1981.

*** VALUE OF THE PREDICTED PRODUCTION RATE OF ADDITIONAL WELL CASE

Fig. 15-5-6
(Vol. IV)

LUTONG STREAM PRESSURE BALANCE AT THE PREDICTED
PRODUCTION RATE IN 1981, CASE II (DEVELOPMENT CASE)

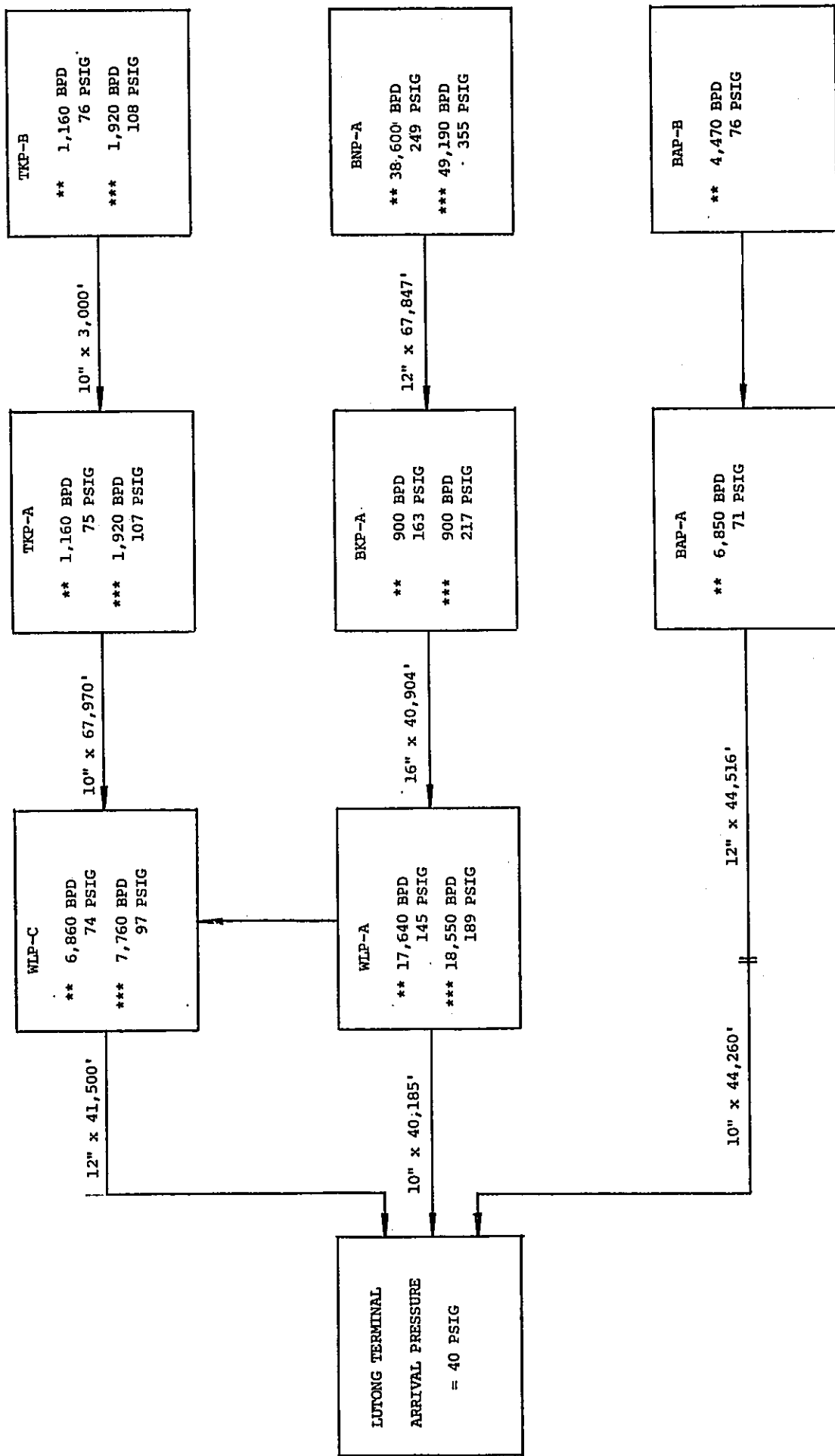


NOTE

** VALUE AT PREDICTED PRODUCTION RATE IN 1981

*** VALUE AT PREDICTED PRODUCTION RATE OF ADDITIONAL WELL CASE

Fig. 15-5-7 LUTONG STREAM PRESSURE BALANCE AT THE PREDICTED
(Vol. IV) PRODUCTION RATE IN 1981, EXISTING FIELDS CASE



NOTE
** VALUE AT PREDICTED PRODUCTION RATE IN 1981
*** VALUE AT PREDICTED PRODUCTION RATE OF ADDITIONAL WELL CASE

FIG. 16-5-1 (Vol. IV)
 FACILITIES ARRANGEMENT
 FOR WEST TEMANA AND E-6 OIL FIELDS - CASE I

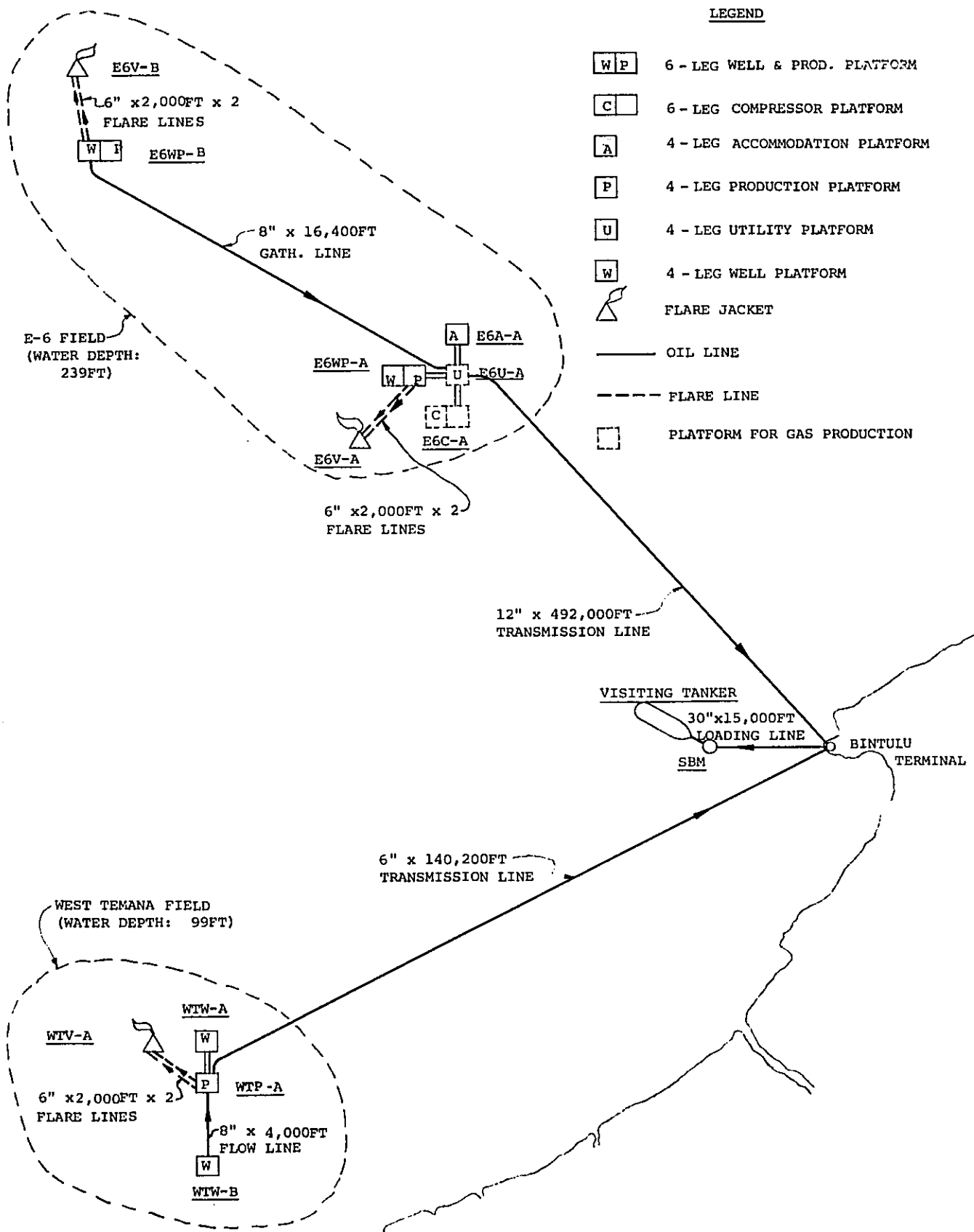


FIG. 16-5-2 (Vol. IV)

BLOCK FLOW DIAGRAM

FOR WEST TEMANA AND E-6 OIL FIELDS-CASE I

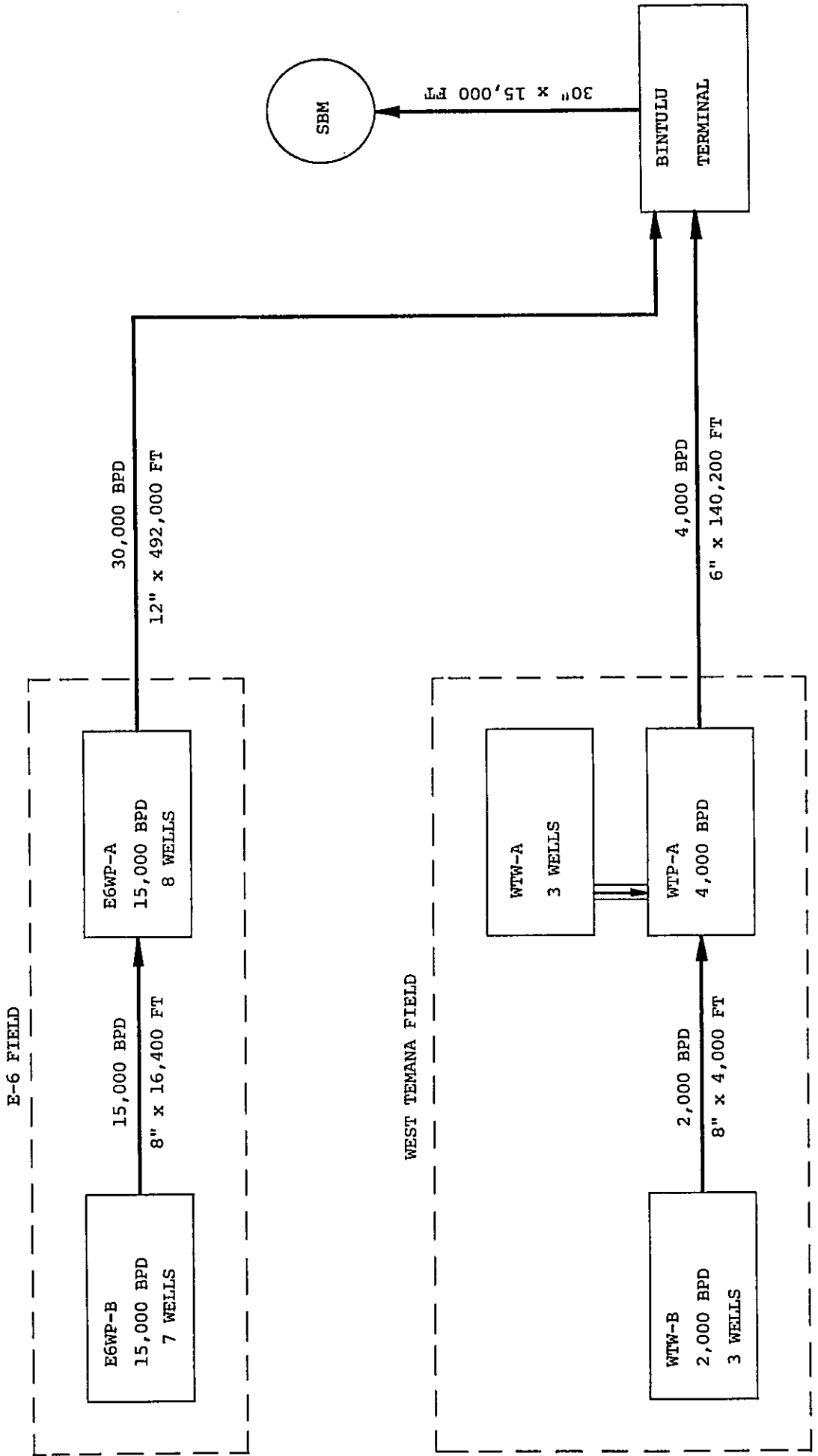


FIG. 16-5-3 (Vol. IV)
FACILITIES ARRANGEMENT
FOR WEST TEMANA AND E-6 OIL FIELDS - CASE II A

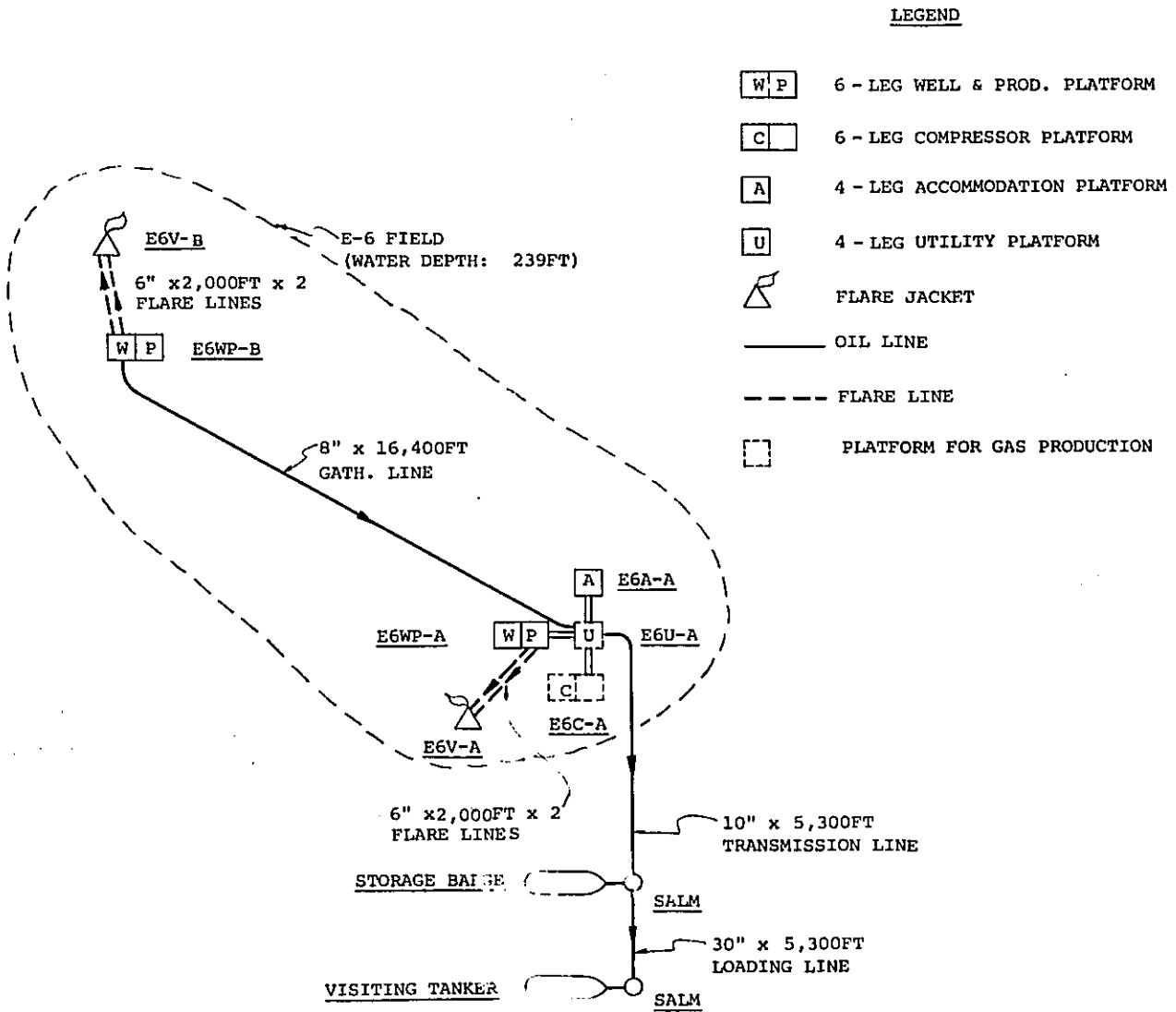


FIG. 16-5-4 (Vol. IV)

BLOCK FLOW DIAGRAM

FOR WEST TEMANA AND E-6 FIELDS - CASE II A

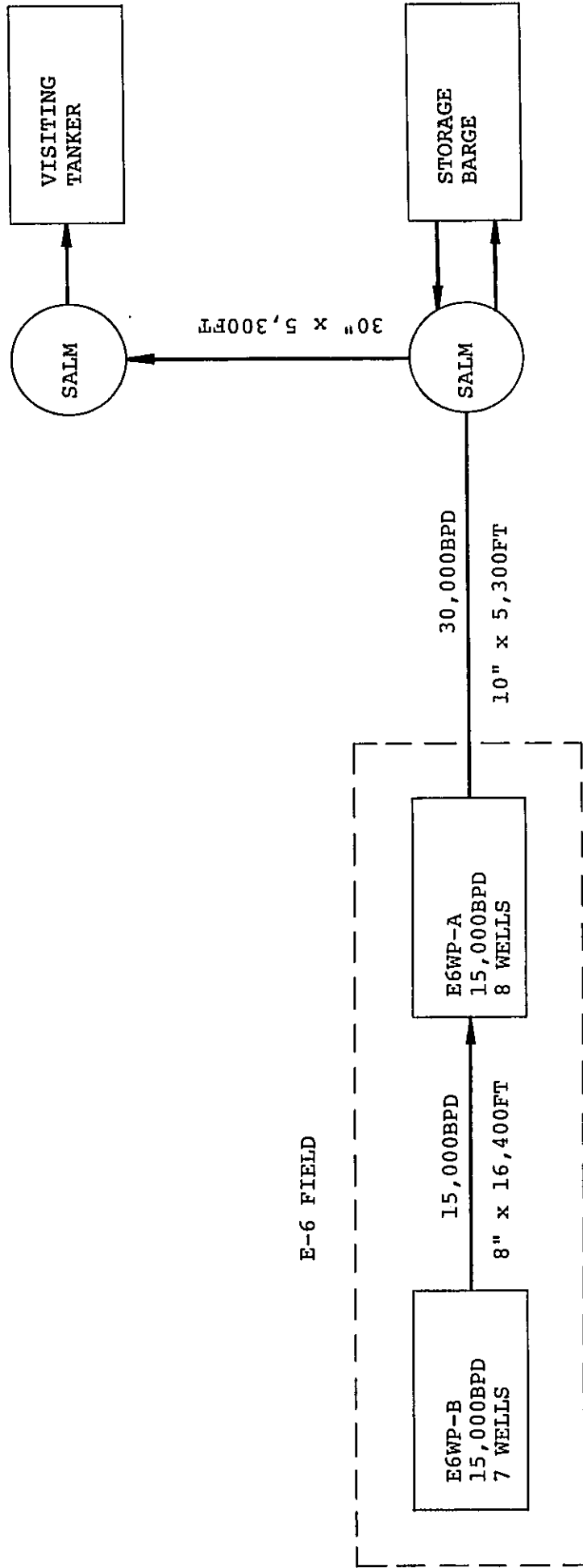


FIG. 16-5-5 (Vol IV)
FACILITIES ARRANGEMENT
FOR WEST TEMANA AND E-6 OIL FIELDS - CASE II B

LEGEND

- W P 6-LEG WELL & PROD. PLATFORM
- C 6-LEG COMPRESSOR PLATFORM
- U 4-LEG UTILITY PLATFORM
- A 4-LEG ACCOMMODATION PLATFORM
- FLARE JACKET
- OIL LINE
- FLARE LINE
- PLATFORM FOR GAS PRODUCTION

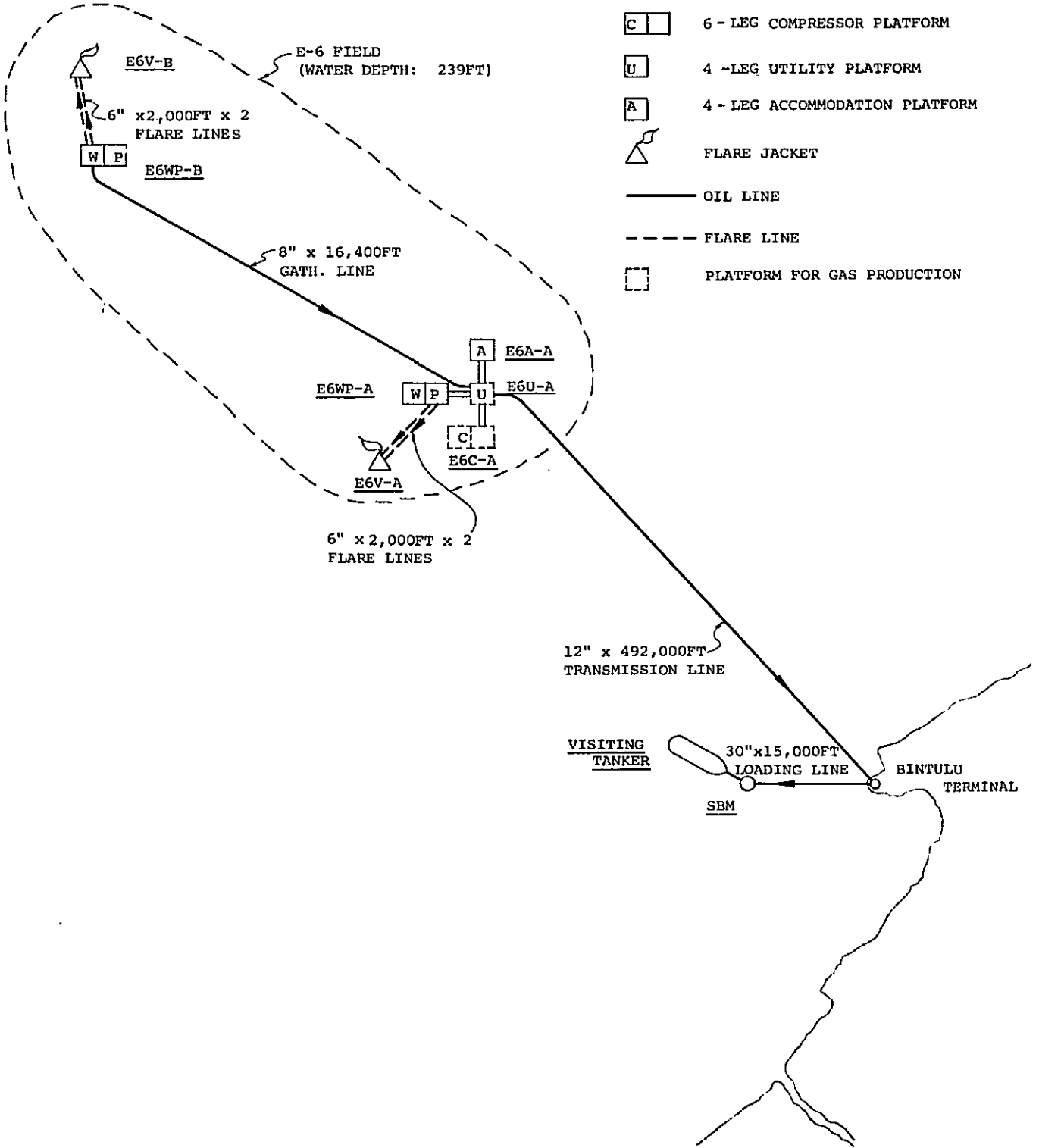


FIG. 16-5-6 (Vol. IV)

BLOCK FLOW DIAGRAM

FOR WEST TEMANA AND E-6 OIL FIELDS - CASE II B

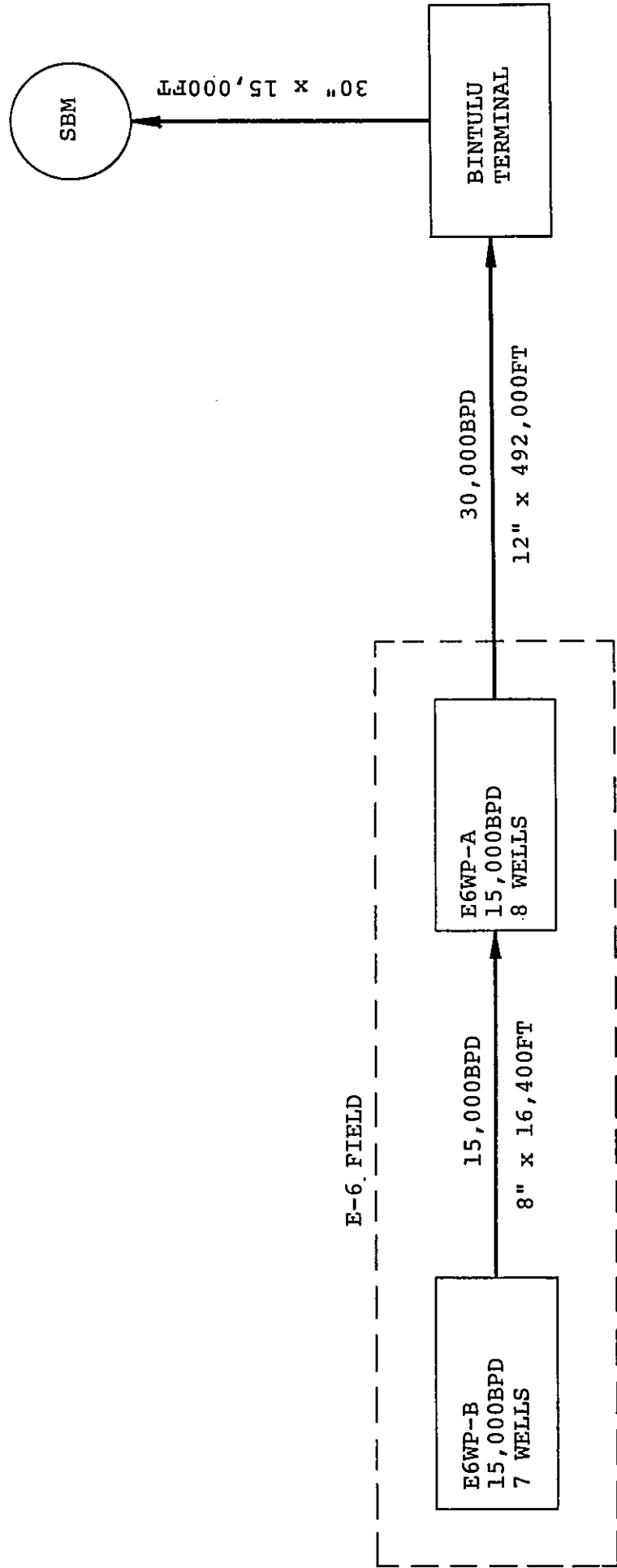


Fig. 16-6-1 (Vol. IV)

PROJECT SCHEDULE

WEST TEMANA AND E-6 OIL FIELDS CASE II B

Item	Year																							
	1st			2nd			3rd																	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1. Engineering	[Gantt bar spanning from Year 1 to Year 12]																							
2. E-6	[Gantt bar spanning from Year 1 to Year 12]																							
Development Well	[Gantt bar spanning from Year 1 to Year 12]																							
15 Wells	[Gantt bar spanning from Year 1 to Year 12]																							
Well & Production Platform	[Gantt bar spanning from Year 1 to Year 12]																							
6-leg x 2	[Gantt bar spanning from Year 1 to Year 12]																							
Flare Jacket	[Gantt bar spanning from Year 1 to Year 12]																							
3-leg x 2	[Gantt bar spanning from Year 1 to Year 12]																							
Accommodation Platform	[Gantt bar spanning from Year 1 to Year 12]																							
4-leg	[Gantt bar spanning from Year 1 to Year 12]																							
Submarine Pipeline	[Gantt bar spanning from Year 1 to Year 12]																							
12"x492,000'	[Gantt bar spanning from Year 1 to Year 12]																							
8" x 16,400'	[Gantt bar spanning from Year 1 to Year 12]																							
6"x2,000' x4	[Gantt bar spanning from Year 1 to Year 12]																							
3. Onshore Terminal & Loading Facilities	[Gantt bar spanning from Year 1 to Year 12]																							
4. Support Facilities	[Gantt bar spanning from Year 1 to Year 12]																							
5. Start - up	[Gantt bar spanning from Year 1 to Year 12]																							

FIG. 17-5-1 (Vol. IV)
FACILITIES ARRANGEMENT
FOR CENTRAL LUCONIA GAS FIELDS- CASE I A

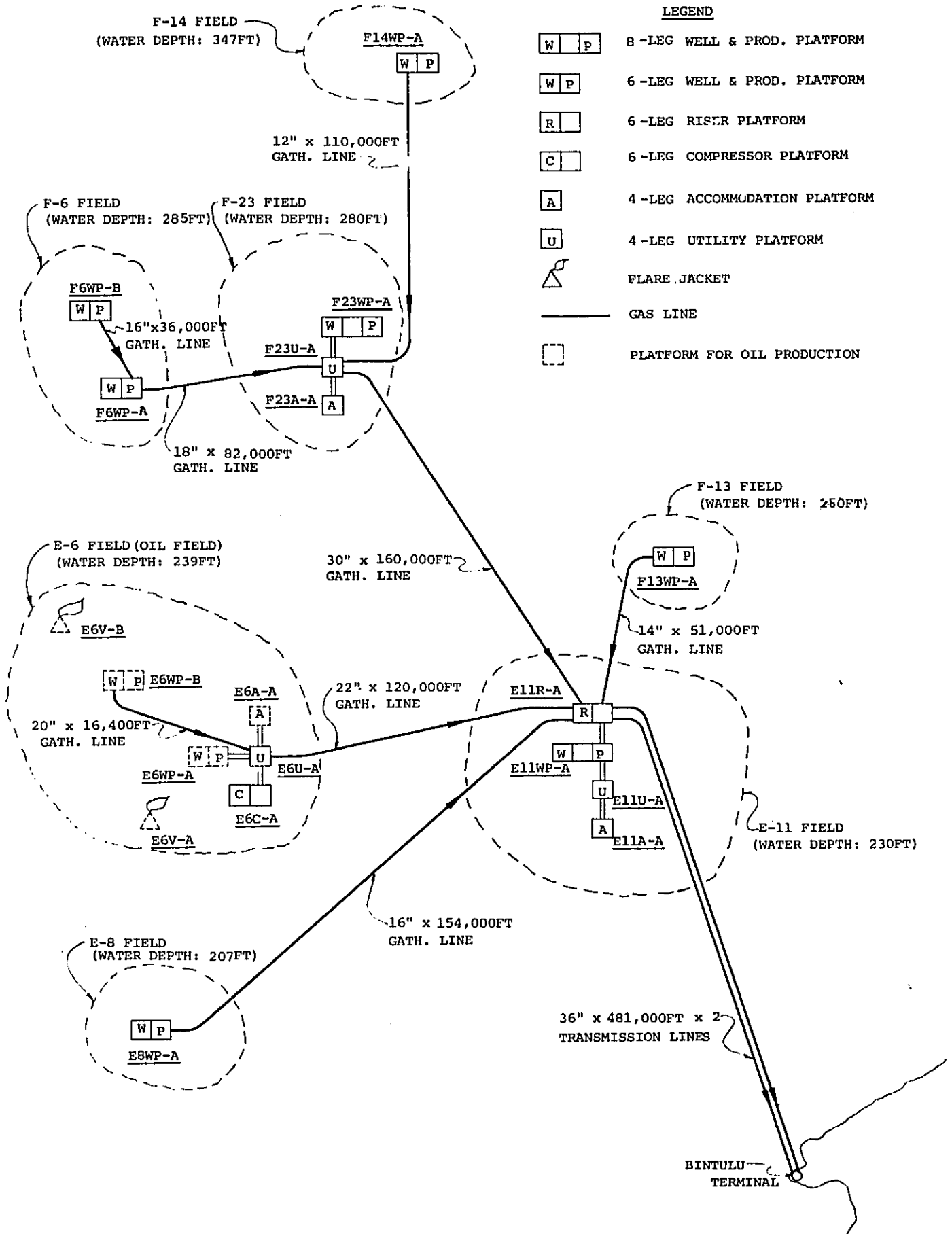


FIG. 17-5-2 (Vol. IV)

BLOCK FLOW DIAGRAM

FOR CENTRAL LUCONIA GAS FIELDS- CASE I A

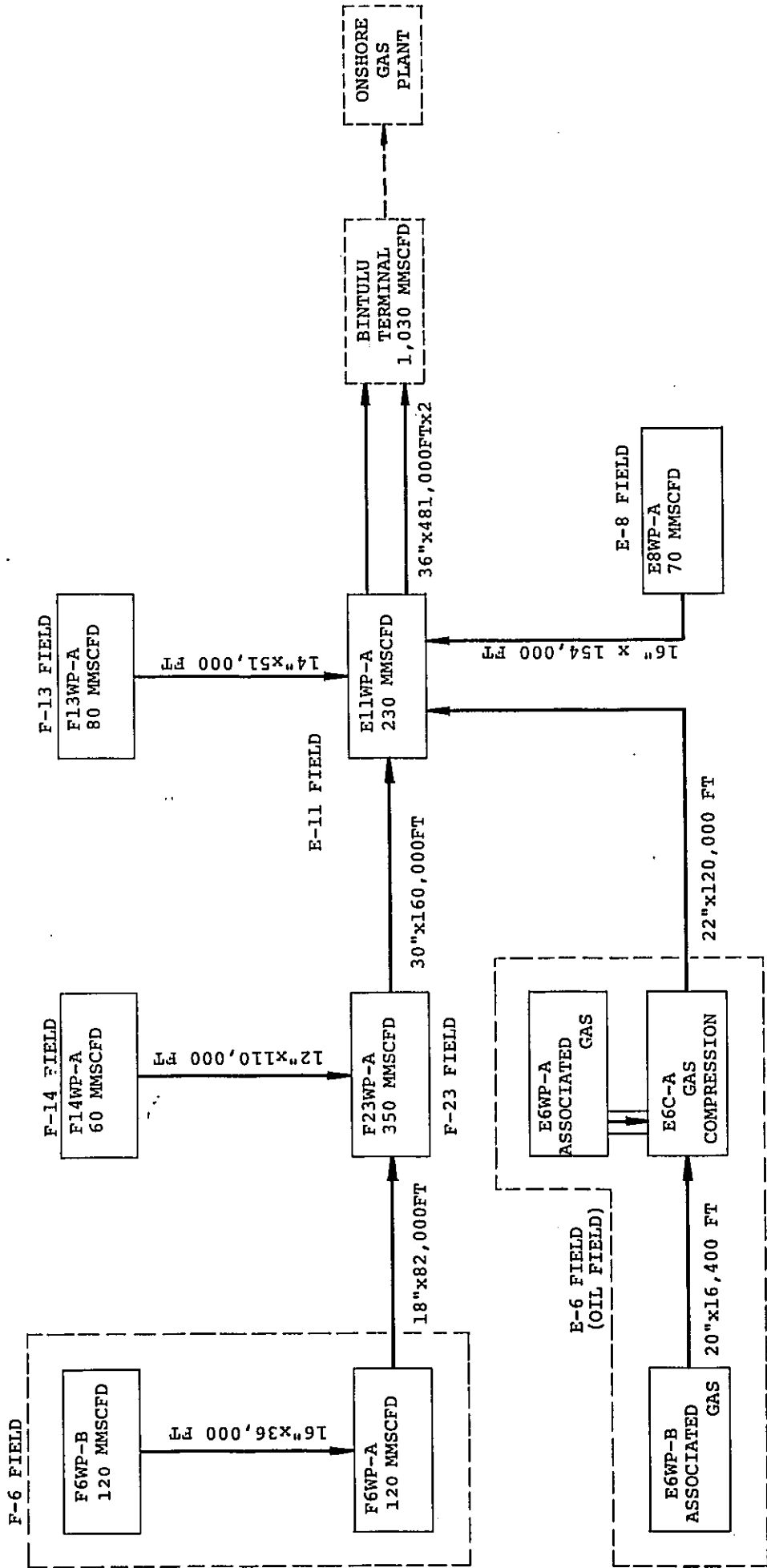


FIG. 17-5-3 (Vol. IV)

FACILITIES ARRANGEMENT
FOR CENTRAL LUCONIA GAS FIELDS- CASE 1B

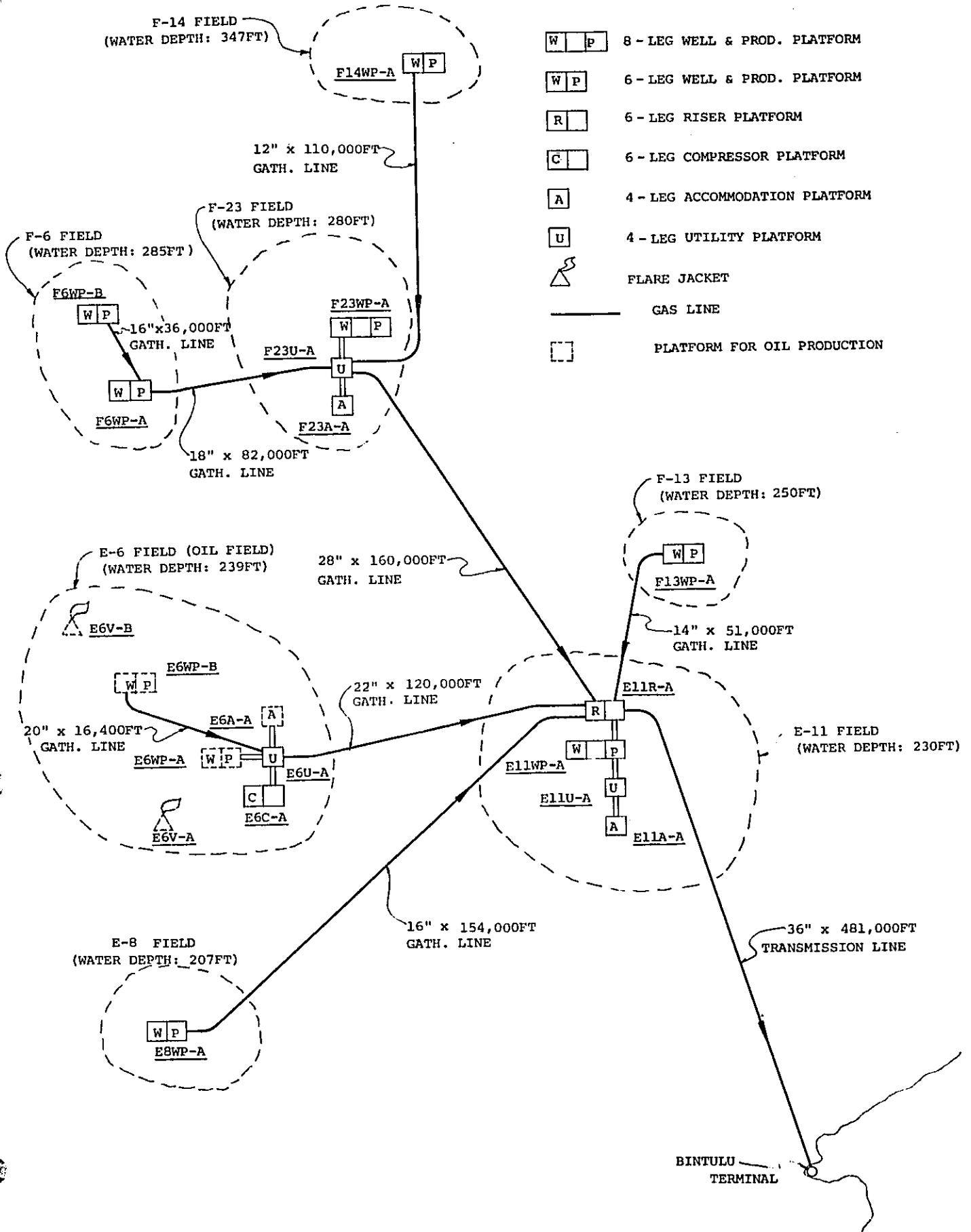
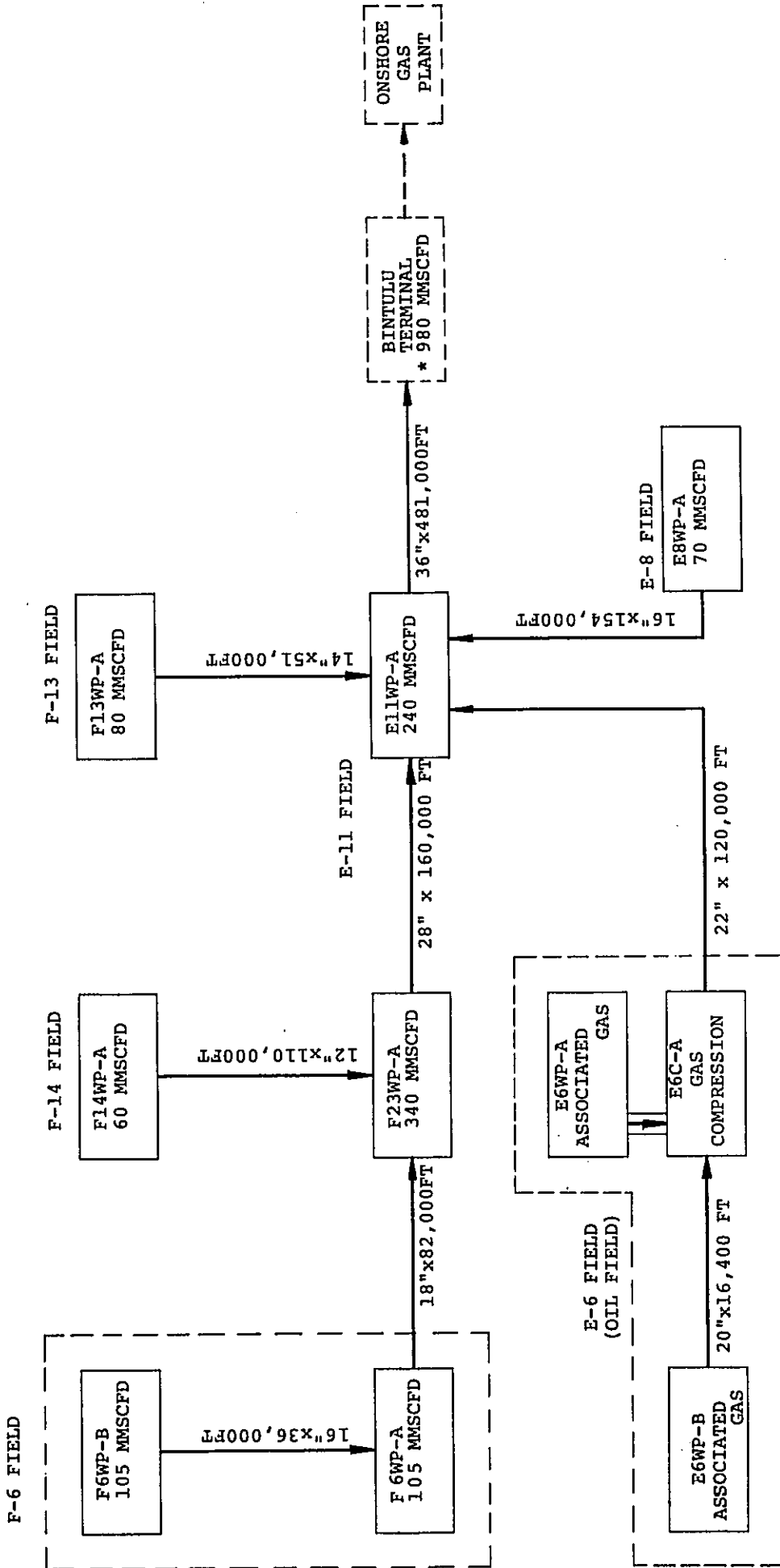


FIG. 17-5-4 (Vol. IV)

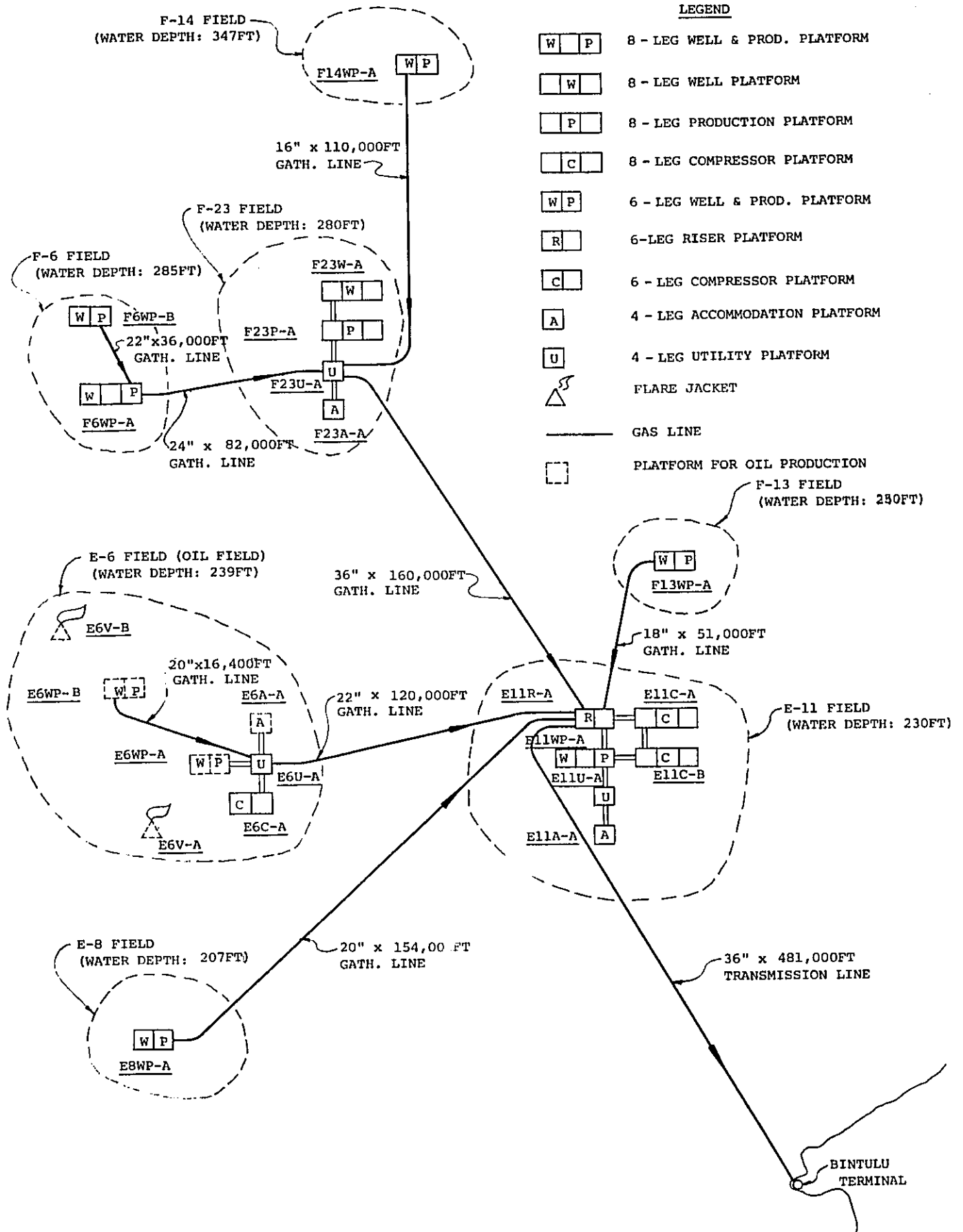
BLOCK FLOW DIAGRAM

FOR CENTRAL LUCONIA GAS FIELDS- CASE IB



* Note: Total deliverability (1,000 MMSCFD) consists of net deliverability (980 MMSCFD) and fuel consumption (20 MMSCFD).

FIG. 17-5-5 (Vol. IV)
FACILITIES ARRANGEMENT
FOR CENTRAL LUCONIA GAS FIELDS- CASE IC



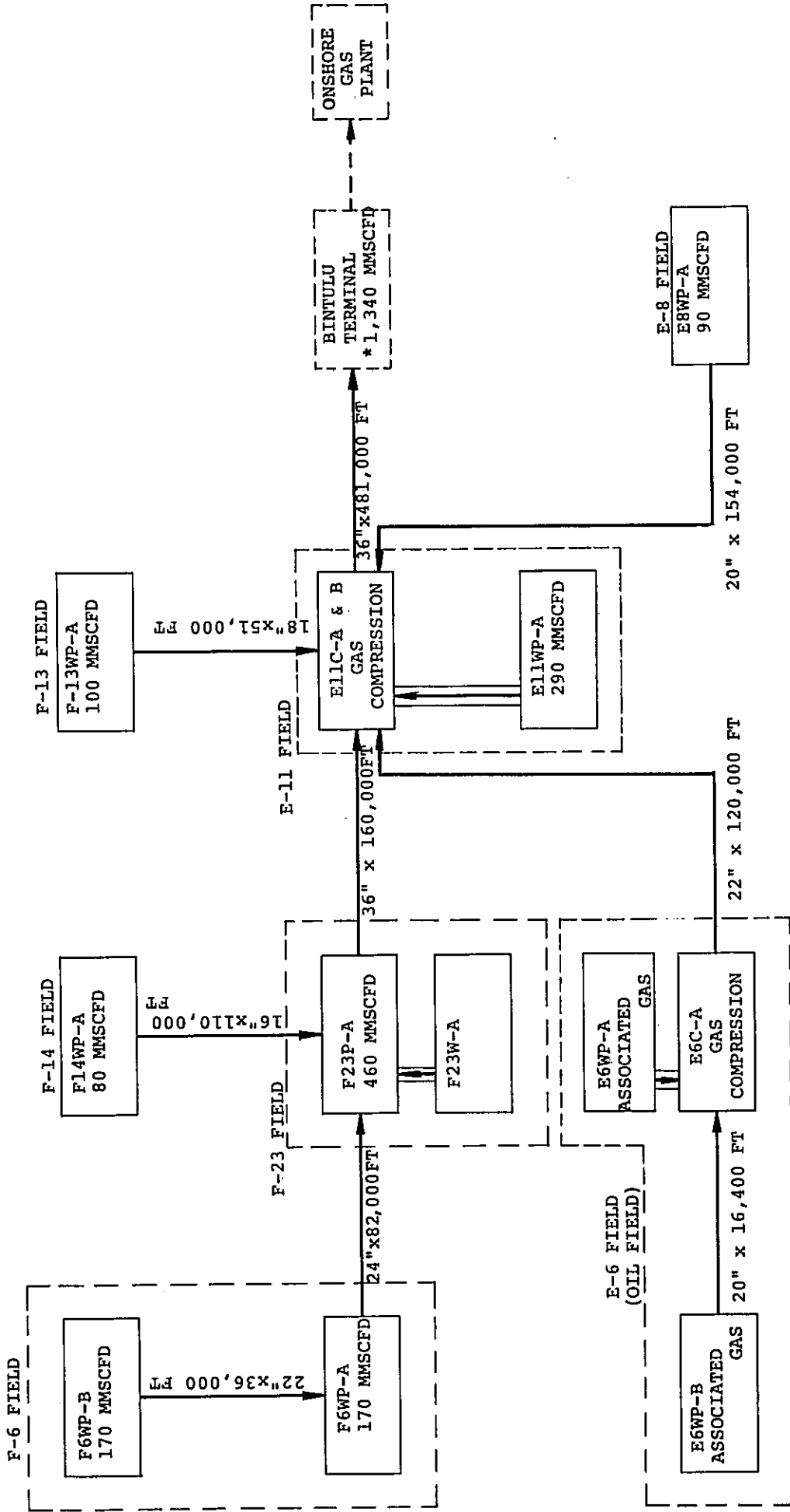
LEGEND

- 8 - LEG WELL & PROD. PLATFORM
- 8 - LEG WELL PLATFORM
- 8 - LEG PRODUCTION PLATFORM
- 8 - LEG COMPRESSOR PLATFORM
- 6 - LEG WELL & PROD. PLATFORM
- 6-LEG RISER PLATFORM
- 6 - LEG COMPRESSOR PLATFORM
- 4 - LEG ACCOMMODATION PLATFORM
- 4 - LEG UTILITY PLATFORM
- FLARE JACKET
- GAS LINE
- PLATFORM FOR OIL PRODUCTION

FIG. 17-5-6 (Vol. IV)

BLOCK FLOW DIAGRAM

FOR CENTRAL LUCONIA GAS FIELDS- CASE 1C



*Note: Total deliverability (1,360 MMSCFD) consists of net deliverability (1,340 MMSCFD) and fuel consumption (20 MMSCFD)

FIG. 17-5-7 (Vol. IV)
FACILITIES ARRANGEMENT
FOR CENTRAL LUCONIA GAS FIELDS- CASE II

LEGEND

	8 - LEG WELL & PROD. PLATFORM
	8 - LEG WELL PLATFORM
	8 - LEG PRODUCTION PLATFORM
	8 - LEG COMPRESSOR PLATFORM
	6 - LEG WELL & PROD. PLATFORM
	6 - LEG RISER PLATFORM
	6 - LEG COMPRESSOR PLATFORM
	4 - LEG ACCOMMODATION PLATFORM
	4 - LEG UTILITY PLATFORM
	FLARE JACKET
	GAS LINE
	PLATFORM FOR OIL PRODUCTION

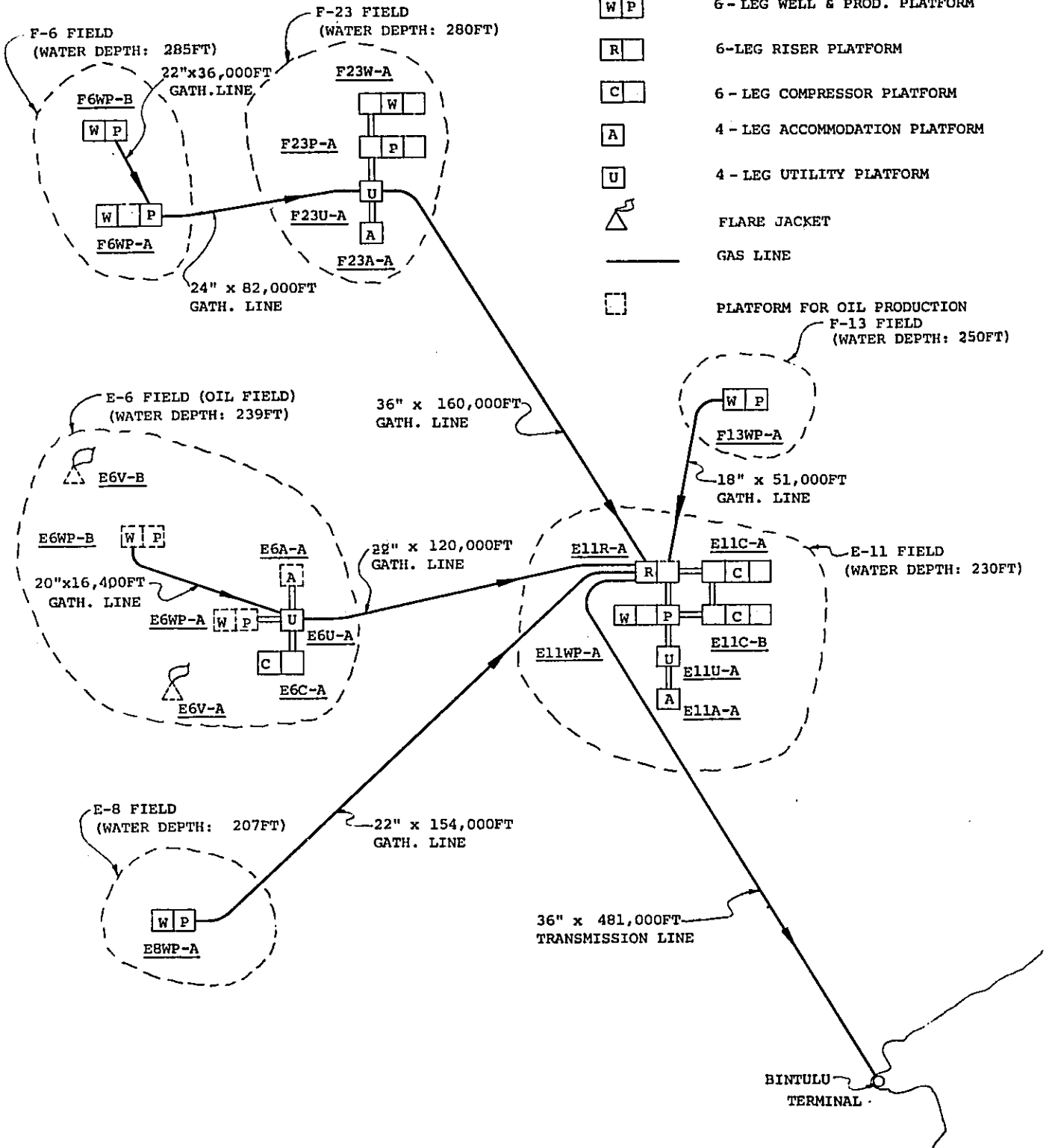
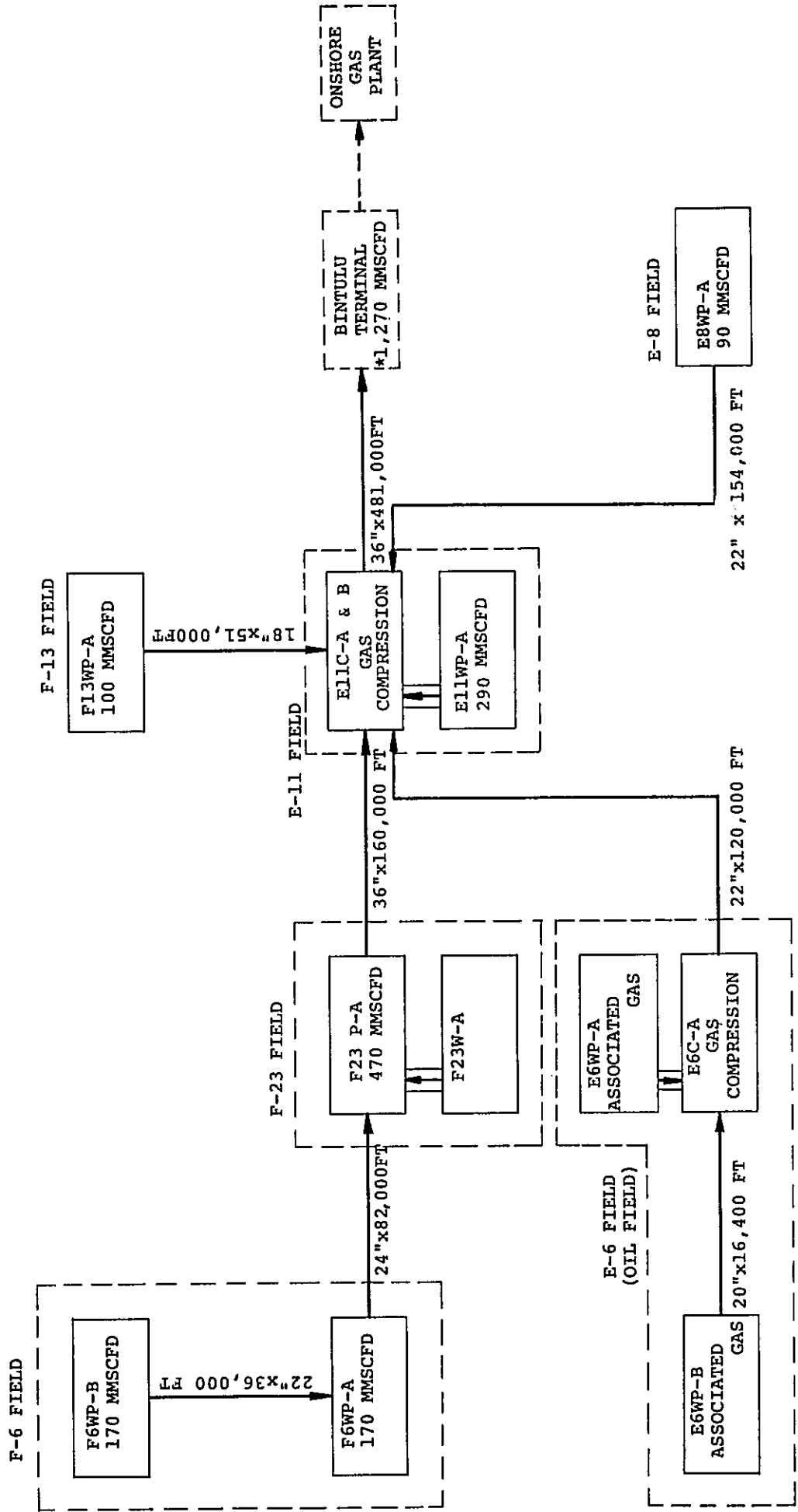


FIG. 17-5-8 (Vol. IV)

BLOCK FLOW DIAGRAM

FOR CENTRAL LUCONIA GAS FIELDS- CASE II















* Note: Total deliverability (1,290 MMSCFD) consists of net deliverability and fuel consumption (20 MMSCFD).

FIG. 17-5-9 (Vol. IV)

FACILITIES ARRANGEMENT
FOR CENTRAL LUCONIA GAS FIELDS- CASE III

LEGEND

-  8 - LEG WELL & PROD. PLATFORM
-  8 - LEG WELL PLATFORM
-  8 - LEG PRODUCTION PLATFORM
-  8 - LEG COMPRESSOR PLATFORM
-  6 - LEG WELL & PROD. PLATFORM
-  6 - LEG RISER PLATFORM
-  6 - LEG COMPRESSOR PLATFORM
-  4 - LEG ACCOMMODATION PLATFORM
-  4 - LEG UTILITY PLATFORM
-  FLARE JACKET
-  GAS LINE
-  PLATFORM FOR OIL PRODUCTION

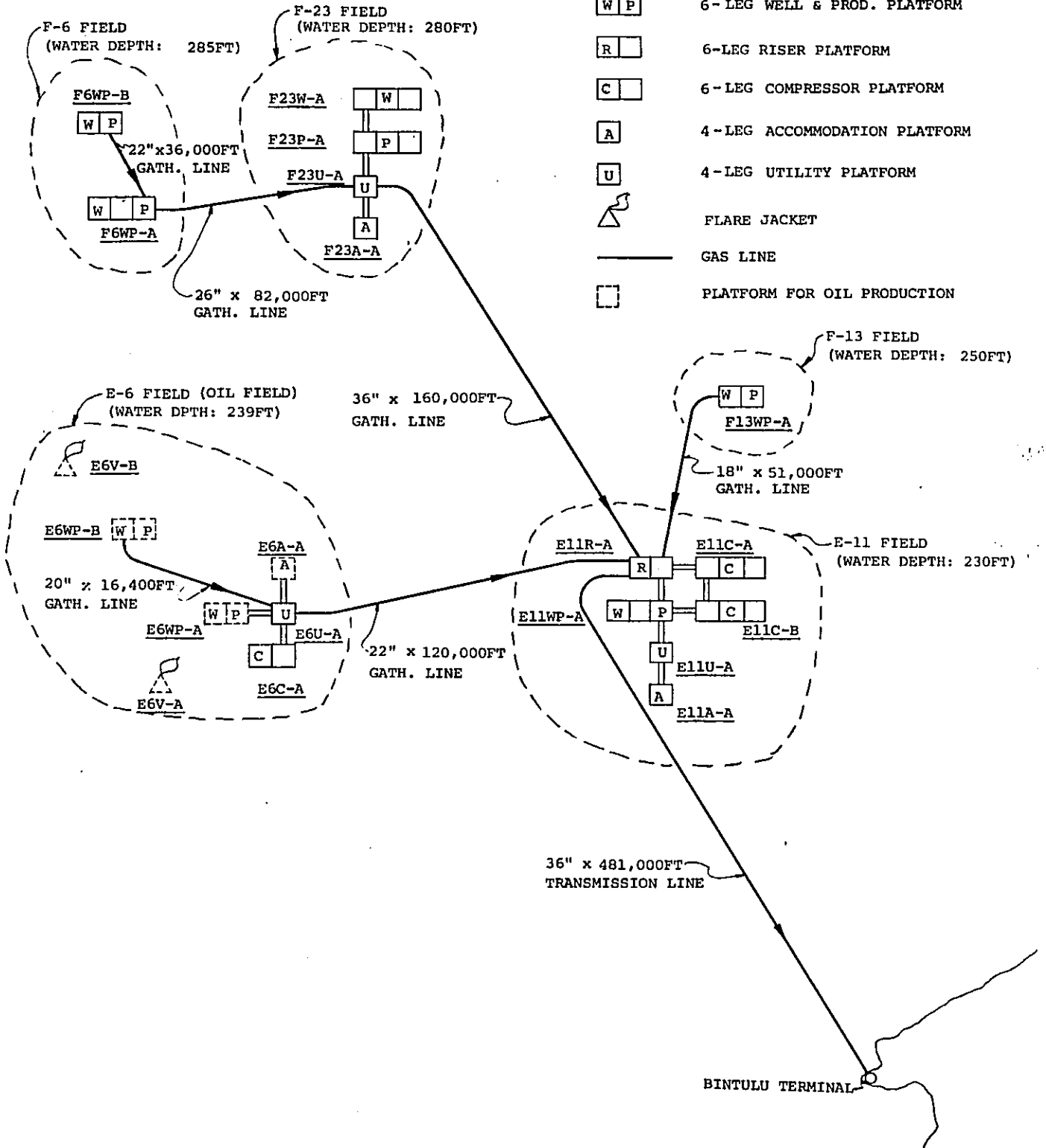
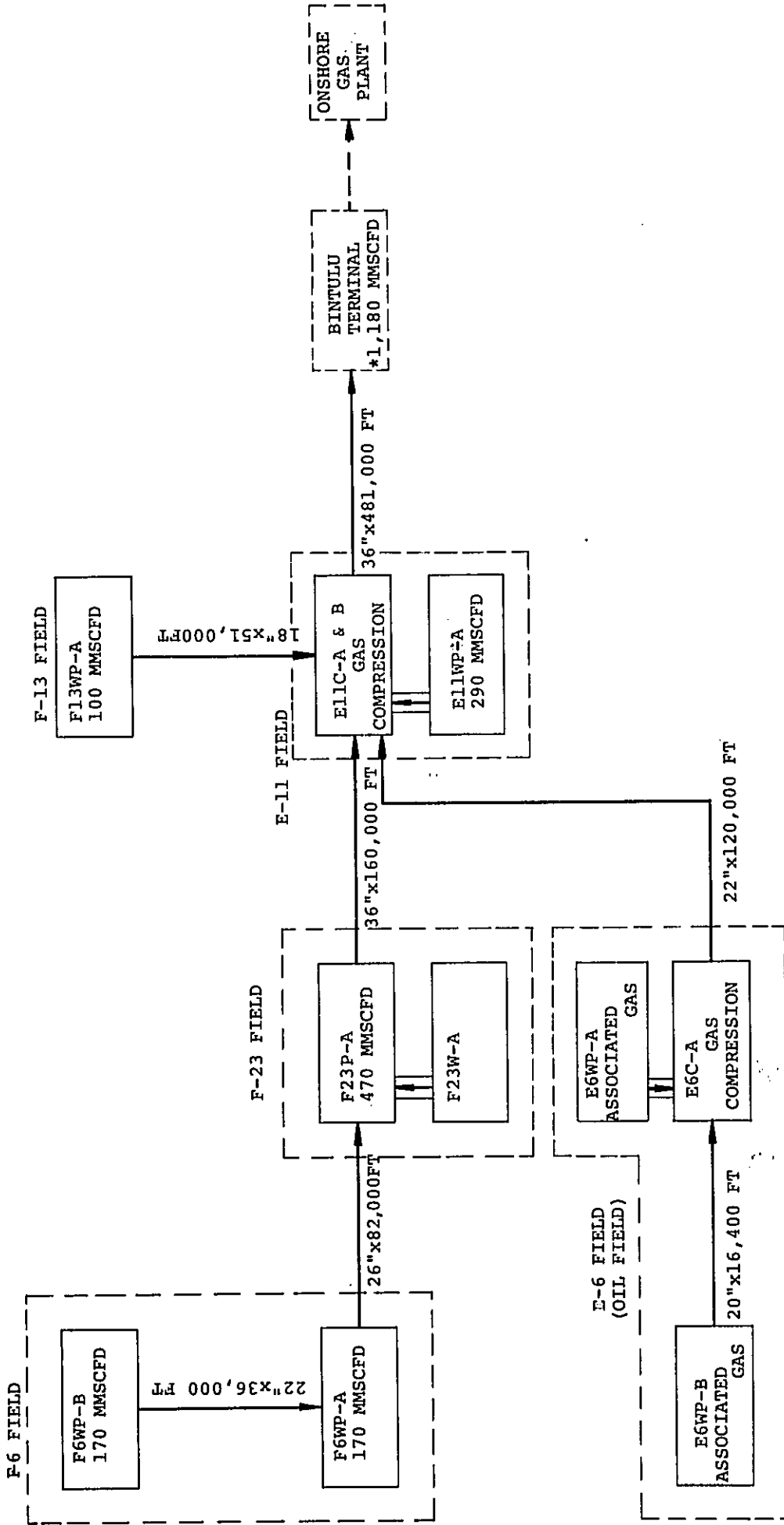


FIG. 17-5-10 (Vol. IV)
 BLOCK FLOW DIAGRAM
 FOR CENTRAL LUCONIA GAS FIELDS- CASE III



* Note: Total deliverability (1,200 MMSCFD) consists of net deliverability (1,180 MMSCFD) and fuel consumption (20 MMSCFD).

FIG. 17-5-11 (Vol. IV)
FACILITIES ARRANGEMENT
FOR CENTRAL LUCONIA GAS FIELDS- CASE IV

LEGEND

W P	8 - LEG WELL & PROD. PLATFORM
W	8 - LEG WELL PLATFORM
P	8 - LEG PRODUCTION PLATFORM
C	8 - LEG COMPRESSOR PLATFORM
W P	6 - LEG WELL & PROD. PLATFORM
R	6 - LEG RISER PLATFORM
C	6 - LEG COMPRESSOR PLATFORM
A	4 - LEG ACCOMMODATION PLATFORM
U	4 - LEG UTILITY PLATFORM
△	FLARE JACKET
—	GAS LINE
□	PLATFORM FOR OIL PRODUCTION

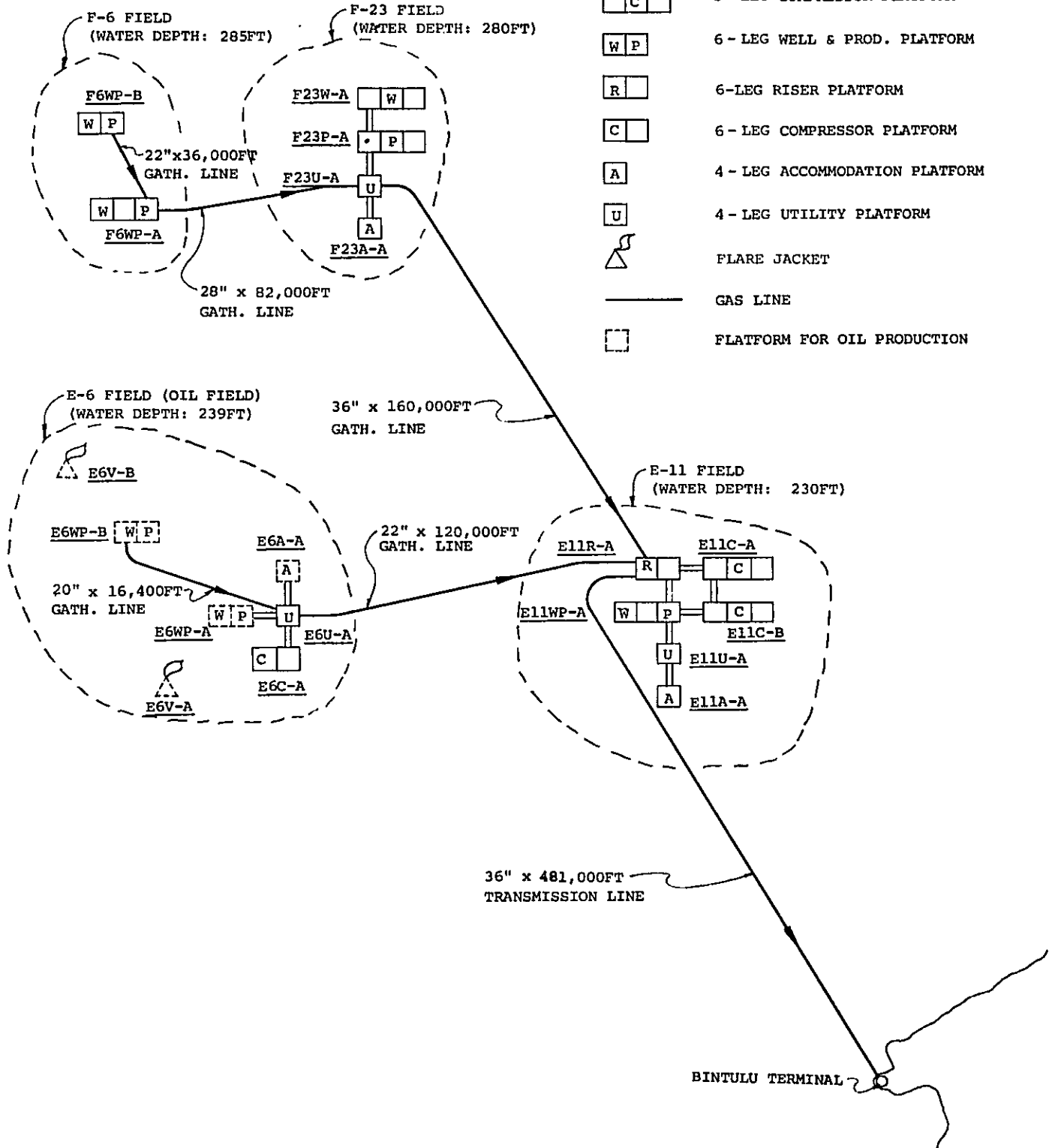
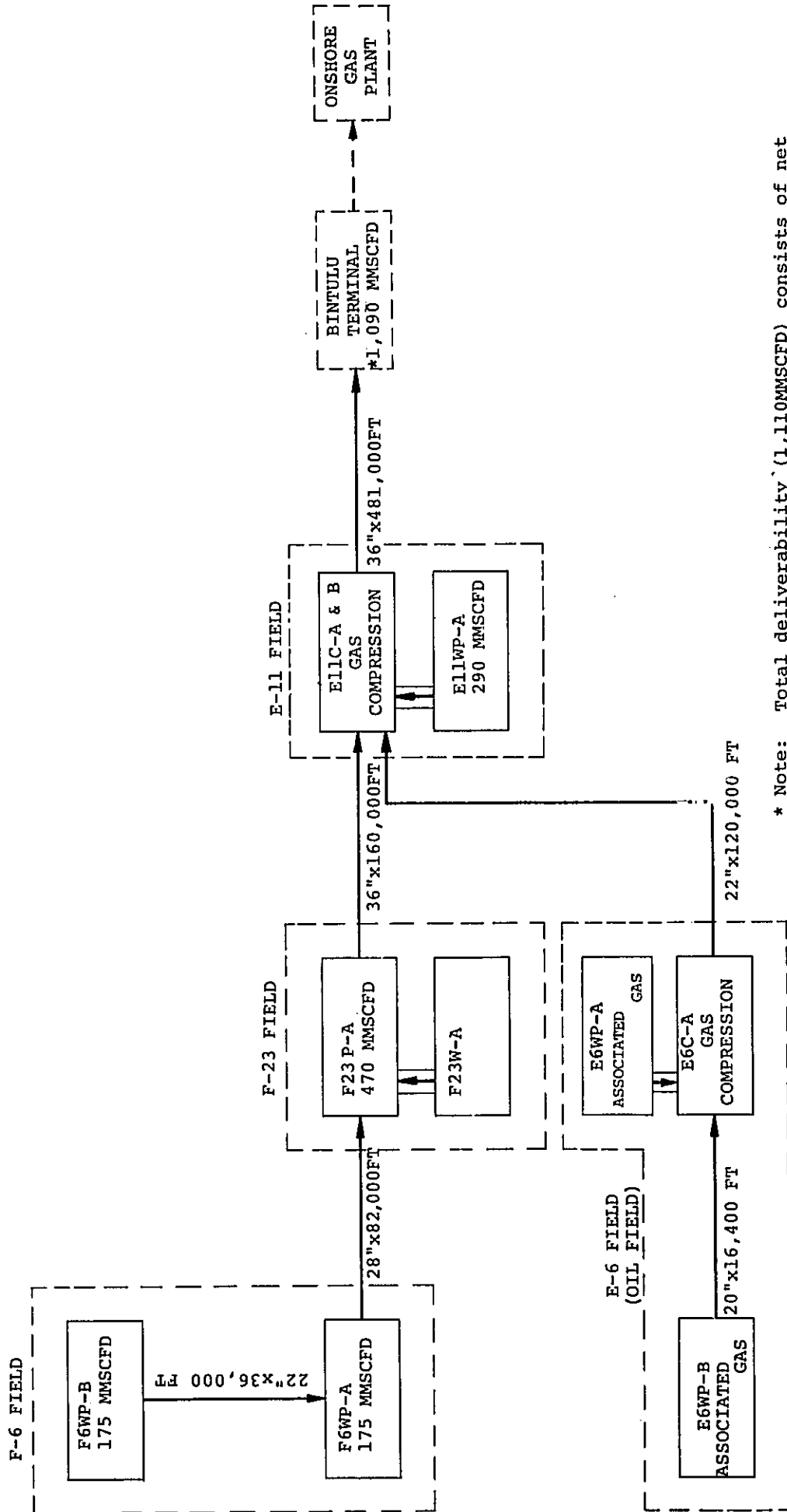


FIG. 17-5-12 (Vol. IV)

BLOCK FLOW DIAGRAM

FOR CENTRAL LUCONIA GAS FIELDS- CASE IV



* Note: Total deliverability (1,110MMSCFD) consists of net deliverability (1,090MMSCFD) and fuel consumption (20MMSCFD).

Fig. 17-5-13 ESTIMATED PERFORMANCE FOR CENTRAL LUCONIA GAS FIELDS
(Vol. IV)

WELL HEAD PRESSURE VS CUMULATIVE PRODUCTION

Production Rate/Well: 30 MMSCFD
Tubing Size : $4\frac{1}{2}$ "

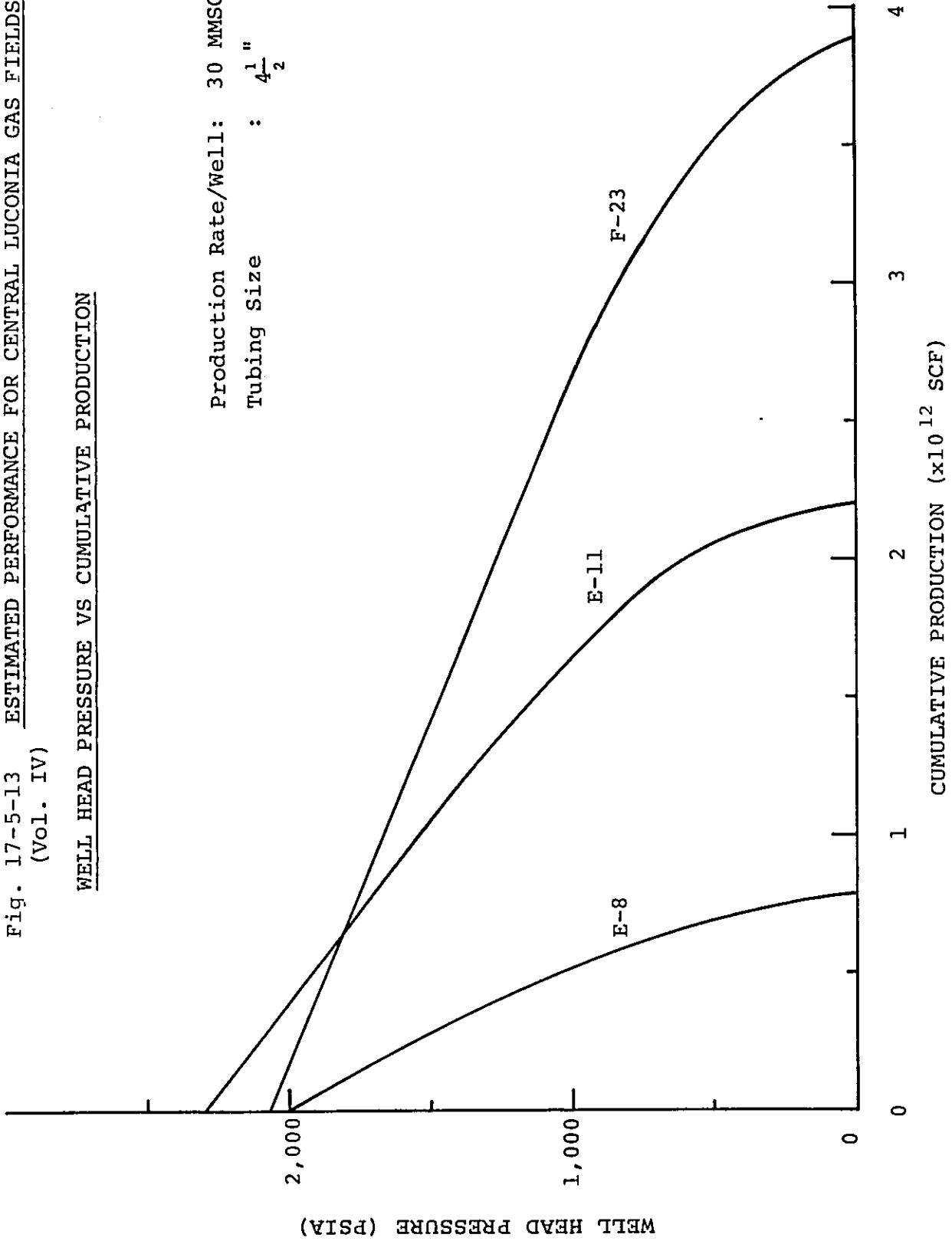


Fig. 17-5-14 ESTIMATED PERFORMANCE FOR CENTRAL LUCONIA GAS FIELDS
(Vol. IV)

WELL HEAD PRESSURE VS CUMULATIVE PRODUCTION

Production Rate/Well: 30 MMSCFD
Tubing Size : 4 $\frac{1}{2}$ "

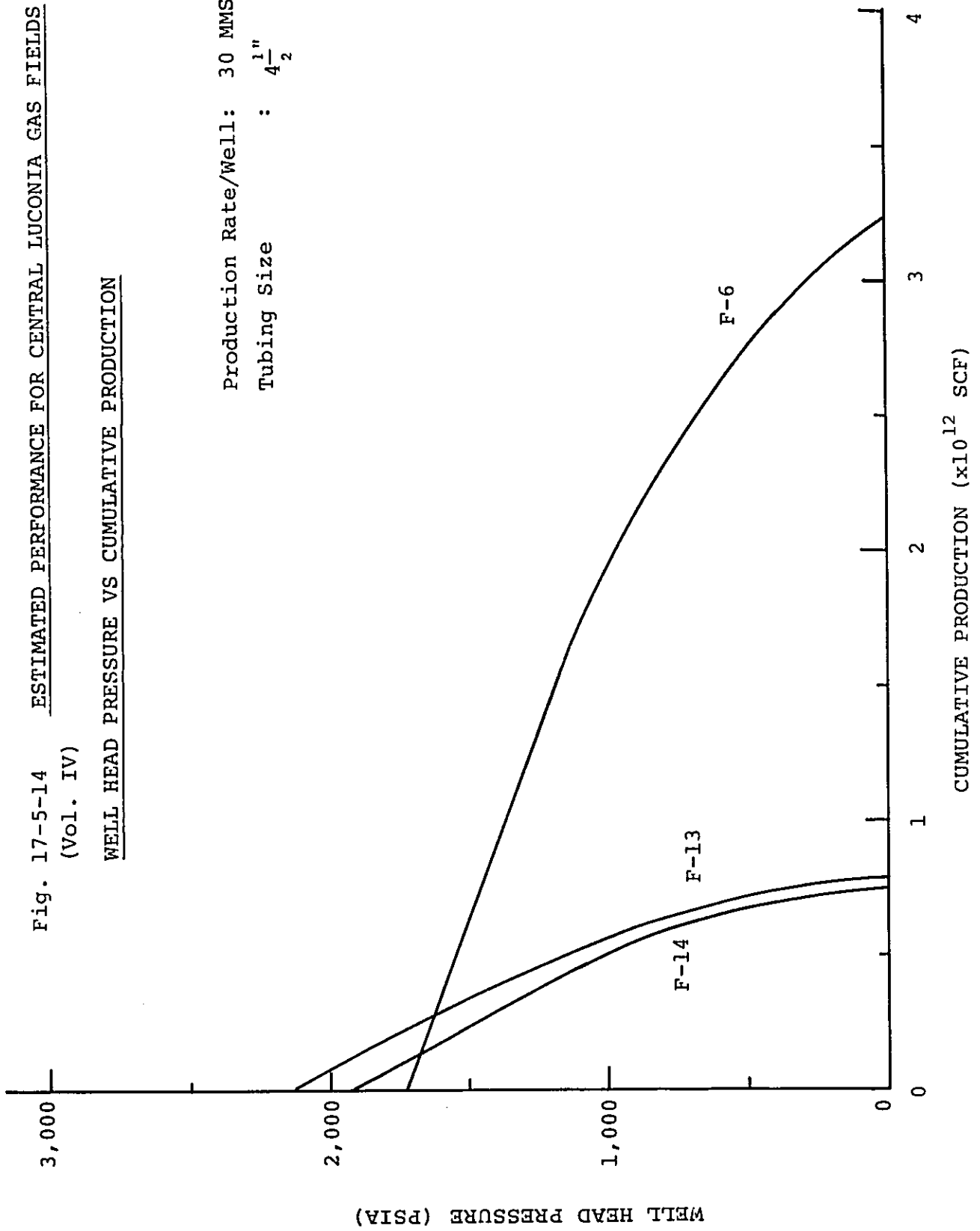
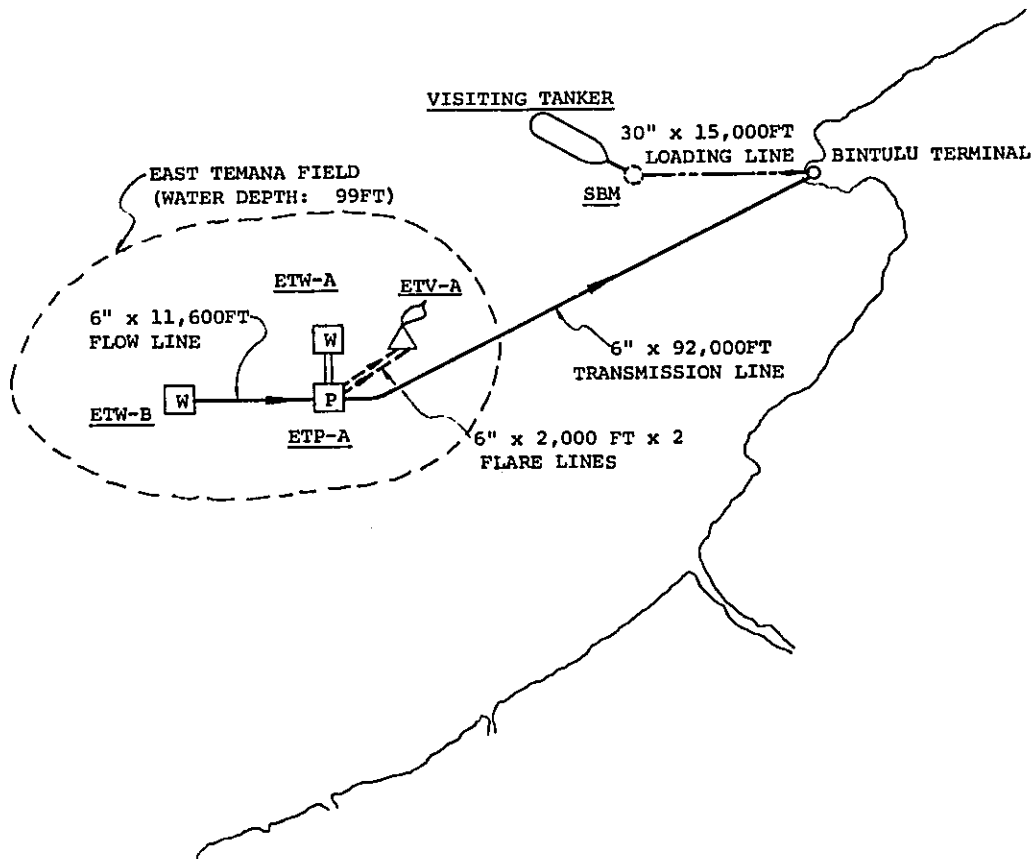
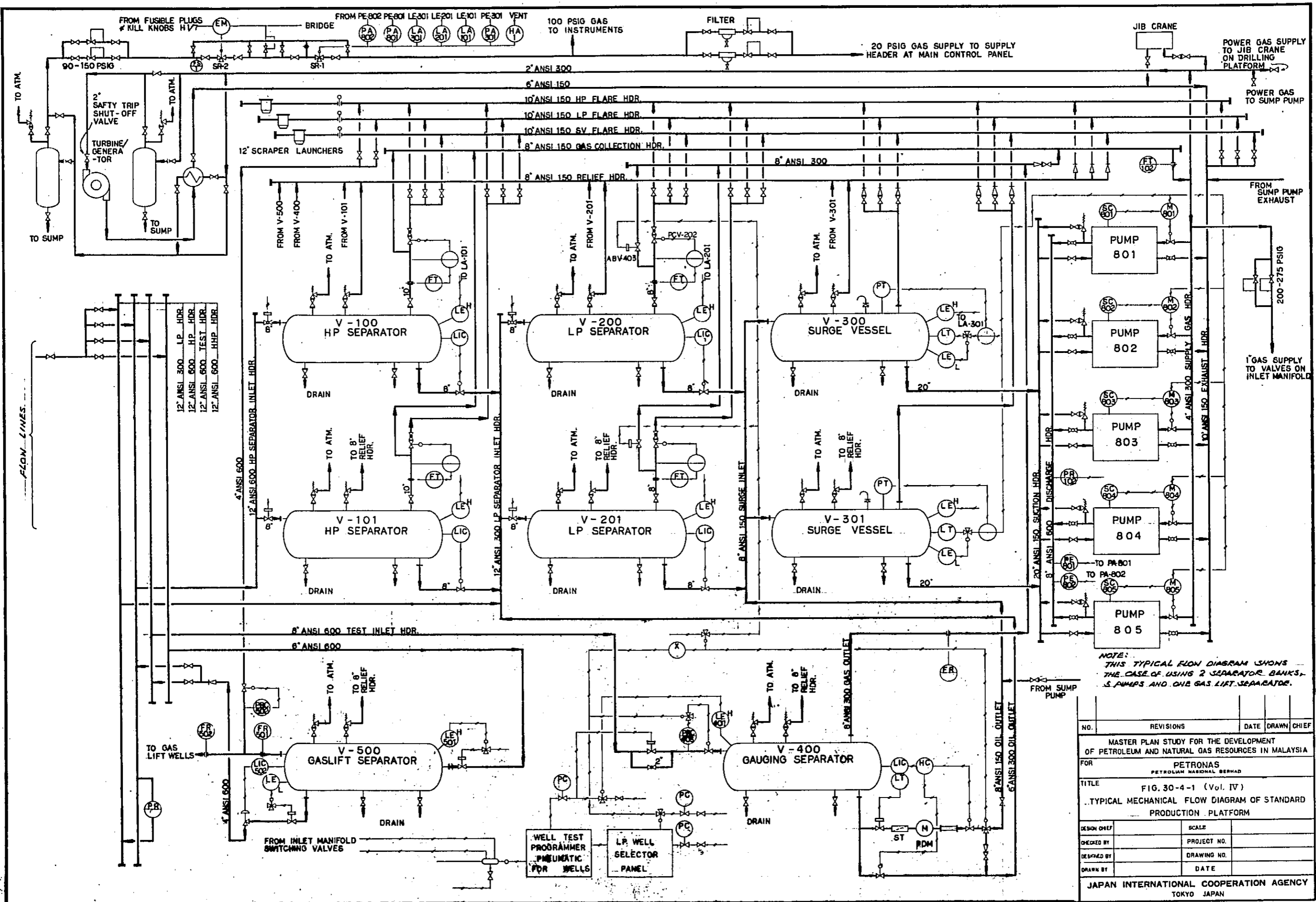


FIG. 18-5-1 (Vol. IV)
FACILITIES ARRANGEMENT
FOR EAST TEMANA OIL FIELD

LEGEND

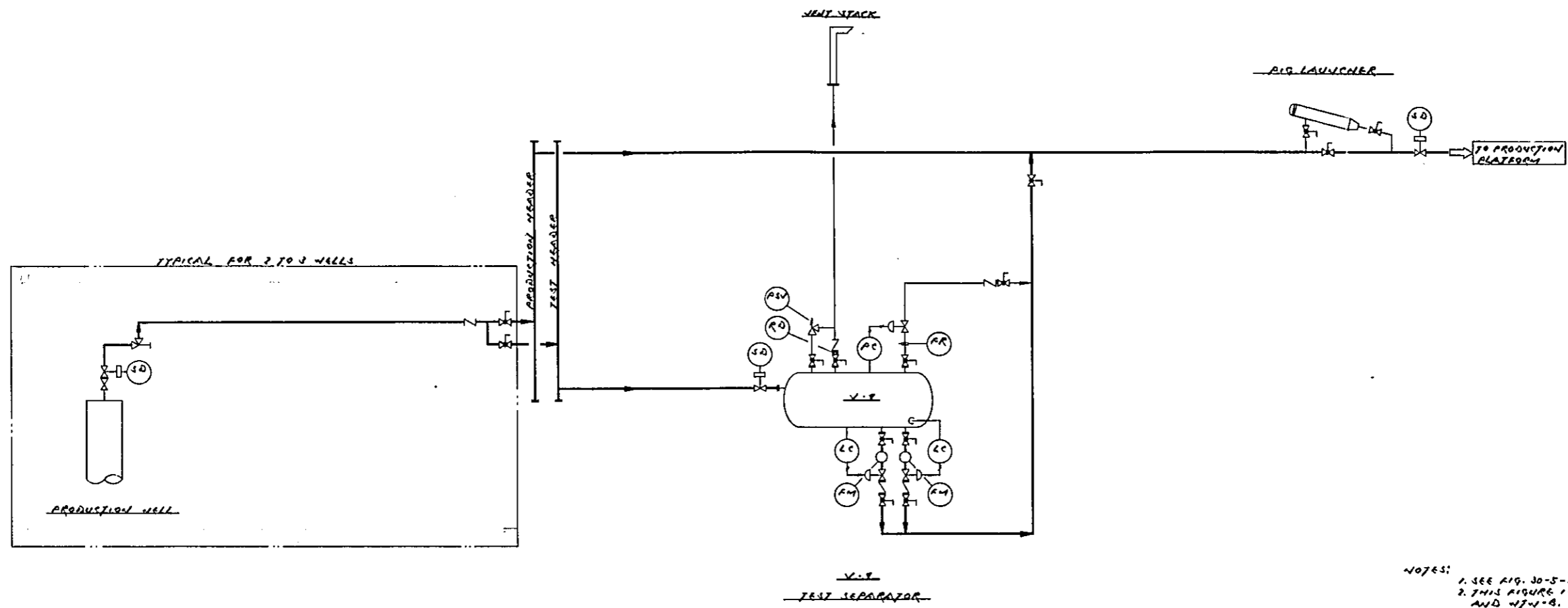
- W 4 - LEG WELL PLATFORM
- P 4 - LEG PROD. PLATFORM
- FLARE JACKET
- OIL LINE
- FLARE LINE





NOTE: THIS TYPICAL FLOW DIAGRAM SHOWS THE CASE OF USING 2 SEPARATOR BANKS, 5 PUMPS AND ONE GAS LIFT SEPARATOR.

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MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD TITLE FIG. 30-4-1 (Vol. IV) TYPICAL MECHANICAL FLOW DIAGRAM OF STANDARD PRODUCTION PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

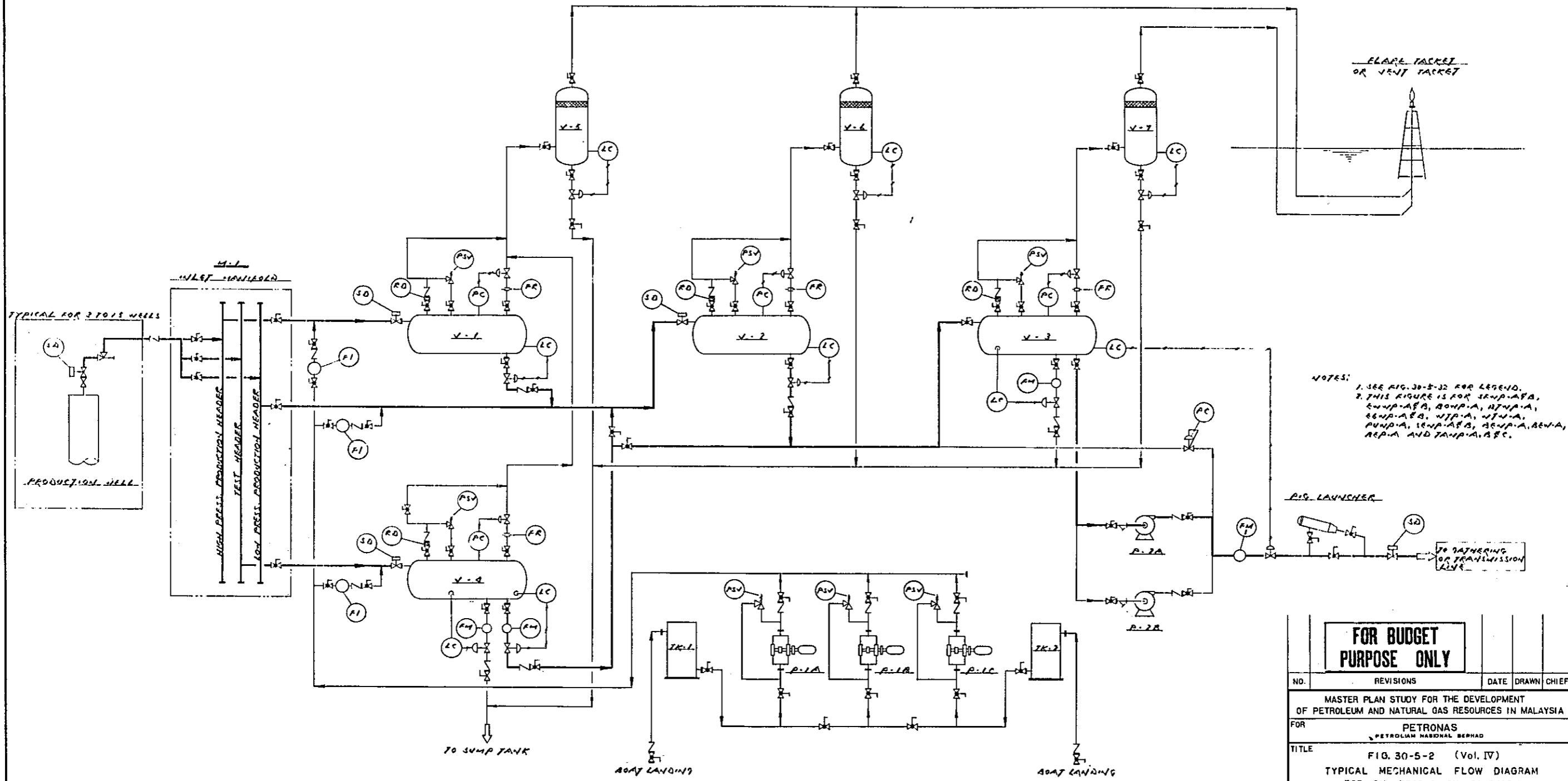


NOTES:
 1. SEE FIG. 30-5-32 FOR LEGEND.
 2. THIS FIGURE IS FOR ROW-A 8A AND WJW-8.

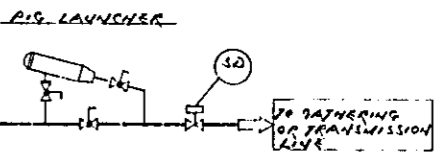
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TITLE FIG. 30-5-1 (Vol. IV) TYPICAL MECHANICAL FLOW DIAGRAM FOR WELL PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

V-1 V-5 V-2 V-6 V-3 V-7
1ST STAGE PRODUCTION SEPARATOR 1ST STAGE FLARE SCRUBBER 2ND STAGE PRODUCTION SEPARATOR 2ND STAGE FLARE SCRUBBER 3RD STAGE PRODUCTION SEPARATOR 3RD STAGE FLARE SCRUBBER



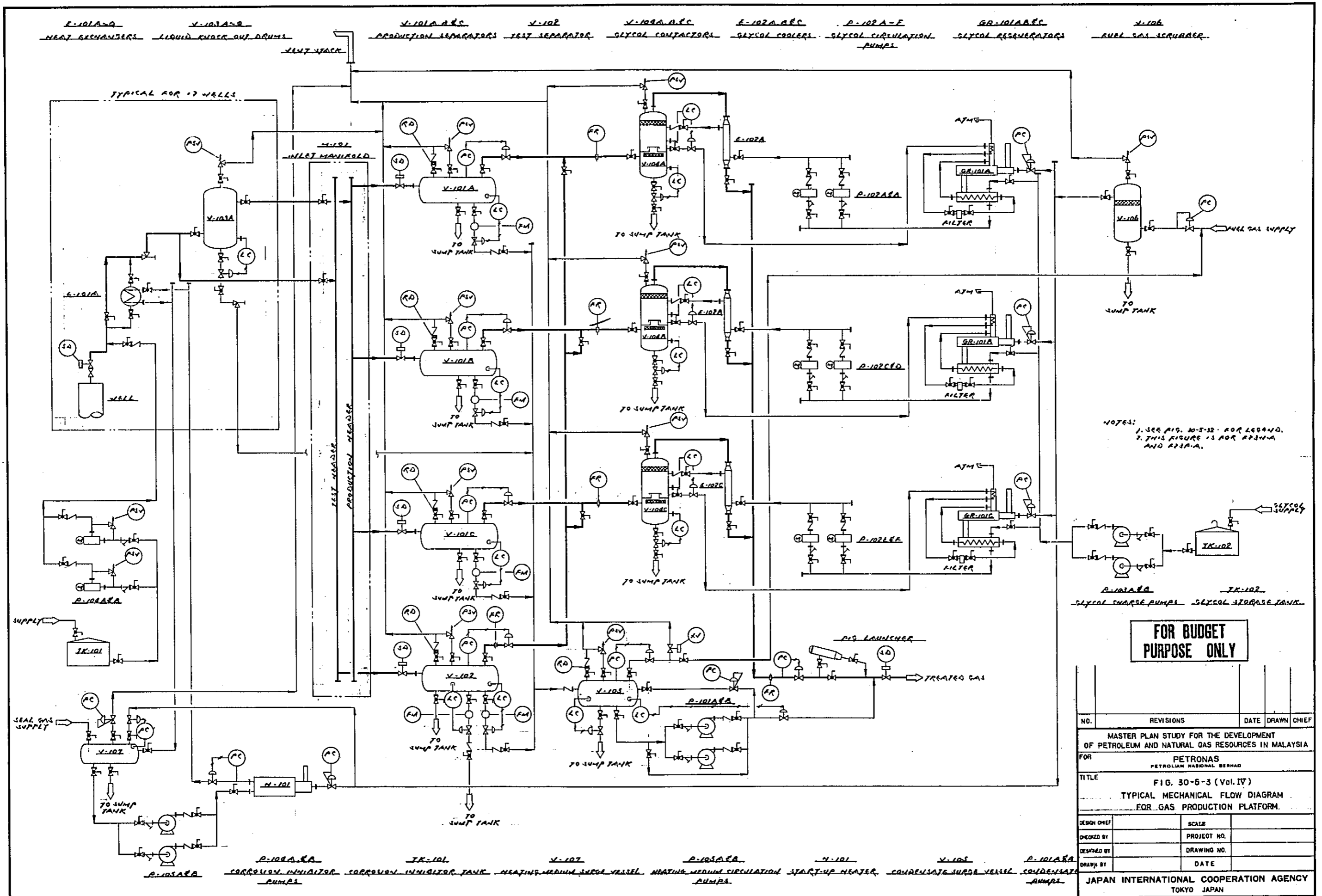
NOTES:
 1. SEE FIG. 30-5-32 FOR LEGEND.
 2. THIS FIGURE IS FOR SUMP-A/B,
 EQUIP-A/B, COMP-A, NTP-A,
 EQUIP-A/B, NTP-A, NTP-A,
 PUMP-A, SUMP-A/B, SUMP-A, B/W-A,
 REP-A AND TAMP-A, B/C.



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FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-2 (Vol. IV) TYPICAL MECHANICAL FLOW DIAGRAM FOR OIL PRODUCTION PLATFORM				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		

V-9 IK-1 P-1A, B, C IK-2 P-2A, B
TEST SEPARATOR DEGUMMERS TANK CHEMICAL INJECTION PUMPS DEGUMMERS TANK CRUDE TRANSFER PUMPS

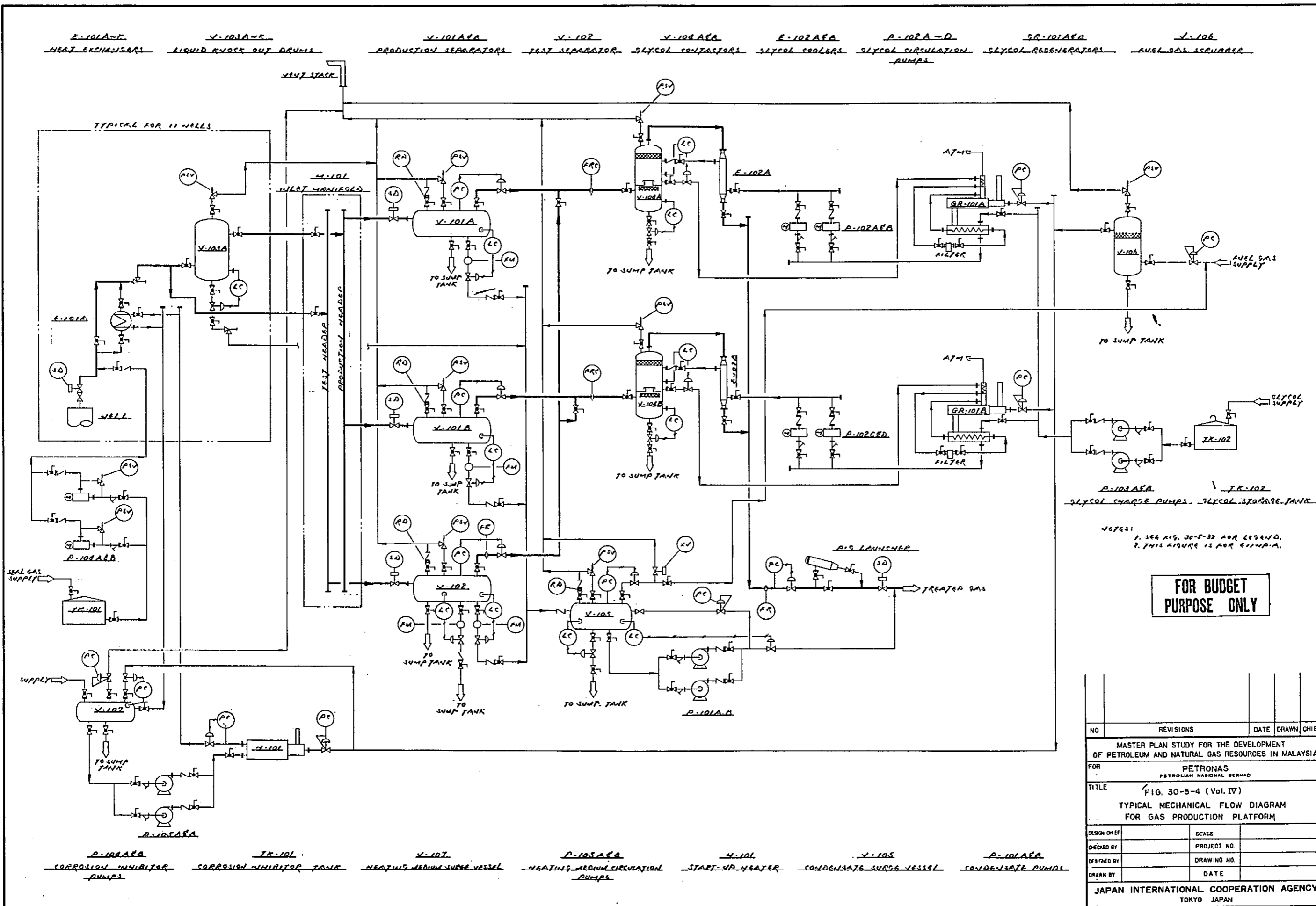


NOTES:
 1. SEE FIG. 30-5-3 FOR LEGEND.
 2. THIS FIGURE IS FOR RP3W4 AND RP3A.

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MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD TITLE: FIG. 30-5-3 (Vol. IV) TYPICAL MECHANICAL FLOW DIAGRAM FOR GAS PRODUCTION PLATFORM.				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		

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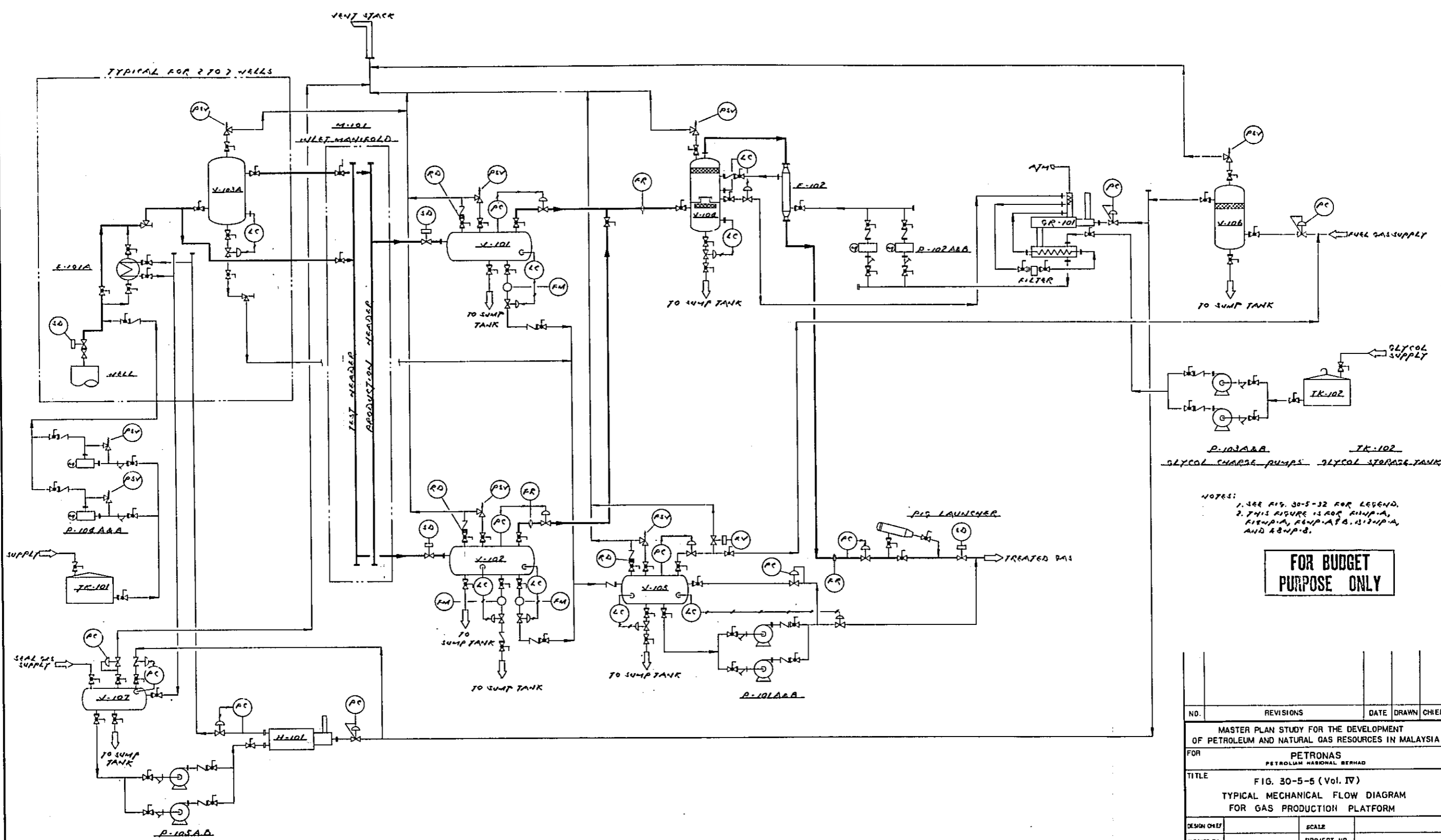


NOTES:
 1. SEE FIG. 30-5-32 FOR LEGEND.
 2. THIS FIGURE IS FOR E11MP-A.

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TITLE: FIG. 30-5-4 (Vol. IV) TYPICAL MECHANICAL FLOW DIAGRAM FOR GAS PRODUCTION PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

E-101A V-103A V-101 V-102 V-108 E-102 P-102A&B GR-101 V-106
 H&L EXCHANGER LIQUID KNOCK-OUT DRUMS PRODUCTION SEPARATOR TEST SEPARATOR GLYCOL CONTACTOR GLYCOL COOLER GLYCOL CIRCULATION PUMPS GLYCOL REGENERATOR FUEL GAS SCRUBBER



P-104A&B TK-101 V-105 P-105A&B H-101 V-105 P-101A&B
 CORROSION INITIATOR PUMPS CORROSION INITIATOR TANK HEATING MEDIUM SURGE VESSEL HEATING MEDIUM CIRCULATION PUMPS START-UP HEATER CONDENSATE SURGE VESSEL CONDENSATE PUMPS

NOTES:
 1. SEE FIG. 30-5-32 FOR LEGEND.
 2. THIS FIGURE IS FOR PUMP-A, PUMP-B, PUMP-A/B, PUMP-A/B, AND A/B-P.

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MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-5 (Vol. IV) TYPICAL MECHANICAL FLOW DIAGRAM FOR GAS PRODUCTION PLATFORM				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

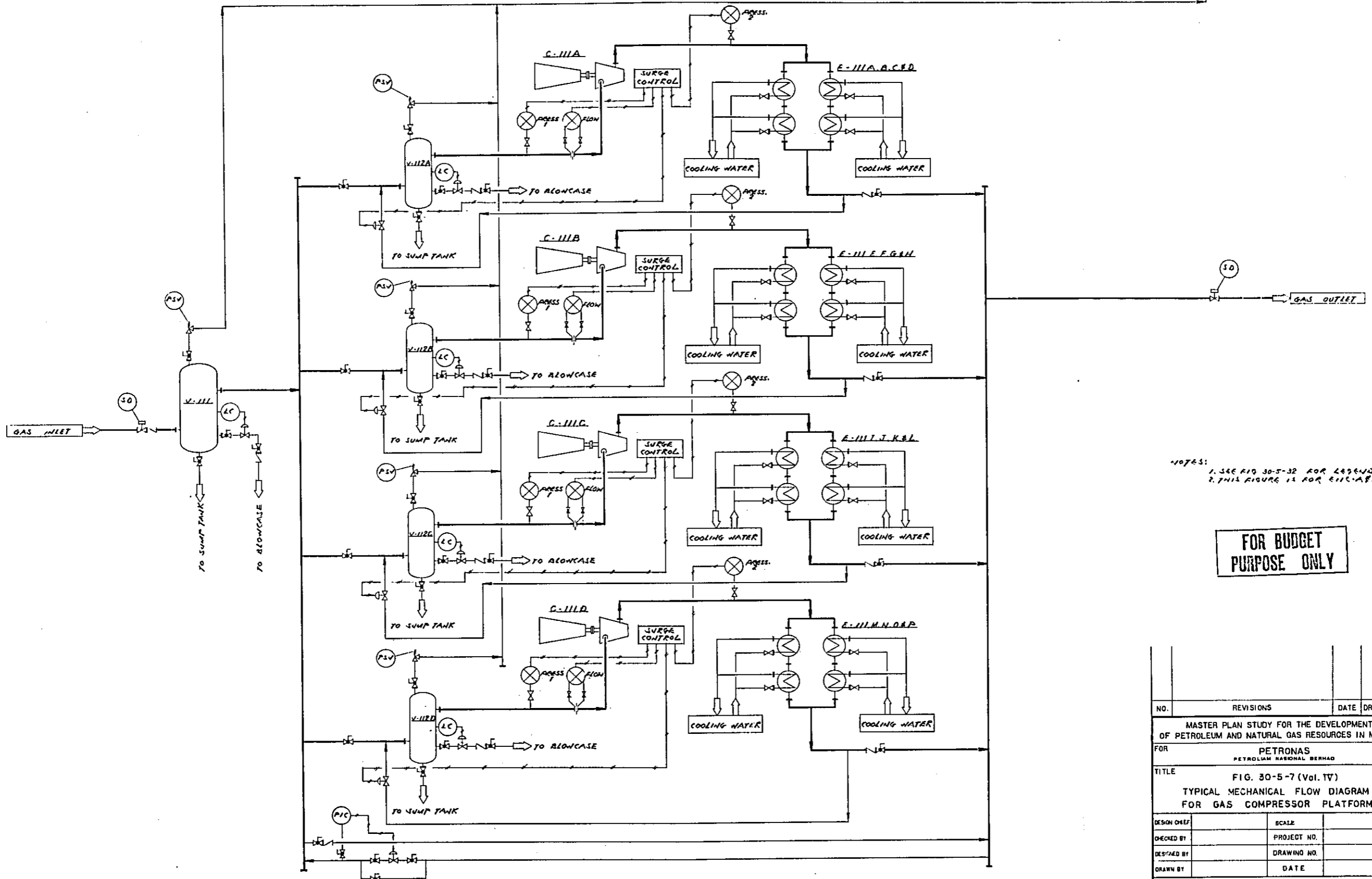
V-111
KNOCK OUT DRUM

V-112A-D
UNIT SUCTION SCRIBBERS

C-111A-D
GAS TURBINE COMPRESSORS

E-111A-P
AFTER COOLERS

VENT STACK



NOTES:
1. SEE FIG. 30-5-32 FOR LEGEND.
2. THIS FIGURE IS FOR E11C.AFB.

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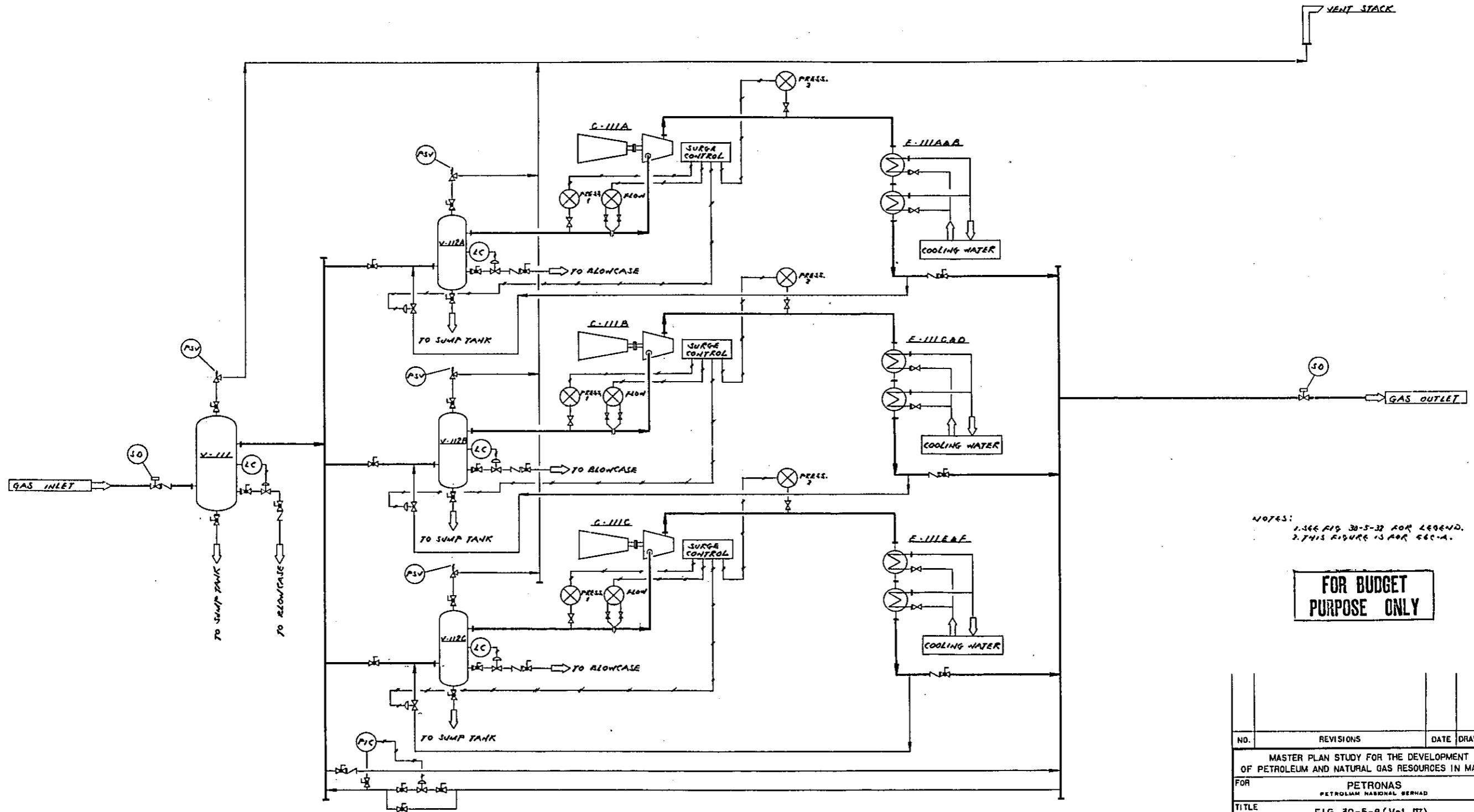
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-7 (Vol. IV) TYPICAL MECHANICAL FLOW DIAGRAM FOR GAS COMPRESSOR PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

V-111
KNOCK OUT DRUM

V-112A,B,C
UNIT SUCTION SCRUBBERS

C-111A,B,C
GAS TURBINE COMPRESSORS

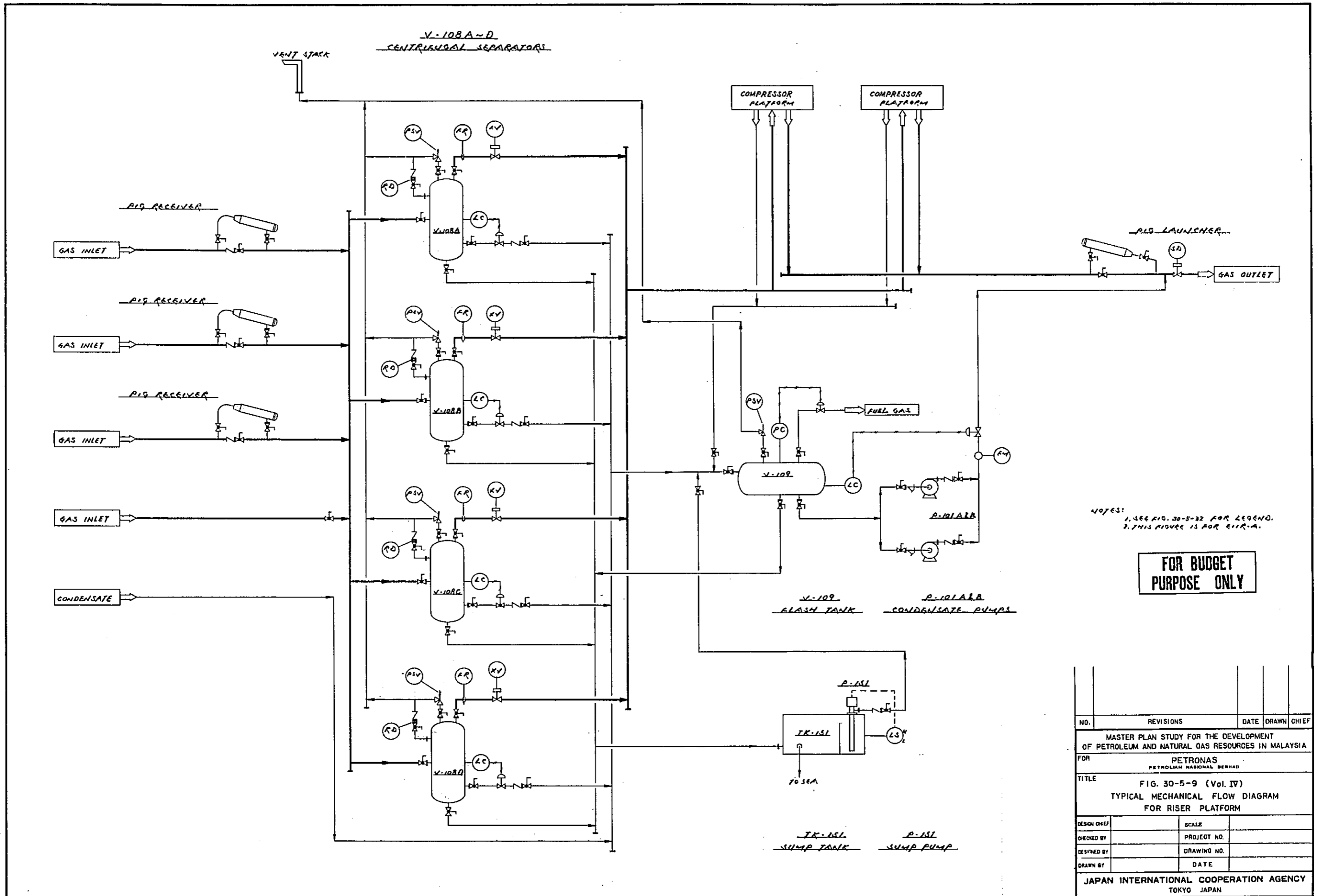
E-111A-F
AFTER COOLERS



NOTES:
1. SEE FIG. 30-5-32 FOR LEGEND.
2. THIS FIGURE IS FOR REC-A.

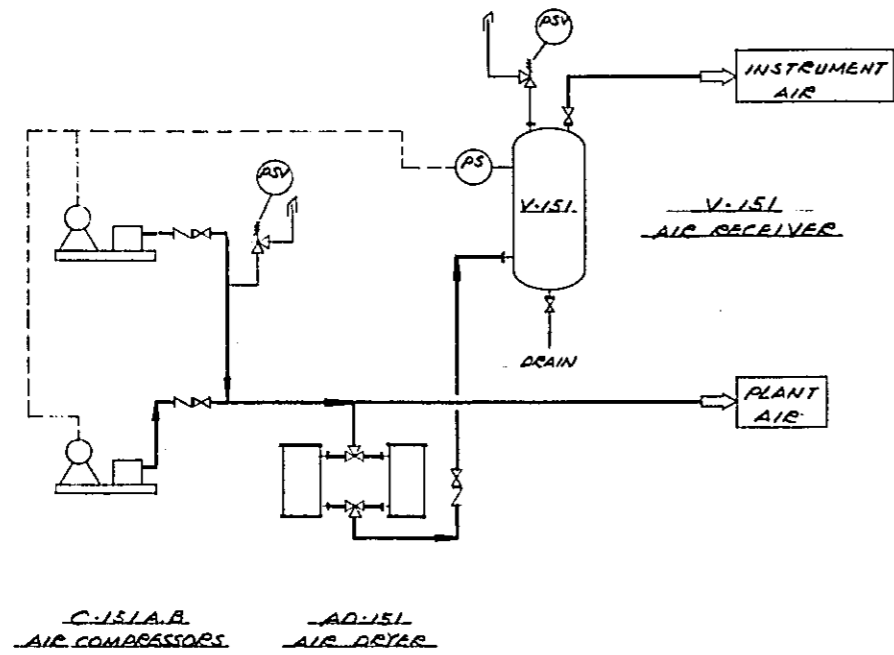
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MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA				
FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-8 (Vol. IV) TYPICAL MECHANICAL FLOW DIAGRAM FOR GAS COMPRESSOR PLATFORM				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

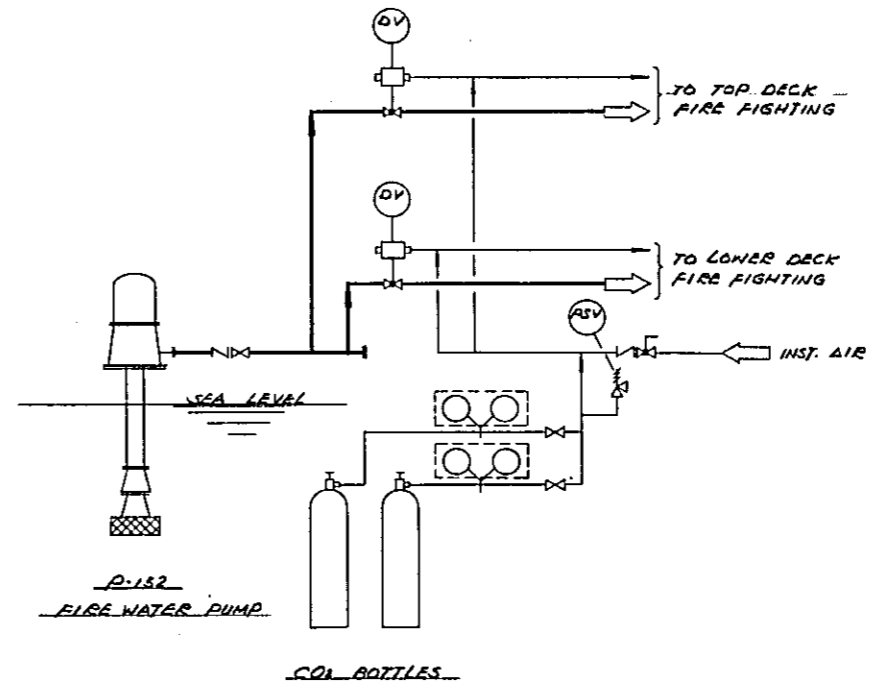


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FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-9 (Vol. IV) TYPICAL MECHANICAL FLOW DIAGRAM FOR RISER PLATFORM				
DESIGN CHECK		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

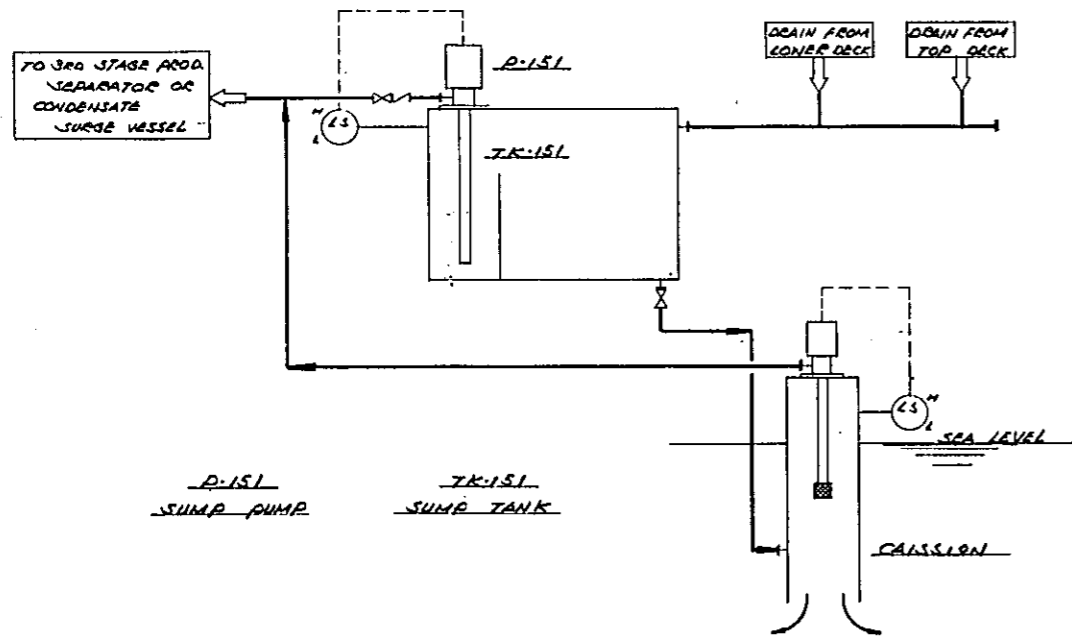
INSTRUMENT AIR SYSTEM



FIRE FIGHTING SYSTEM



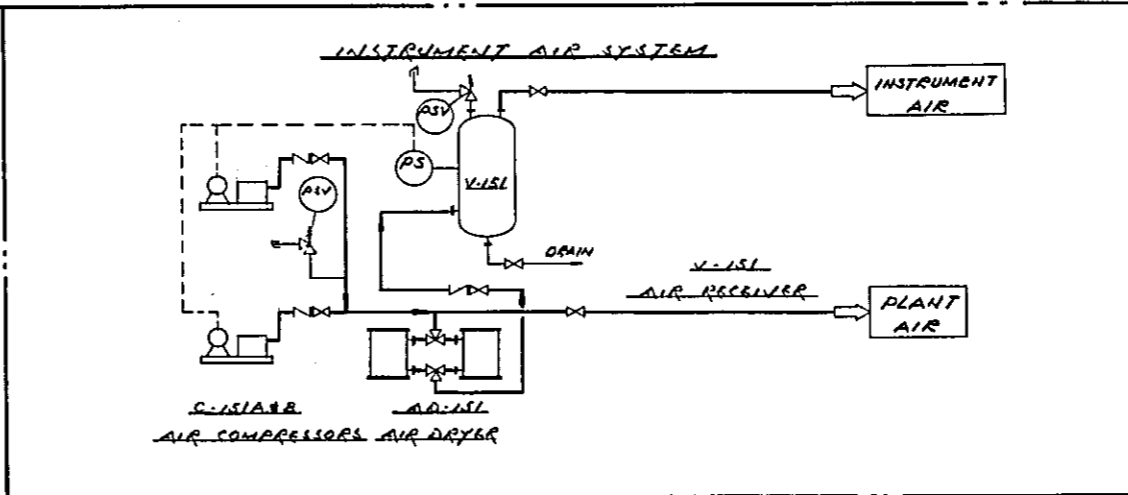
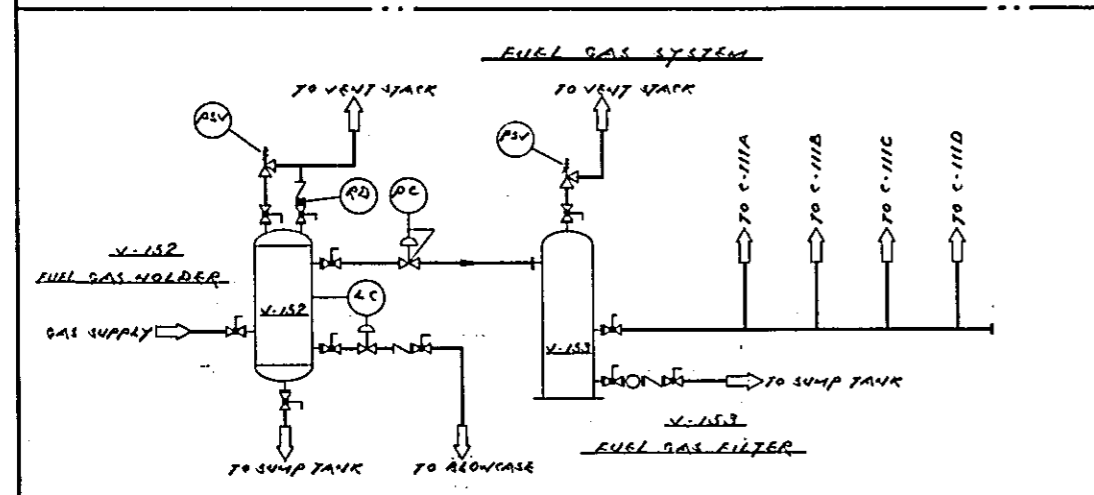
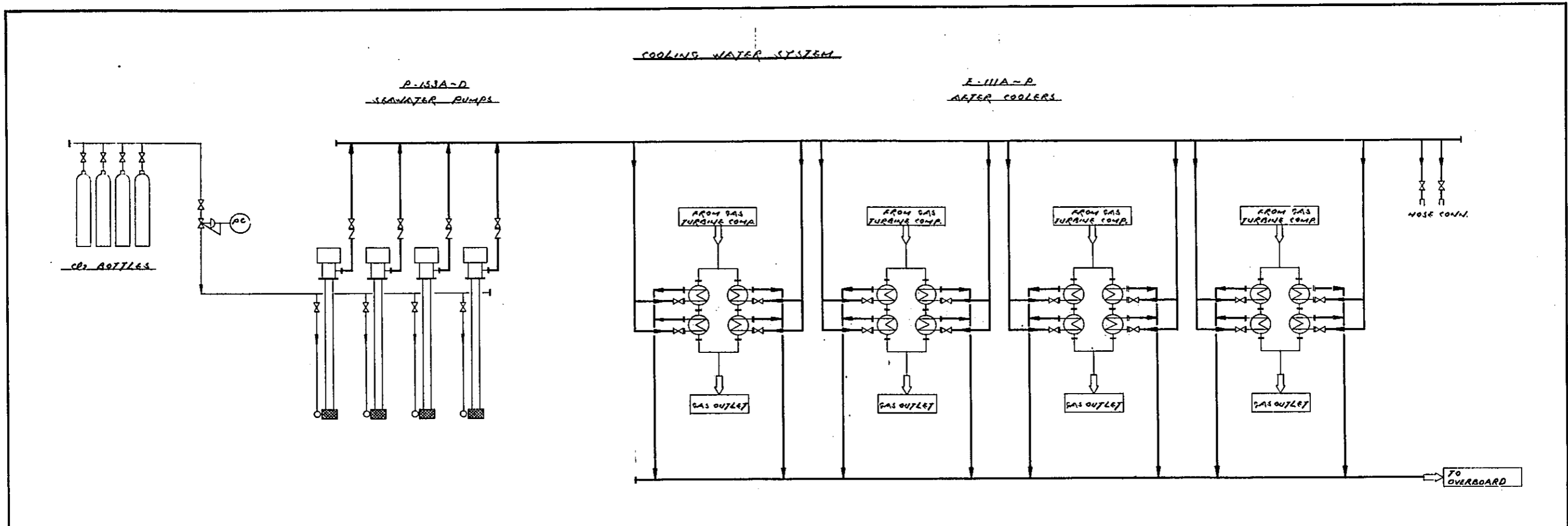
DRAIN SYSTEM



NOTES:
 1. SEE FIG. 30-5-32 FOR LEGEND.
 2. THIS FIGURE IS FOR SEMP-AB.
 KUMP-AB, KOMP-A, KUP-A
 KUP-AB, KPA, KUP-A
 SEMP-AB, SEMP-A, SEP-A
 SEMP-AB, SEMP-A, SEP-A
 KUP-A, KUP-A, KUP-A
 KUP-A, KUP-AB, KUP-A
 KUP-A, KUP-AB, KUP-A
 KUP-A, KUP-AB, KUP-A
 AND BEPC-A.

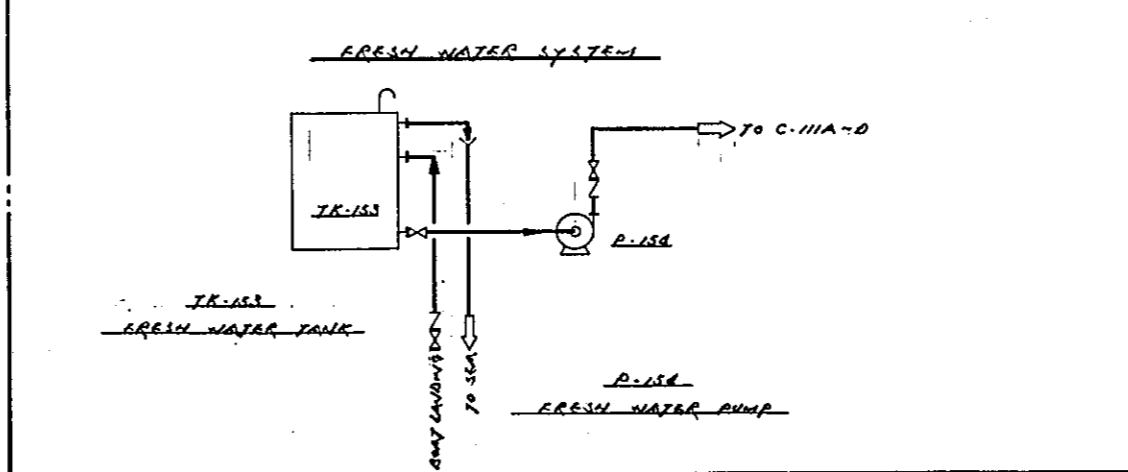
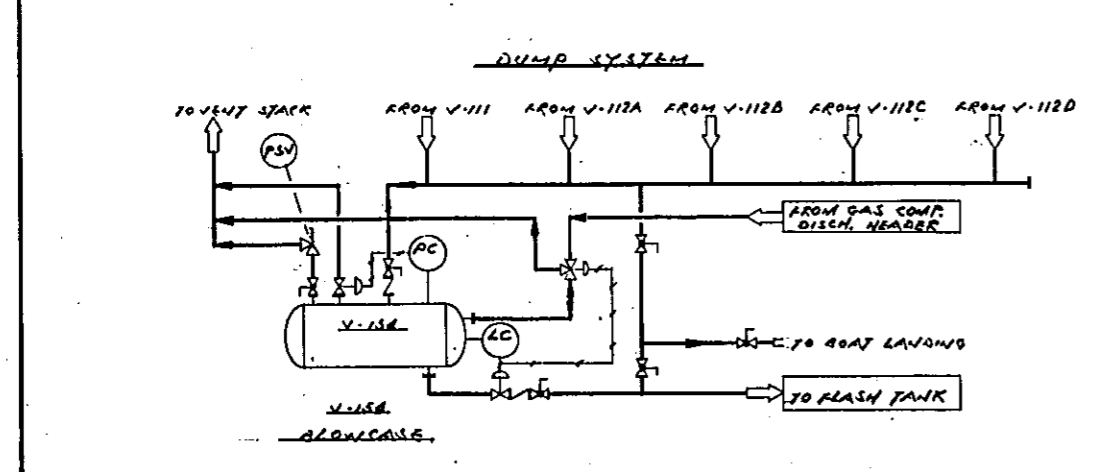
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MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-10 (Vol. IV) TYPICAL UTILITY FLOW DIAGRAM FOR OIL & GAS PRODUCTION PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

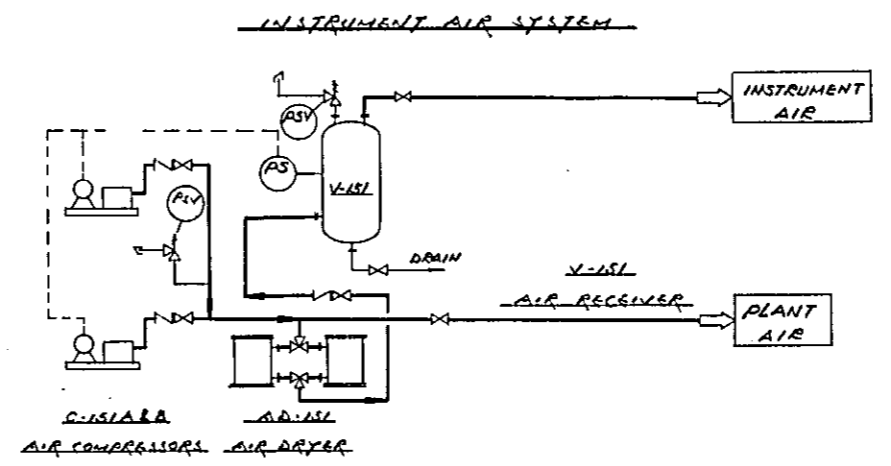
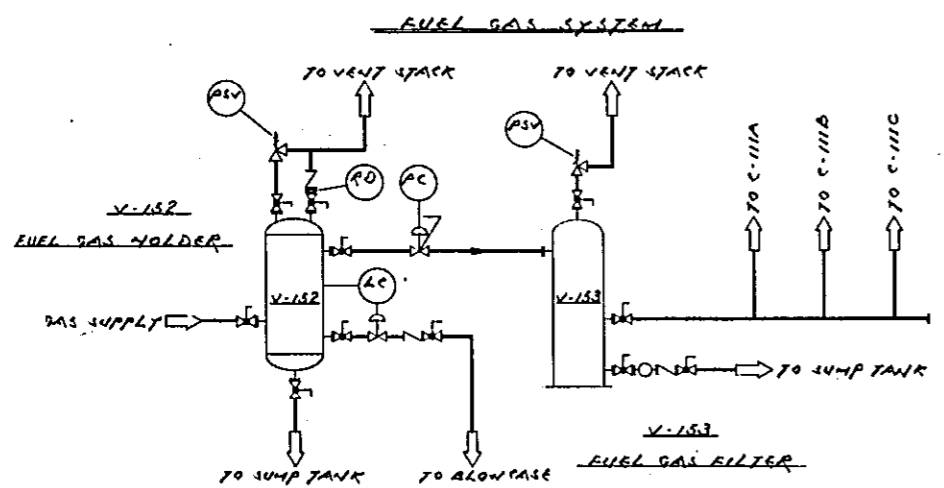
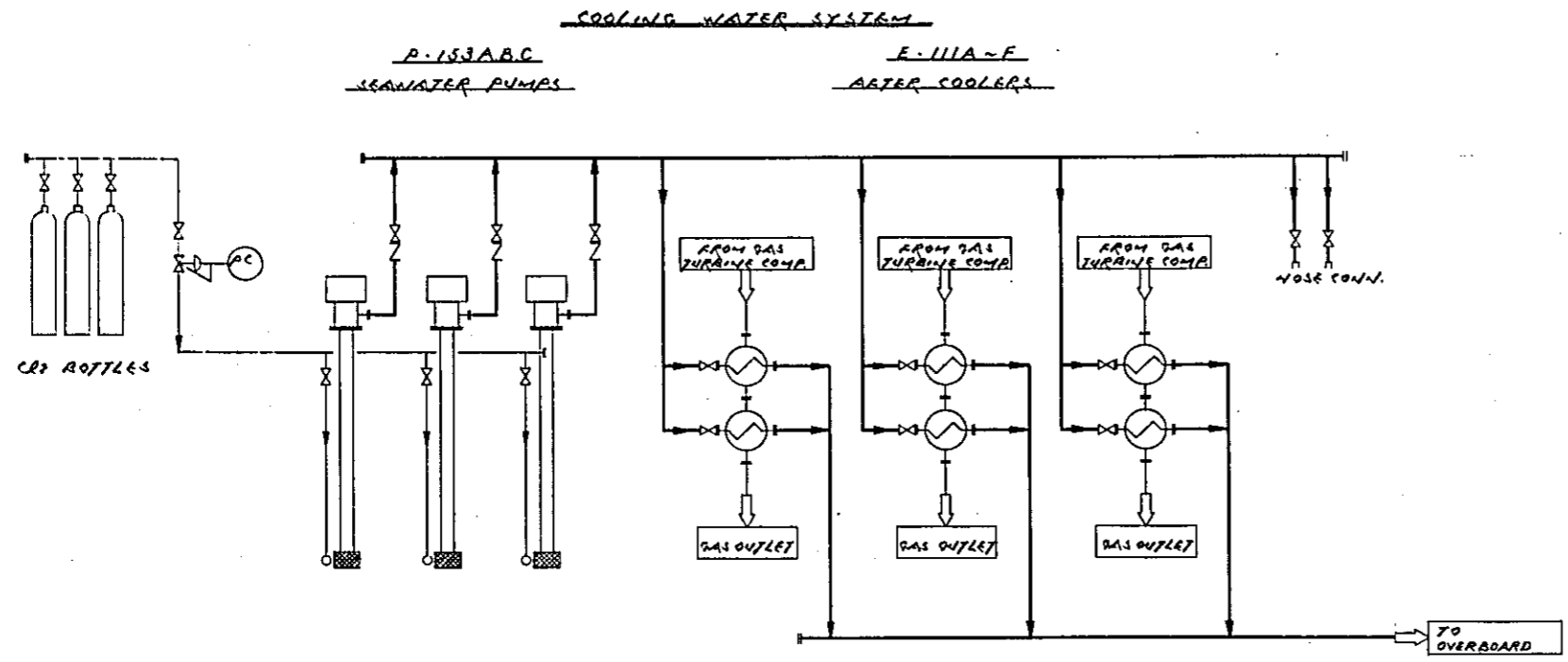


NOTES:
 1. SEE FIG. 30-5-32 FOR LEGEND.
 2. THIS FIGURE IS FOR C/C-A.E.B.

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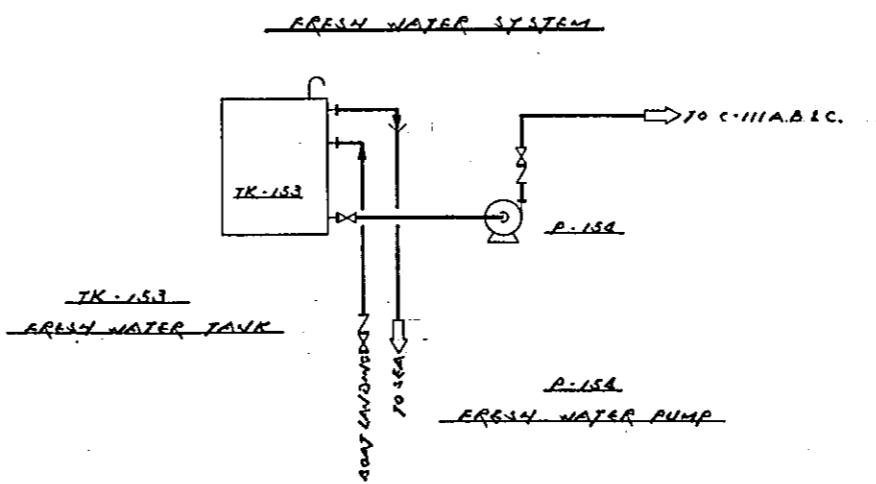
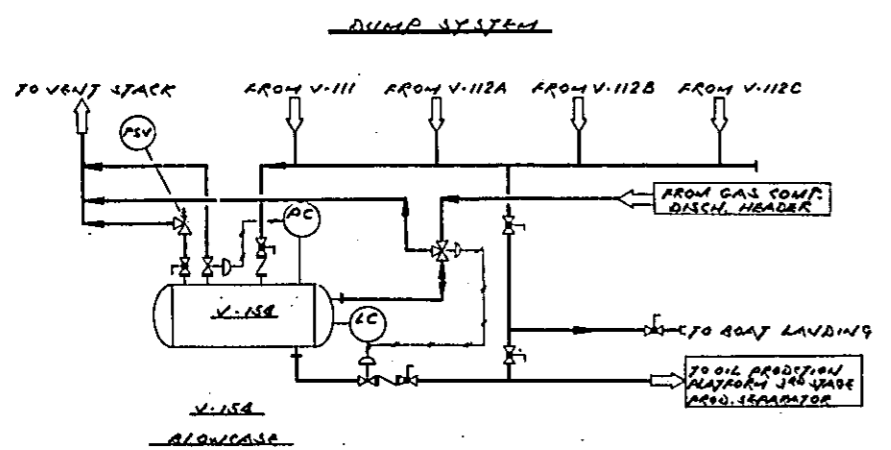


NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-11 (Vol. IV) TYPICAL UTILITY FLOW DIAGRAM FOR GAS COMPRESSOR PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

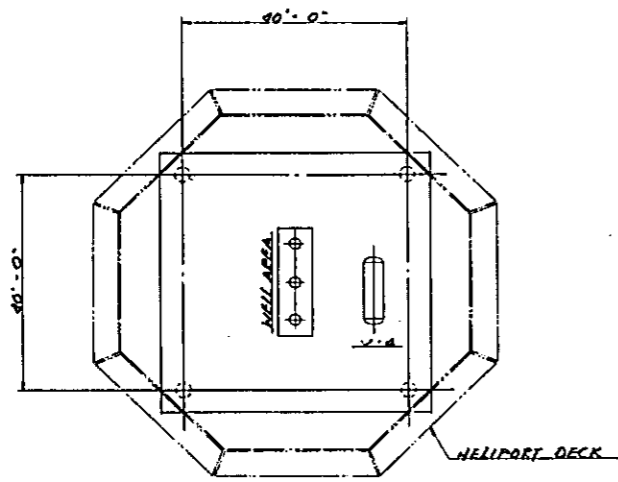


NOTES:
1. SEE FIG. 30-5-32 FOR LEGEND.
2. THIS FIGURE IS FOR 46°C/A.

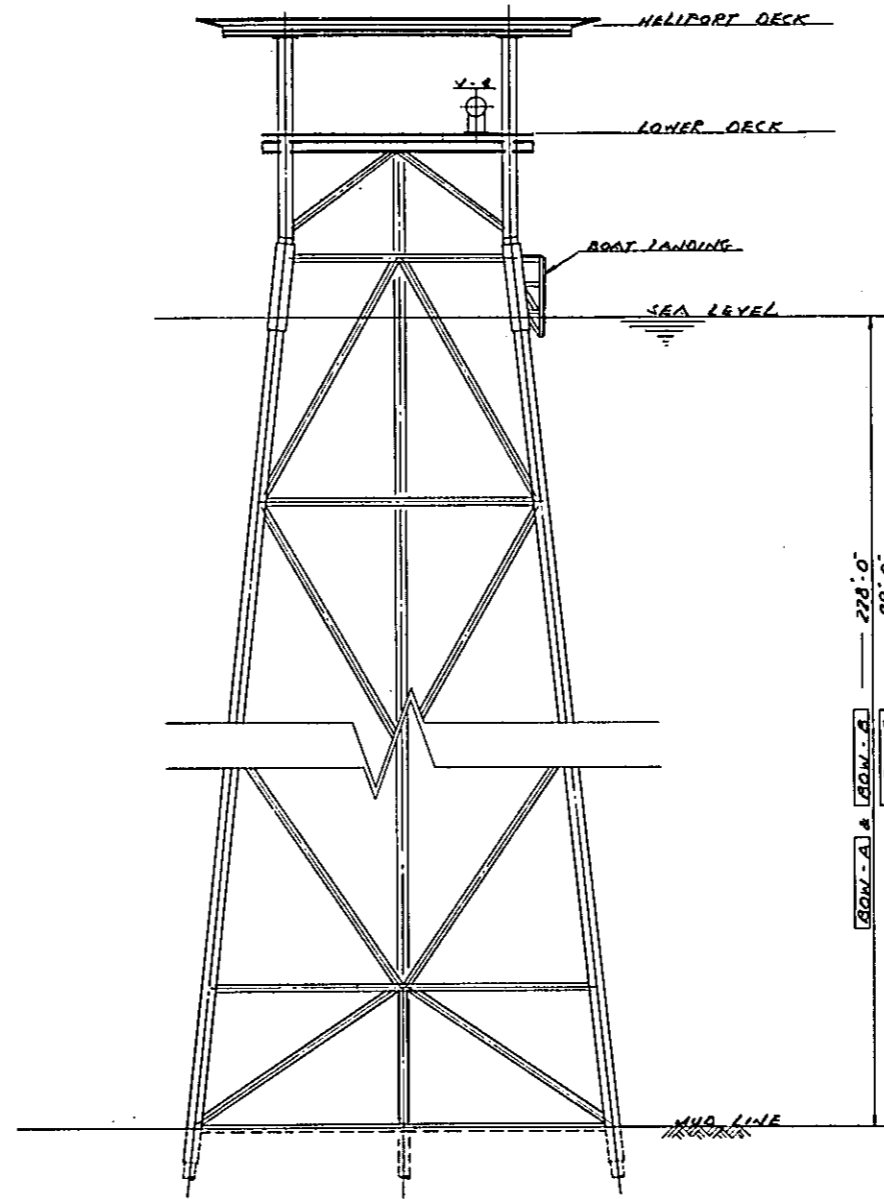
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TITLE FIG. 30-5-12 (Vol. IV) TYPICAL UTILITY FLOW DIAGRAM FOR GAS COMPRESSOR PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



PLAN



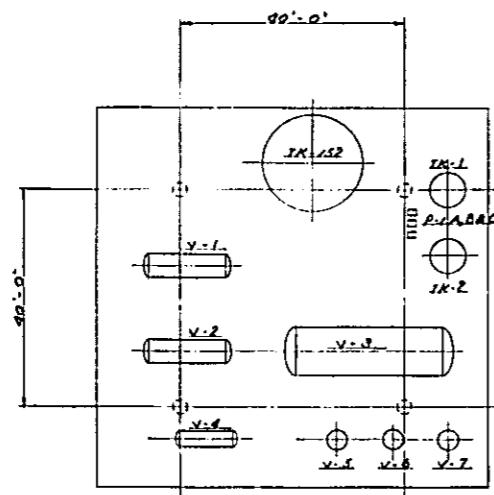
ELEVATION

EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
V-4	VESSEL
	TEST SEPARATOR

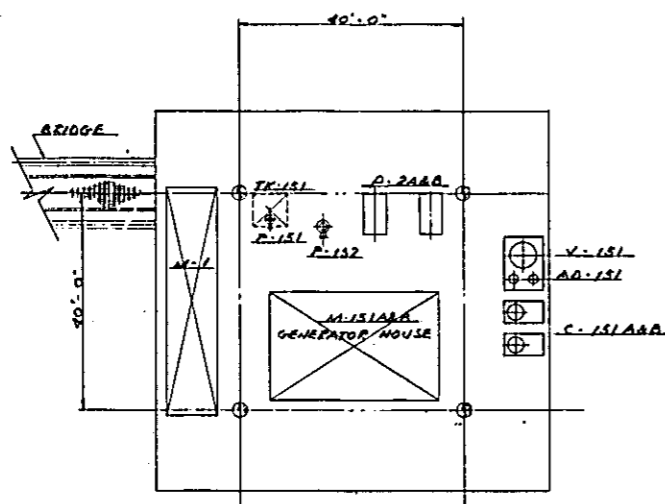
FOR BUDGET
PURPOSE ONLY

NOTE: THIS FIGURE IS FOR BOW-A&B AND NTN-B.

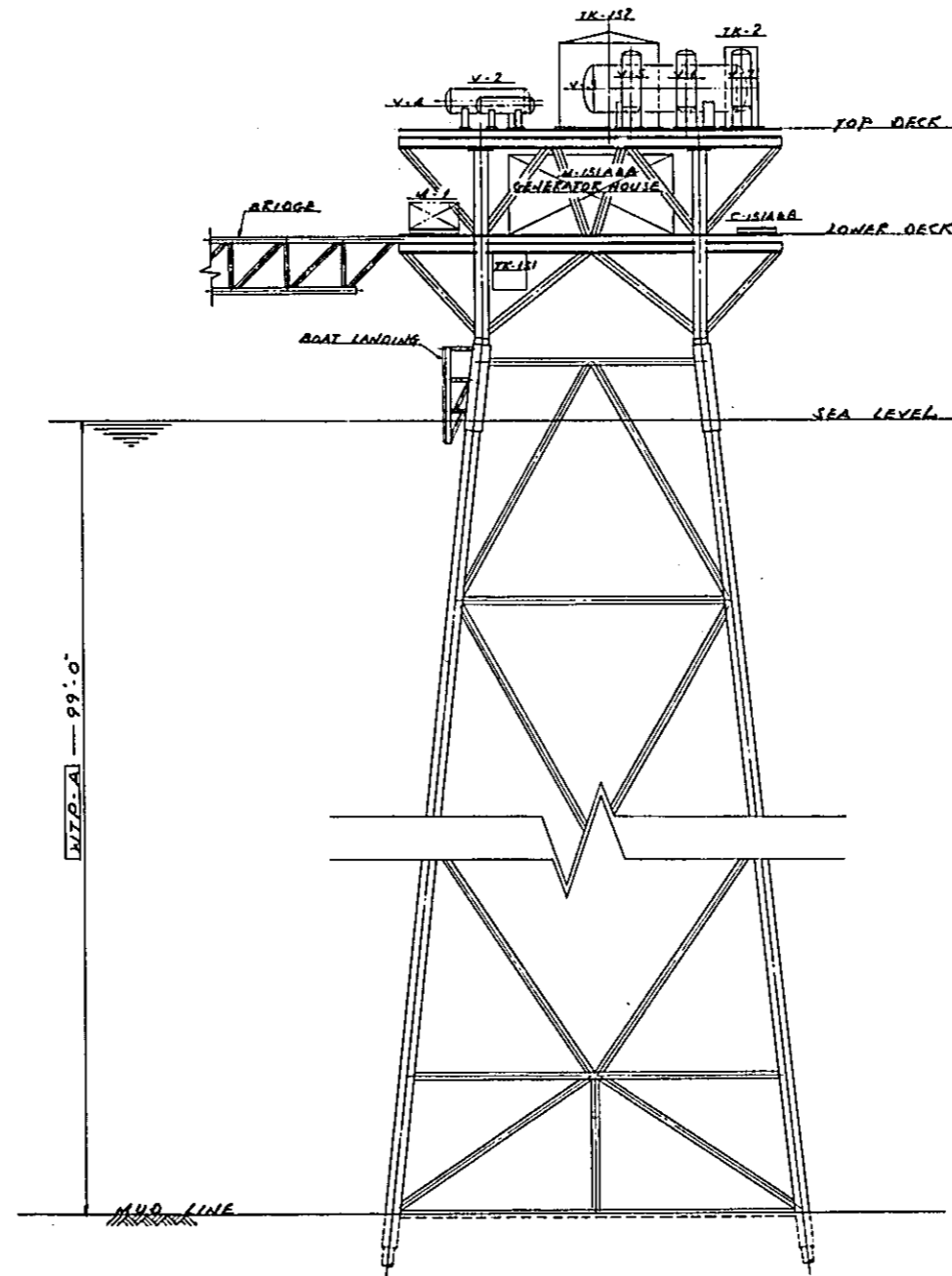
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-13 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR TENDER ASSISTED WELL PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



TOP DECK PLAN



LOWER DECK PLAN



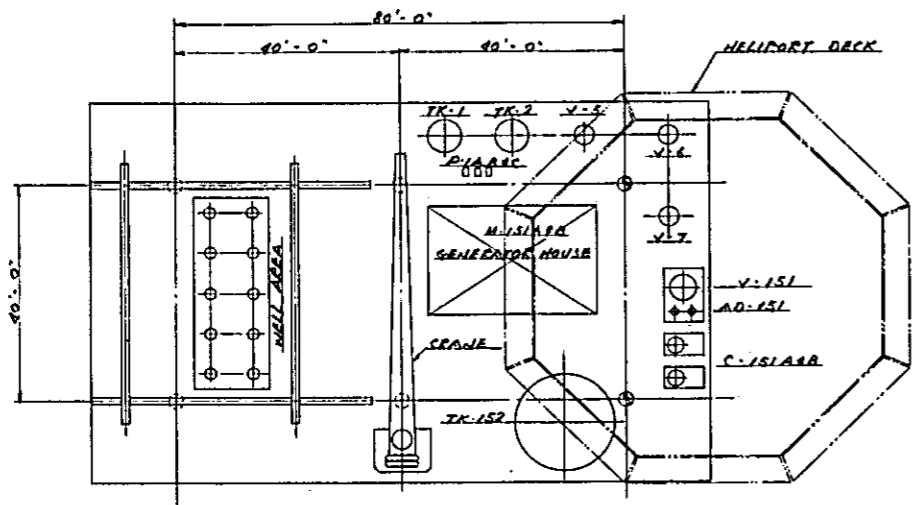
ELEVATION

EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
VESSEL	
V-1	1ST STAGE PRODUCTION SEPARATOR
V-2	2ND STAGE PRODUCTION SEPARATOR
V-3	3RD STAGE PRODUCTION SEPARATOR
V-4	TEST SEPARATOR
V-5	1ST STAGE FLARE SCRUBBER
V-6	2ND STAGE FLARE SCRUBBER
V-7	3RD STAGE FLARE SCRUBBER
V-151	INSTRUMENT AIR RECEIVER
MACHINERY	
C-151A,B	INSTRUMENT AIR COMPRESSORS
AD-151	INSTRUMENT AIR ORTER
PUMP	
P-1A,B,C	CHEMICAL INJECTION PUMPS
P-2A,B	CRUDE TRANSFER PUMPS
P-151	SUMP PUMP
P-152	FIRE WATER PUMP
TANK	
TK-1	DEEMULSIFIER TANK
TK-2	DEFOAMANT TANK
TK-151	SUMP TANK
TK-152	DIESEL STORAGE TANK
MISCELLANEOUS	
M-1	INLET MANIFOLD
M-151A,B	DIESEL DRIVEN GENERATORS

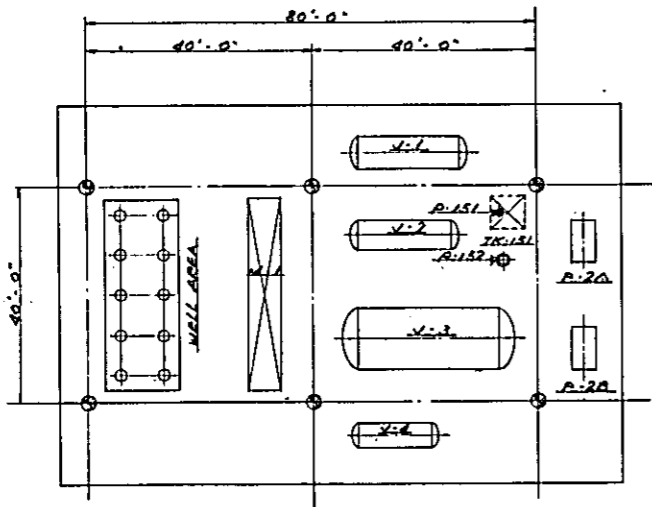
FOR BUDGET
PURPOSE ONLY

NOTE:
THIS FIGURE IS FOR WTP-A.

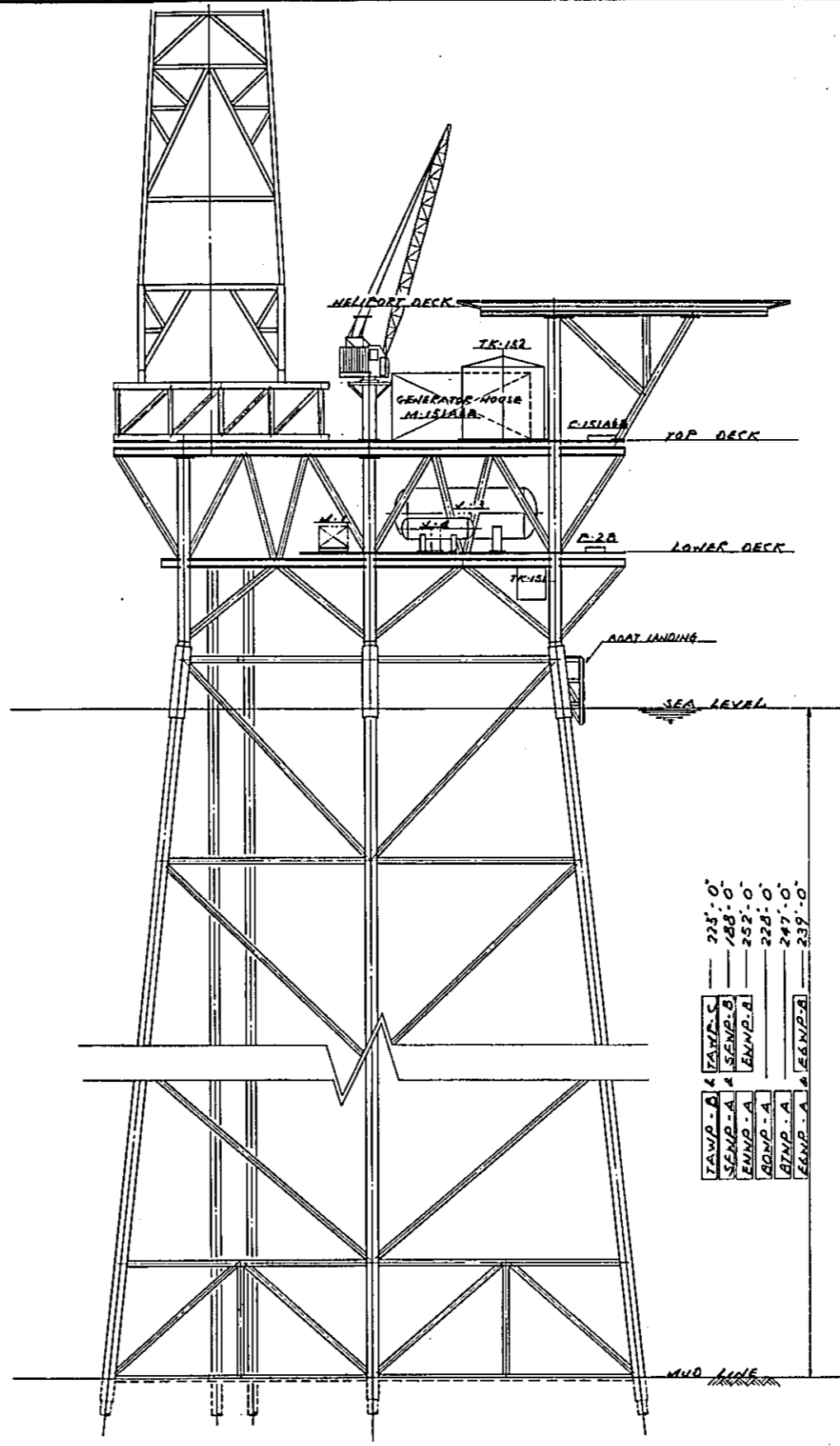
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD TITLE FIG. 30-5-15(Vol. IV) TYPICAL PLAN AND ELEVATION FOR 4-LEG OIL PRODUCTION PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



TOP DECK PLAN



LOWER DECK PLAN



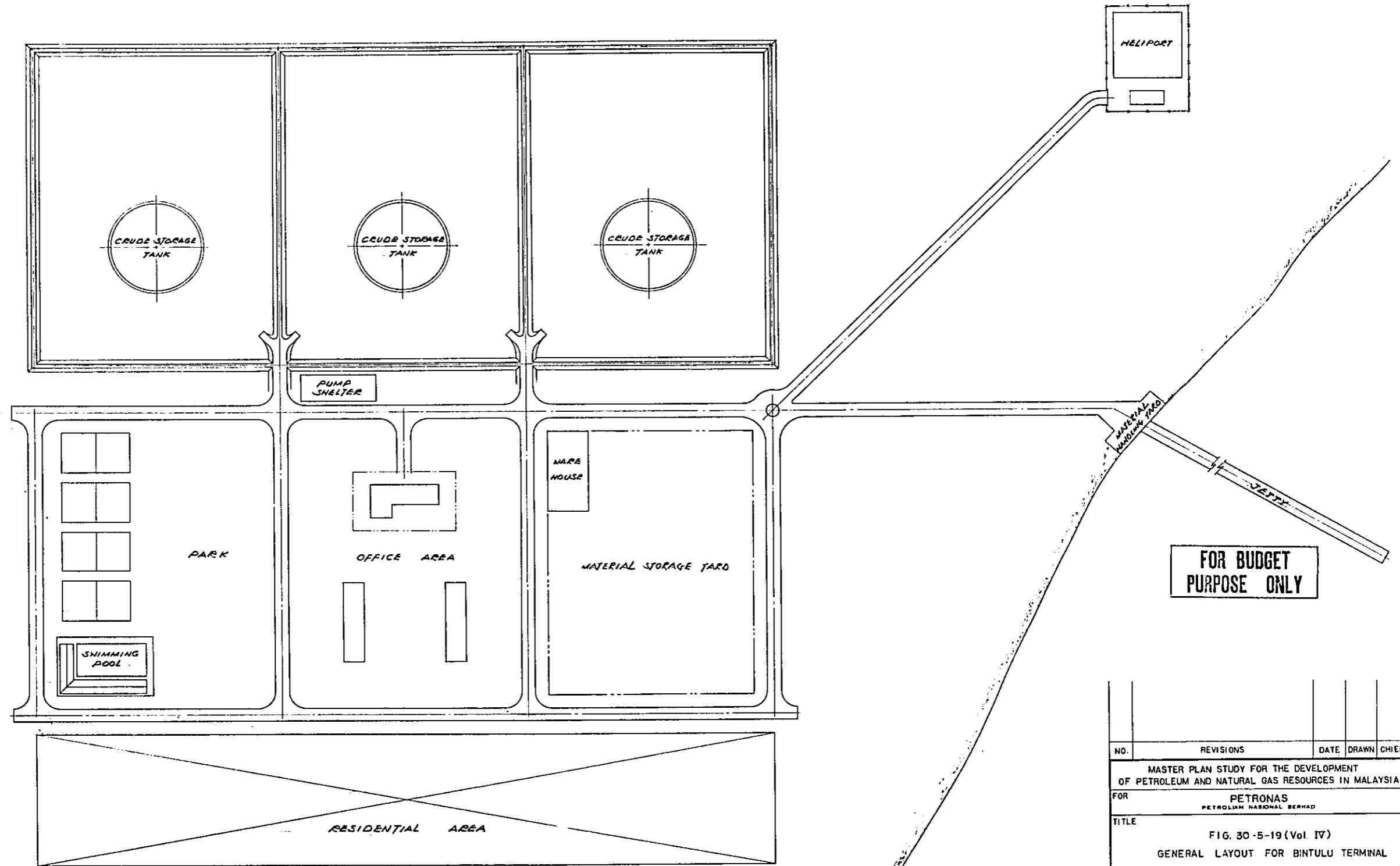
ELEVATION

EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
VESSEL	
V-1	1ST STAGE PRODUCTION SEPARATOR
V-2	2ND STAGE PRODUCTION SEPARATOR
V-3	3RD STAGE PRODUCTION SEPARATOR
V-4	TEST SEPARATOR
V-5	1ST STAGE FLARE SCRUBBER
V-6	2ND STAGE FLARE SCRUBBER
V-7	3RD STAGE FLARE SCRUBBER
V-151	INSTRUMENT AIR RECEIVER
MACHINERY	
C-151A&B	INSTRUMENT AIR COMPRESSORS
AD-151	INSTRUMENT AIR DRYER
PUMP	
P-1A,B&C	CHEMICAL INJECTION PUMPS
P-2A&B	CRUDE TRANSFER PUMPS
P-151	SUMP PUMP
P-152	FIRE WATER PUMP
TANK	
TK-1	DEEMULSIFIER TANK
TK-2	DEFOAMANT TANK
TK-151	SUMP TANK
TK-152	DIESEL STORAGE TANK
MISCELLANEOUS	
M-1	INLET MANIFOLD
M-151A&B	DIESEL DRIVEN GENERATORS

FOR BUDGET PURPOSE ONLY

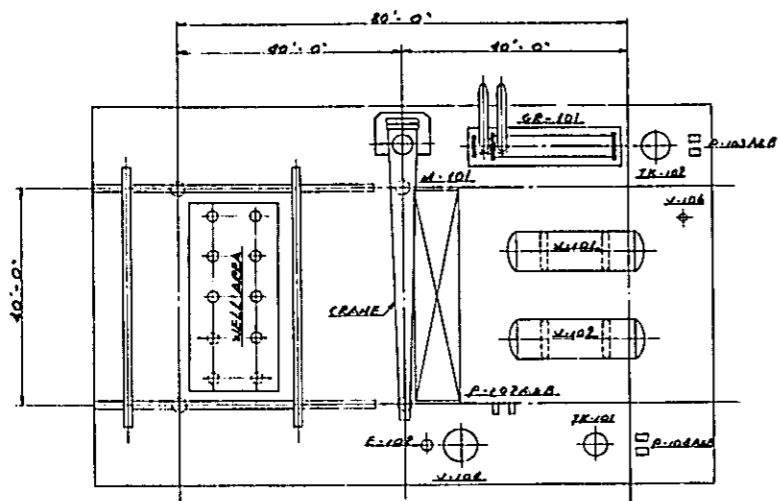
NOTE: THIS FIGURE IS FOR SFNP-A & B, BNWP-A&B, BONP-A, BINP-A, EBNP-A&B, AND TAMP-B&C.

NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD TITLE FIG 30-5-16 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR 6-LEG WELL & OIL PRODUCTION PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

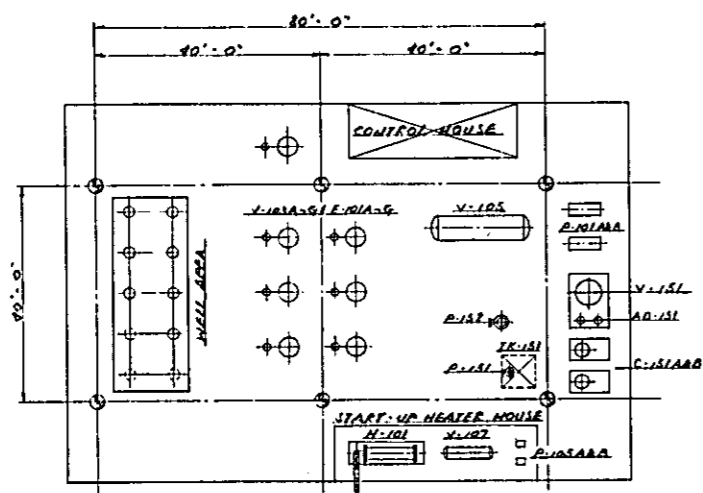


**FOR BUDGET
PURPOSE ONLY**

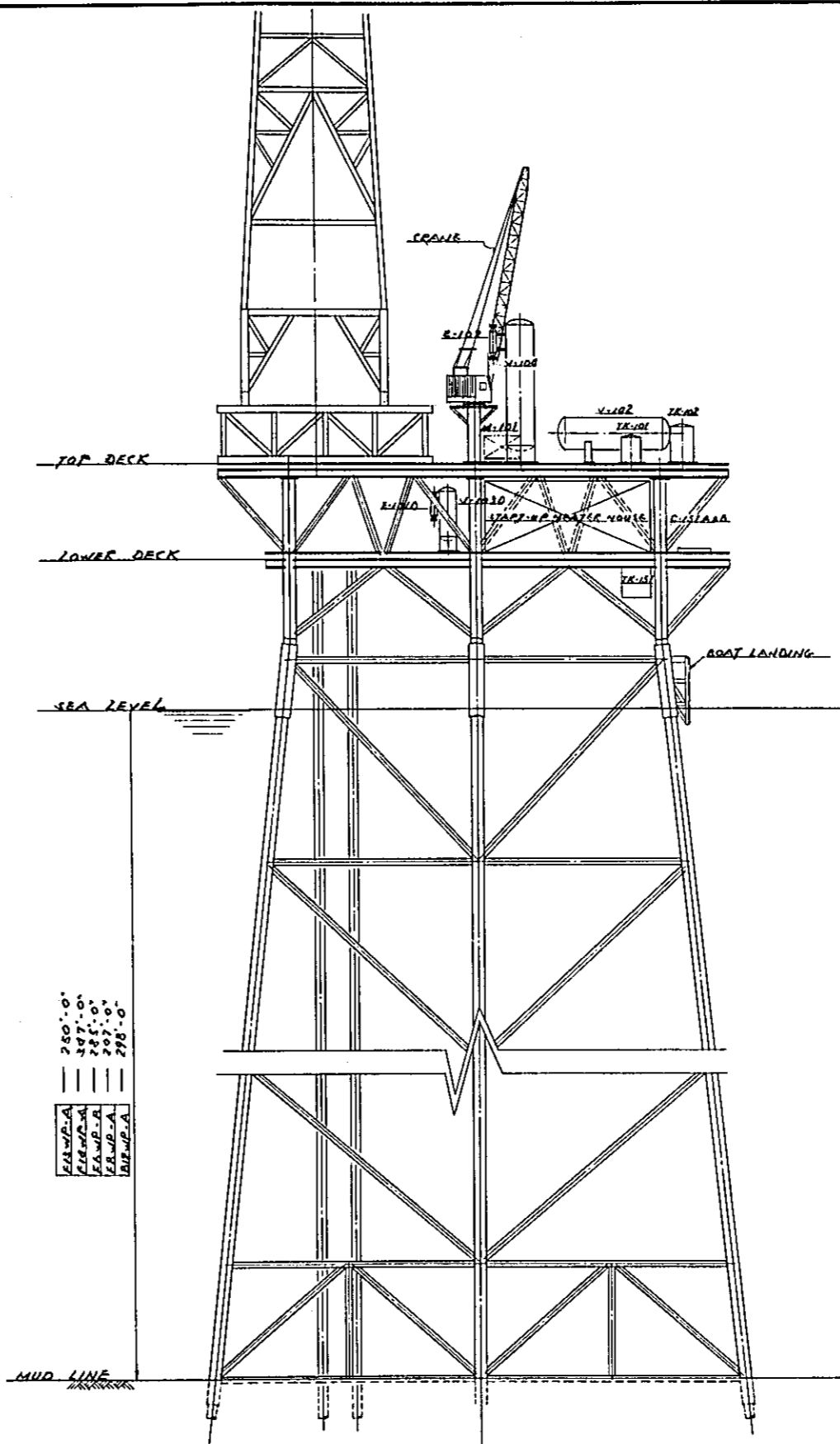
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIAN NASIONAL BERHAD				
TITLE FIG. 30-5-19 (Vol. IV) GENERAL LAYOUT FOR BINTULU TERMINAL				
DESIGN CHIEF	SCALE:			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



TOP DECK PLAN



LOWER DECK PLAN



ELEVATION

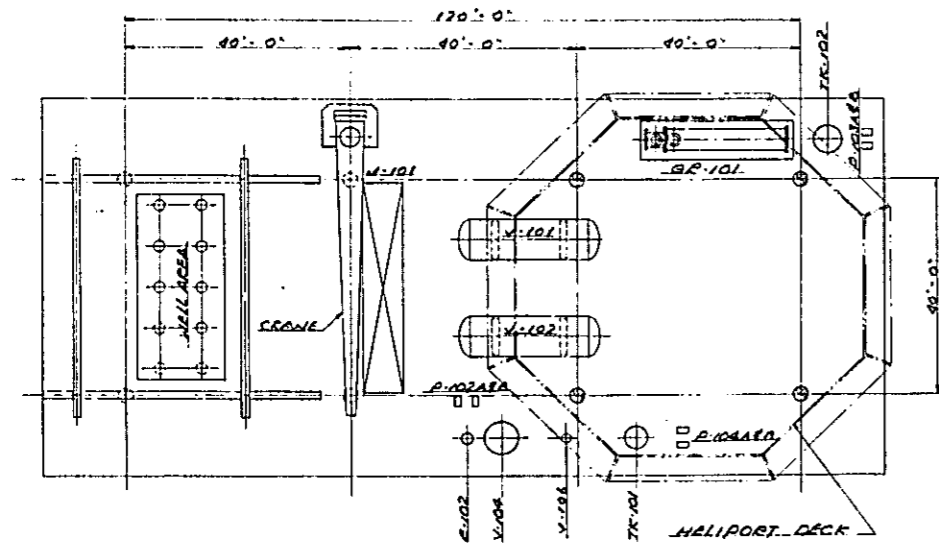
280'-0"	280'-0"
287'-0"	287'-0"
288'-0"	288'-0"
297'-0"	297'-0"
298'-0"	298'-0"

EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
VESSEL	
V-101	PRODUCTION SEPARATOR
V-102	TEST SEPARATOR
V-103A-G	LIQUID KNOCK OUT DRUMS
V-104	GLYCOL CONTACTOR
V-105	CONDENSATE SURGE VESSEL
V-106	FUEL GAS SCRUBBER
V-107	HEATING MEDIUM SURGE VESSEL
V-151	INSTRUMENT AIR RECEIVER
MACHINERY	
GR-101	GLYCOL REGENERATOR
H-101	START-UP HEATER
C-151A&B	INSTRUMENT AIR COMPRESSORS
AD-151	INSTRUMENT AIR DRYER
PUMP	
P-101A&B	CONDENSATE PUMPS
P-102A&B	GLYCOL CIRCULATION PUMPS
P-103A&B	GLYCOL CHARGE PUMPS
P-104A&B	CORROSION INHIBITOR PUMPS
P-105A&B	HEATING MEDIUM CIRCULATION PUMPS
P-151	SUMP PUMP
P-152	FIRE WATER PUMP
TANK	
TK-101	CORROSION INHIBITOR TANK
TK-102	GLYCOL STORAGE TANK
TK-151	SUMP TANK
HEAT EXCHANGER	
E-101A-G	HEAT EXCHANGERS
E-102	GLYCOL COOLER
MISCELLANEOUS	
M-101	INLET MANIFOLD

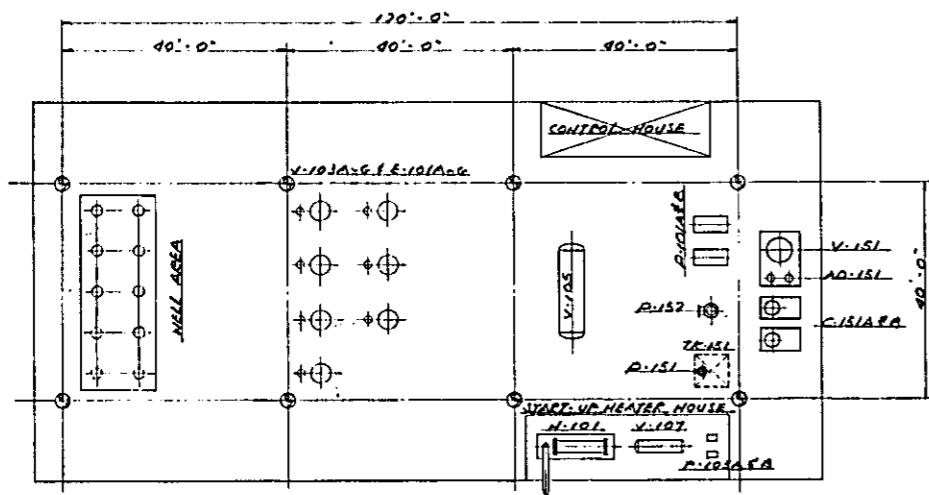
NOTE:
THIS FIGURE IS FOR F13NP-A, F14NP-A,
F6NP-B, E6NP-A AND B12NP-A.

**FOR BUDGET
PURPOSE ONLY**

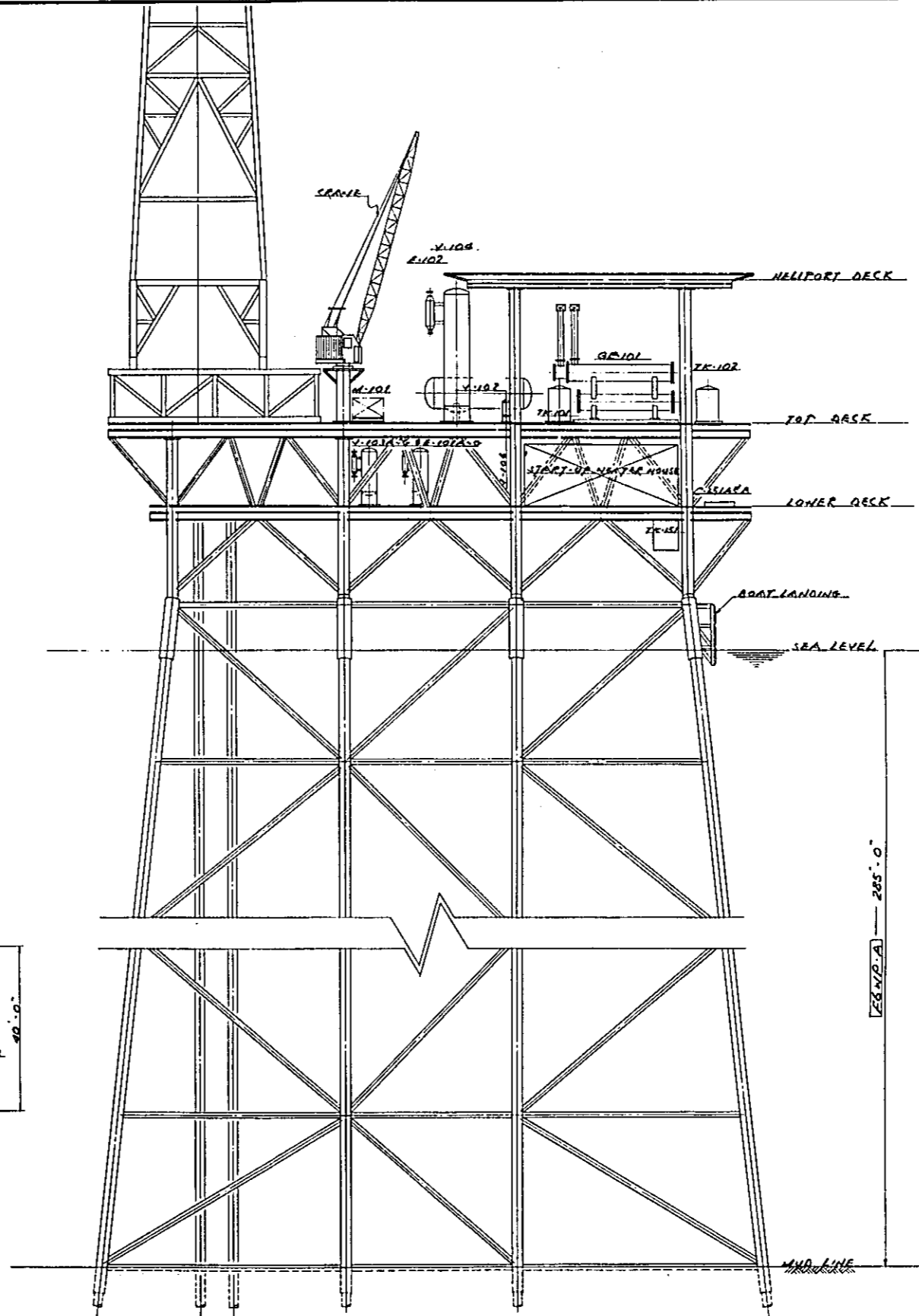
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA				
FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-20 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR TENDER ASSISTED 6-LEG WELL & GAS PRODUCTION PLATFORM				
DESIGN CHECK	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



TOP DECK PLAN



LOWER DECK PLAN



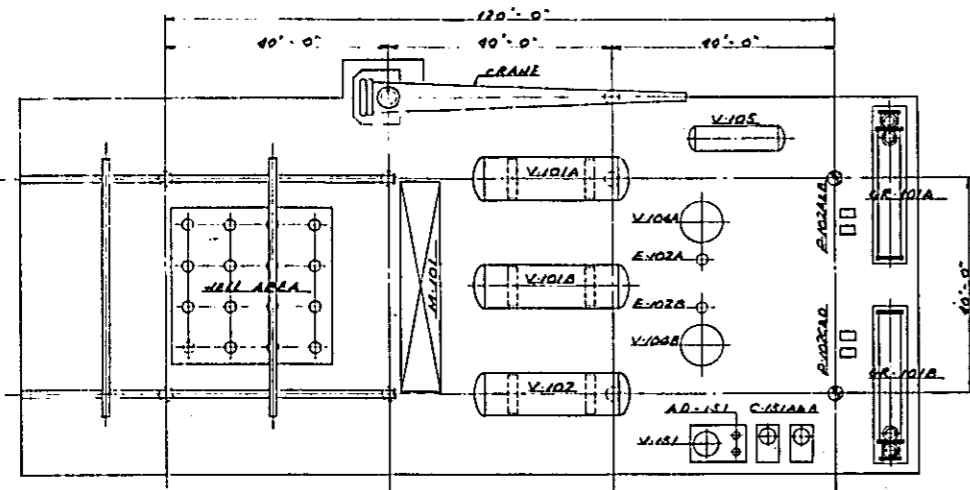
ELEVATION

EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
VESSEL	
V-101	PRODUCTION SEPARATOR
V-102	TEST SEPARATOR
V-103A-G	LIQUID KNOCK OUT DRUMS
V-104	GLYCOL CONTACTOR
V-105	CONDENSATE SURGE VESSEL
V-106	FUEL GAS SCRUBBER
V-107	HEATING MEDIUM SURGE VESSEL
V-151	INSTRUMENT AIR RECEIVER
MACHINERY	
GR-101	GLYCOL REGENERATOR
H-101	START-UP HEATER
C-151A-B	INSTRUMENT AIR COMPRESSORS
AD-151	INSTRUMENT AIR DRYER
PUMP	
P-101A-B	CONDENSATE PUMPS
P-102A-B	GLYCOL CIRCULATION PUMPS
P-103A-B	GLYCOL CHARGE PUMPS
P-104A-B	CORROSION INHIBITOR PUMPS
P-105A-B	HEATING MEDIUM CIRCULATION PUMPS
P-151	SUMP PUMP
P-152	FIRE WATER PUMP
TANK	
TK-101	CORROSION INHIBITOR TANK
TK-102	GLYCOL STORAGE TANK
TK-151	SUMP TANK
HEAT EXCHANGER	
E-101A-G	HEAT EXCHANGERS
E-102	GLYCOL COOLER
MISCELLANEOUS	
M-101	INLET MANIFOLD

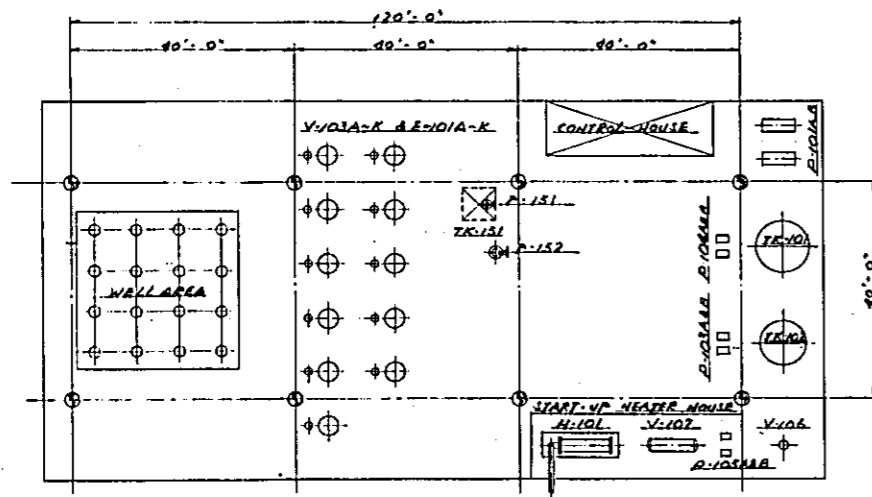
NOTE:
THIS FIGURE IS FOR F6NP-A.

FOR BUDGET
PURPOSE ONLY

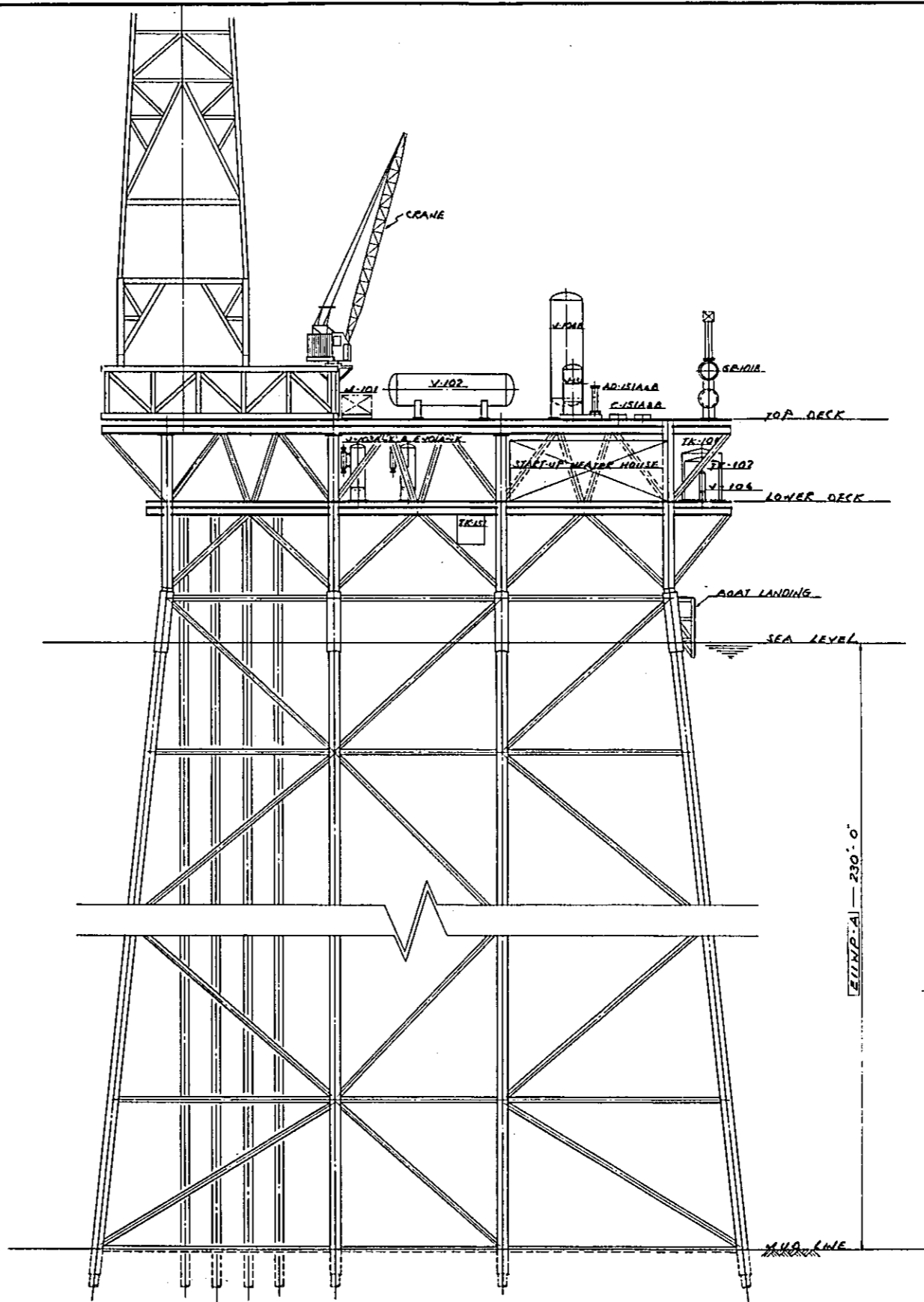
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA				
FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-21 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR TENDER ASSISTED 8-LEG WELL & GAS PRODUCTION PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



TOP DECK PLAN



LOWER DECK PLAN



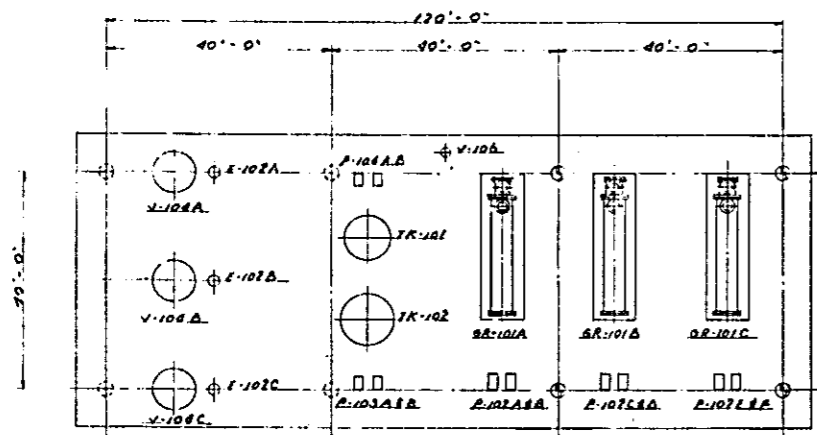
ELEVATION

EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
VESSEL	
V-101A&B	PRODUCTION SEPARATORS
V-102	TEST SEPARATOR
V-103A-K	LIQUID KNOCK OUT DRUMS
V-104A&B	GLYCOL CONTACTORS
V-105	CONDENSATE SURGE VESSEL
V-106	FUEL GAS SCRUBBER
V-107	HEATING MEDIUM SURGE VESSEL
V-151	INSTRUMENT AIR RECEIVER
MACHINERY	
GR-101A&B	GLYCOL REGENERATORS
H-101	START-UP HEATER
C-151A&B	INSTRUMENT AIR COMPRESSORS
AD-151	INSTRUMENT AIR DRYER
PUMP	
P-101A&B	CONDENSATE PUMPS
P-102A&B&C	GLYCOL CIRCULATION PUMPS
P-103A&B	GLYCOL CHARGE PUMPS
P-104A&B	CORROSION INHIBITOR PUMPS
P-105A&B	HEATING MEDIUM CIRCULATION PUMPS
P-151	SUMP PUMP
P-152	FIRE WATER PUMP
TANK	
TK-101	CORROSION INHIBITOR TANK
TK-102	GLYCOL STORAGE TANK
TK-151	SUMP TANK
HEAT EXCHANGER	
E-101A-K	HEAT EXCHANGERS
E-102A&B	GLYCOL COOLERS
MISCELLANEOUS	
M-101	INLET MANIFOLD

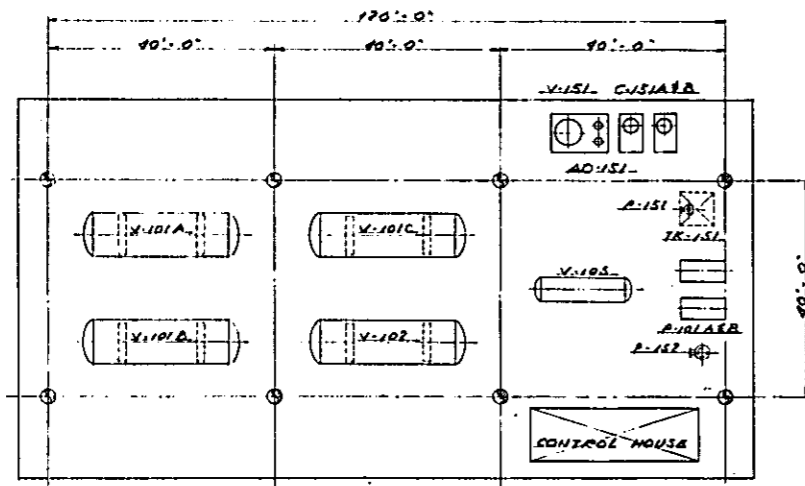
NOTE: THIS FIGURE IS FOR E11NP-A.

FOR BUDGET PURPOSE ONLY

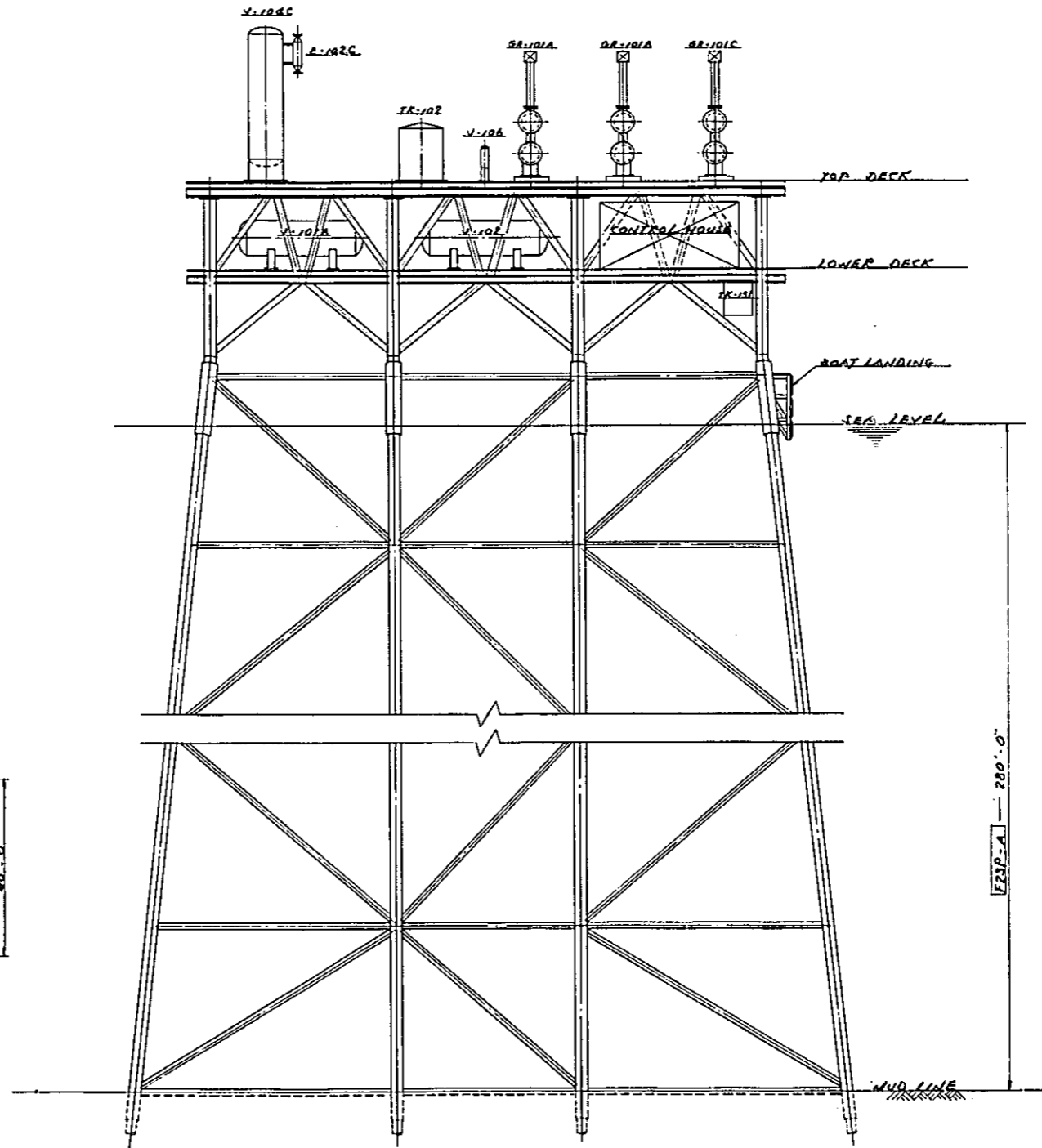
No.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA				
FOR PETRONAS PETROLIAN NASIONAL BERHAD				
TITLE FIG. 30-5-22(Vol. IV) TYPICAL PLAN AND ELEVATION FOR TENDER ASSISTED 8-LEG WELL & GAS PRODUCTION PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



TOP DECK PLAN



LOWER DECK PLAN



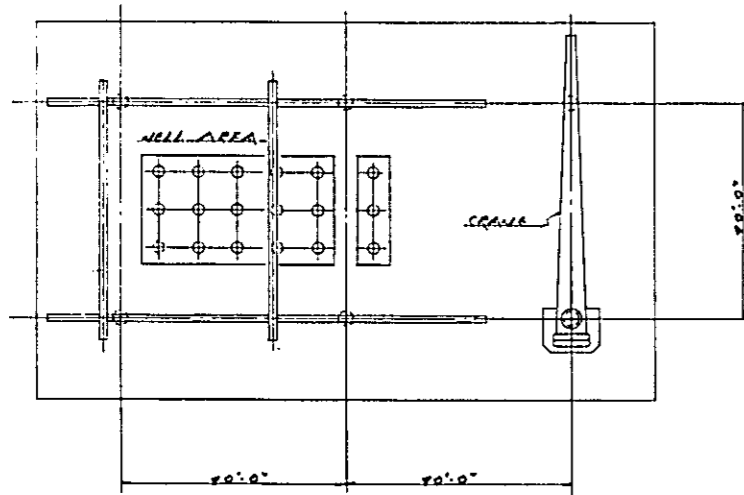
ELEVATION

EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
VESSEL	
V-101A/B/C	PRODUCTION SEPARATORS
V-102	TEST SEPARATOR
V-103A/B/C	GLYCOL CONTACTORS
V-105	CONDENSATE SURGE VESSEL
V-106	FUEL GAS SCRUBBER
V-151	INSTRUMENT AIR RECEIVER
MACHINERY	
GR-101A/B/C	GLYCOL REGENERATORS
C-151A/B	INSTRUMENT AIR COMPRESSORS
AD-151	INSTRUMENT AIR DRYER
PUMP	
P-101A/B	CONDENSATE PUMPS
P-102A-F	GLYCOL CIRCULATION PUMPS
P-103A/B	GLYCOL CHARGE PUMPS
P-104A/B	CORROSION INHIBITOR PUMPS
P-151	SUMP PUMP
P-152	FIRE WATER PUMP
TANK	
TR-101	CORROSION INHIBITOR TANK
TR-102	GLYCOL STORAGE TANK
TR-151	SUMP TANK
HEAT EXCHANGER	
E-102A/B/C	GLYCOL COOLERS

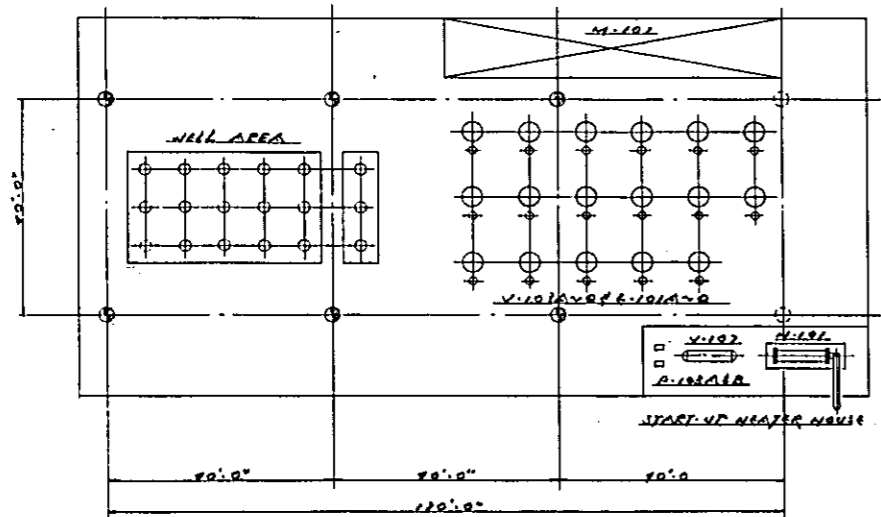
NOTE:
THIS FIGURE IS FOR F23P-A.

**FOR BUDGET
PURPOSE ONLY**

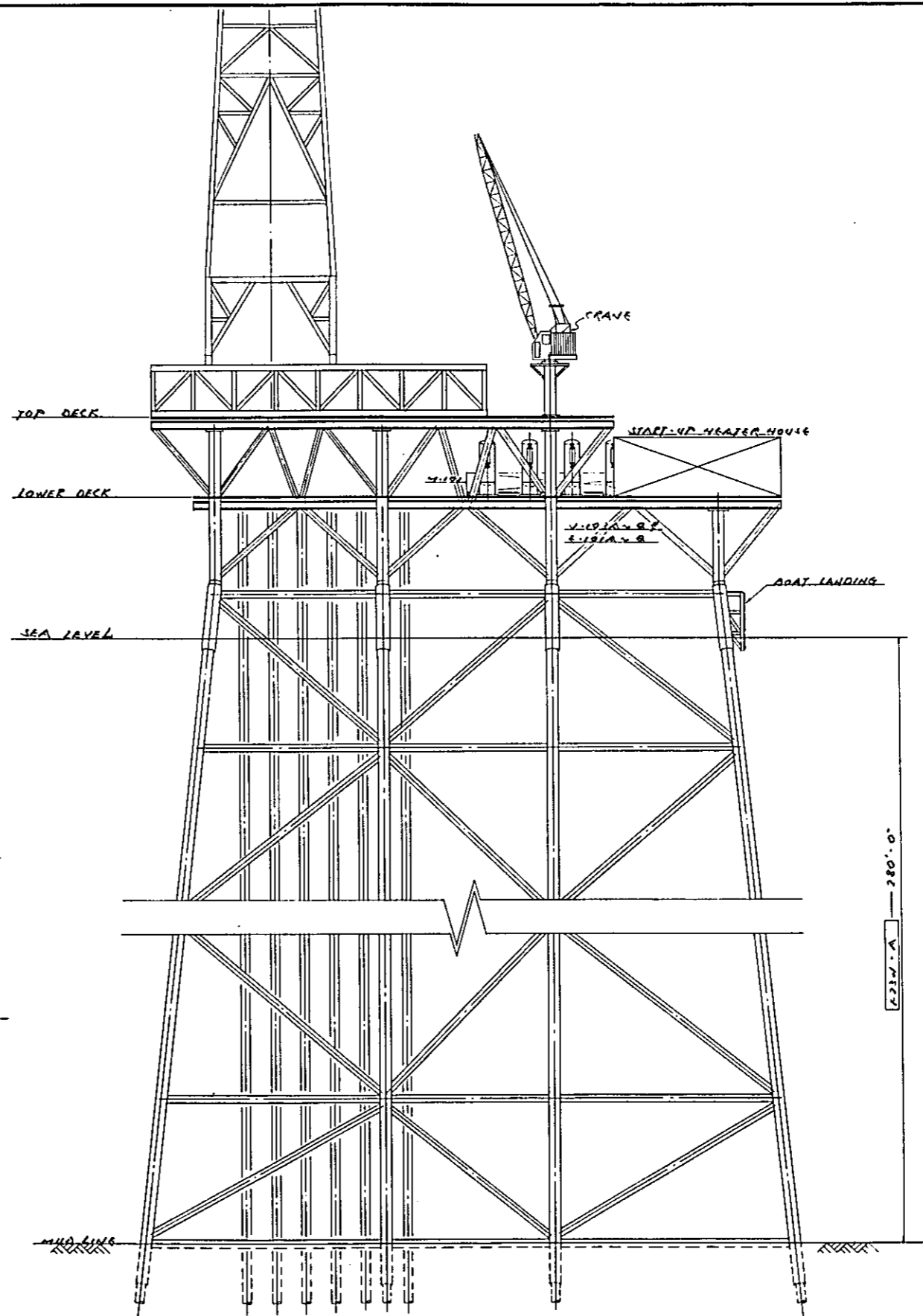
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-23 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR 8-LEG GAS PRODUCTION PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



TOP DECK PLAN



LOWER DECK PLAN



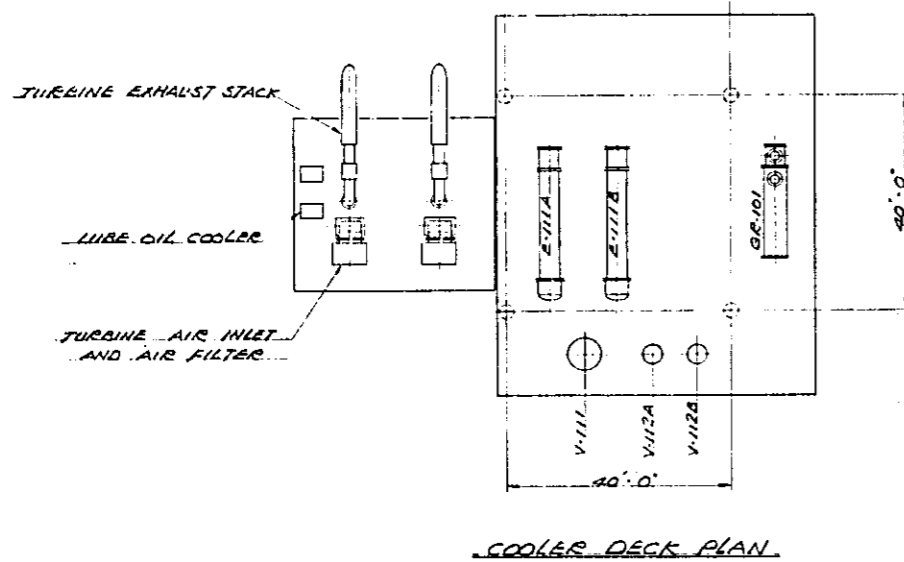
ELEVATION

EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
	VESSEL
V-102A/B	LIQUID KNOCK OUT DRUMS
V-107	HEATING MEDIUM SURGE VESSEL
	MACHINERY
M-101	START-UP HEATER
	PUMP
P-103A/B	HEATING MEDIUM CIRCULATION PUMPS
	HEAT EXCHANGER
E-101A/B	HEAT EXCHANGERS
	MISCELLANEOUS
M-101	WELL MANIFOLD

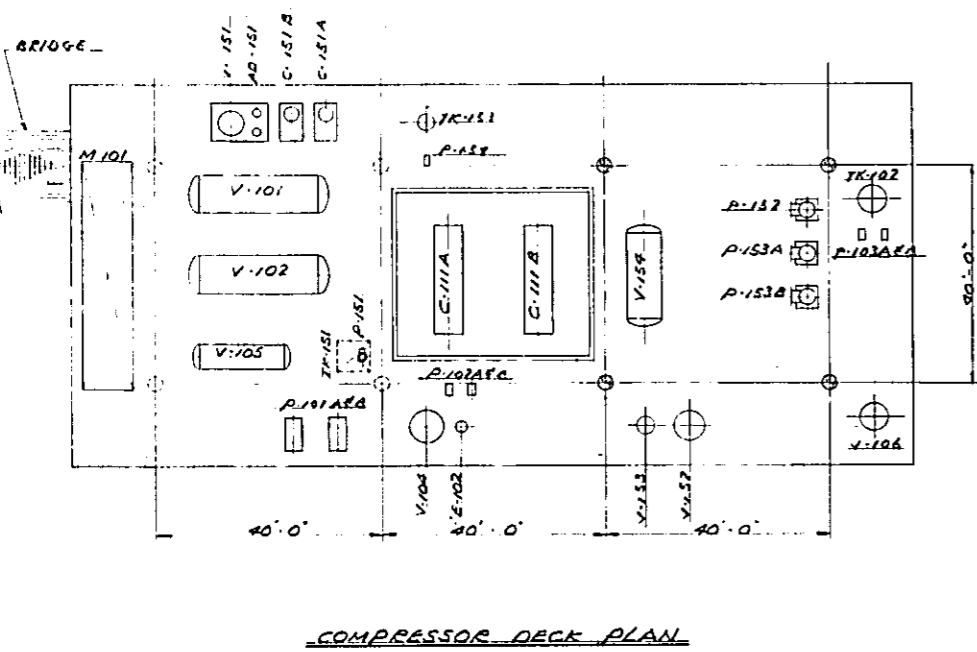
**FOR BUDGET
PURPOSE ONLY**

NOTE:
THIS FIGURE IS FOR F21W-A.

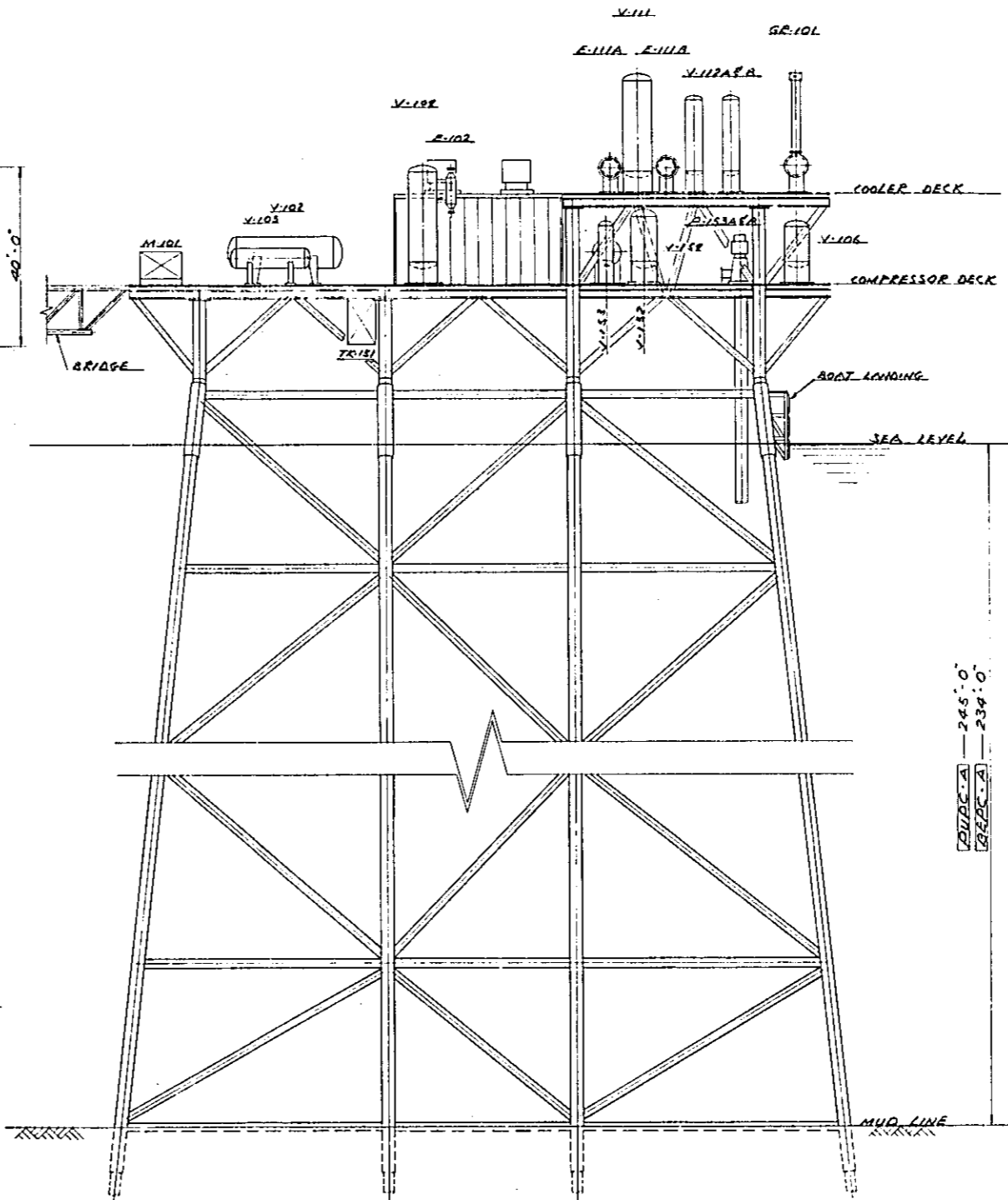
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD TITLE FIG. 30-5-24 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR TENDER ASSISTED 8-LEG WELL PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



COOLER DECK PLAN



COMPRESSOR DECK PLAN



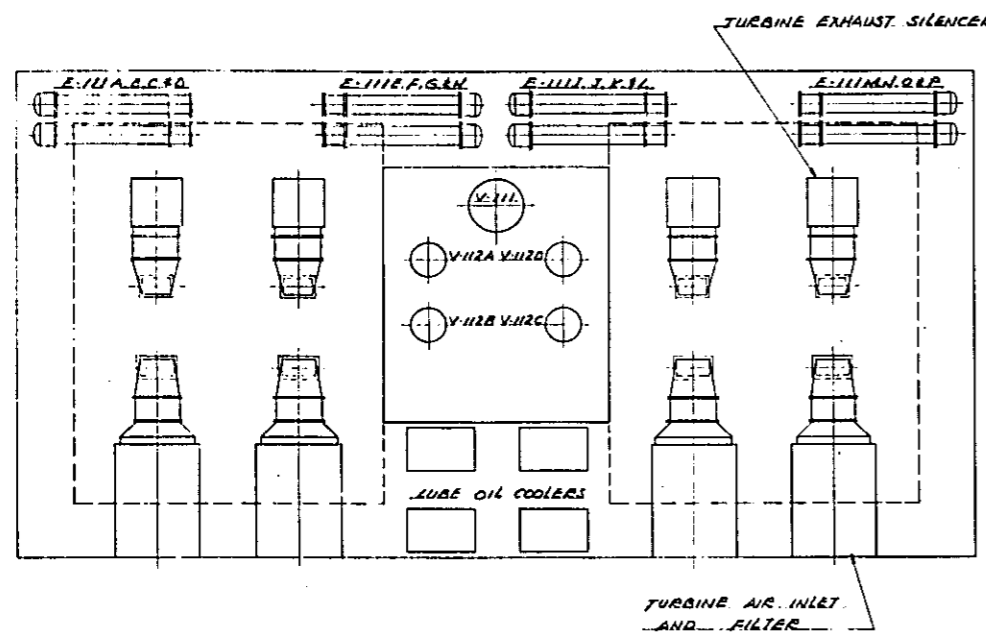
ELEVATION

EQUIPMENT LIST	
ITEM NO.	VESSEL
V-101	PRODUCTION SEPARATOR
V-102	TEST SEPARATOR
V-104	GLYCOL CONTACTOR
V-105	CONDENSATE SURGE VESSEL
V-106	FUEL GAS SCRUBBER
V-111	KNOCK OUT DRUM
V-112A/B	UNIT SUCTION SCRUBBERS
V-151	INSTRUMENT AIR RECEIVER
V-152	FUEL GAS HOLDER
V-153	FUEL GAS FILTER
V-157	BLON CASE
MACHINERY	
P-101	GLYCOL REGENERATOR
C-111A/B	GAS TURBINE COMPRESSORS
C-151A/B	INSTRUMENT AIR COMPRESSOR
A-151	INSTRUMENT AIR DRYER
PUMP	
P-101A/B	CONDENSATE PUMPS
P-102A/B	GLYCOL CIRCULATION PUMPS
P-103A/B	GLYCOL CHARGE PUMPS
P-151	SUMP PUMP
P-152	FIRE WATER PUMP
P-153A/B	SEAWATER PUMPS
P-158	FRESH WATER PUMP
TANK	
TK-102	GLYCOL STORAGE TANK
TK-151	SUMP TANK
TK-153	FRESH WATER TANK
HEAT EXCHANGER	
E-107	GLYCOL COOLER
E-111A/B	AFTER COOLERS
MISCELLANEOUS	
M-101	WILET MANIFOLD

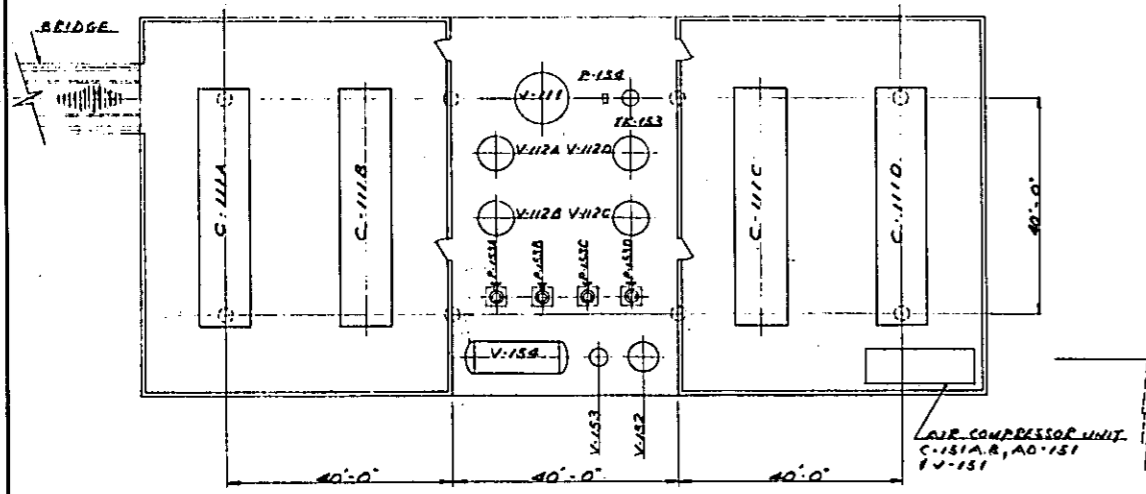
NOTE: THIS FIGURE IS FOR PDK-A AND BEPC-A.

FOR BUDGET PURPOSE ONLY

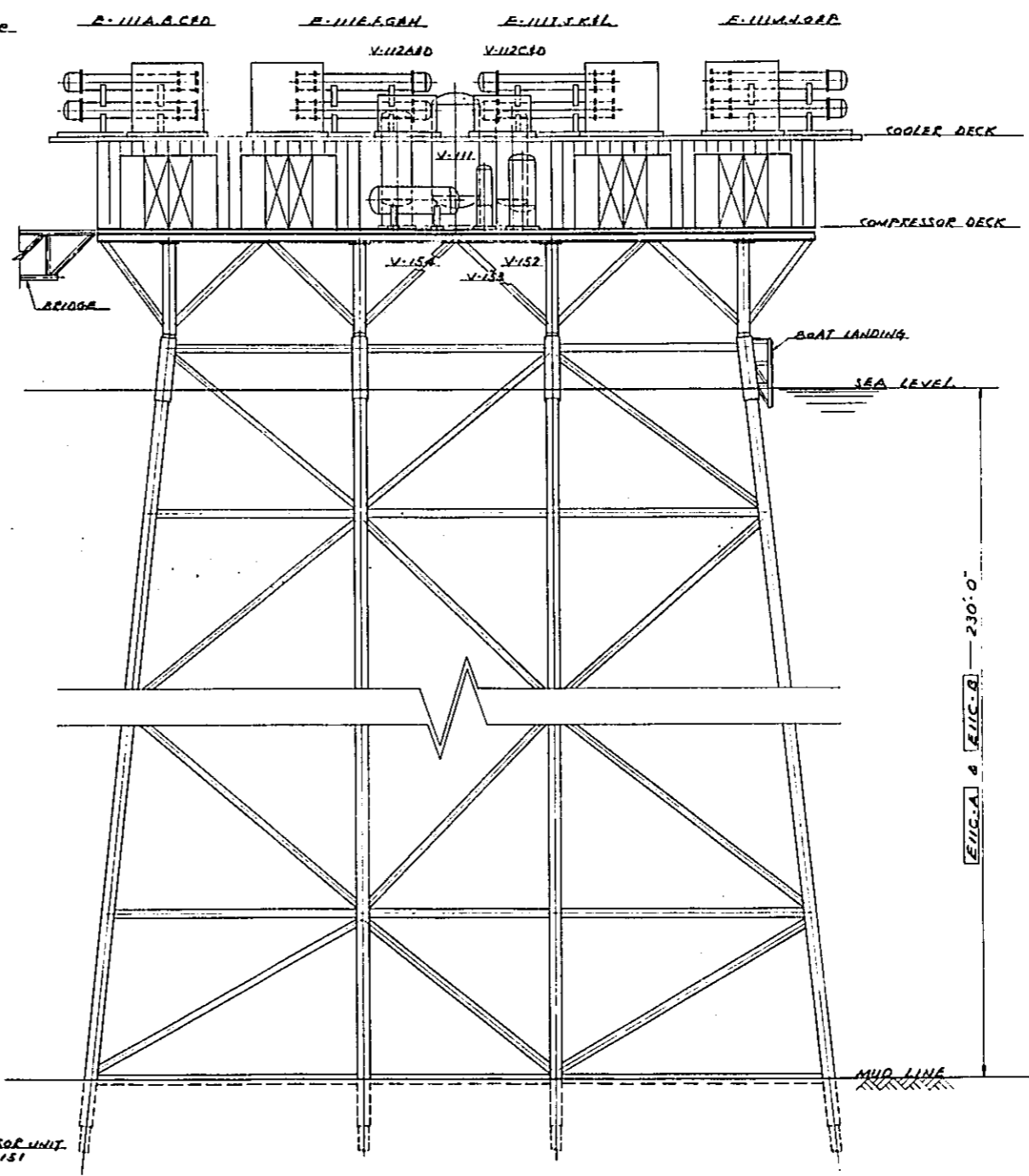
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE: FIG. 30-5-25 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR 8-LEG GAS PRODUCTION & COMPRESSOR PLATFORM				
DESIGN CHECK	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



COOLER DECK PLAN



COMPRESSOR DECK PLAN



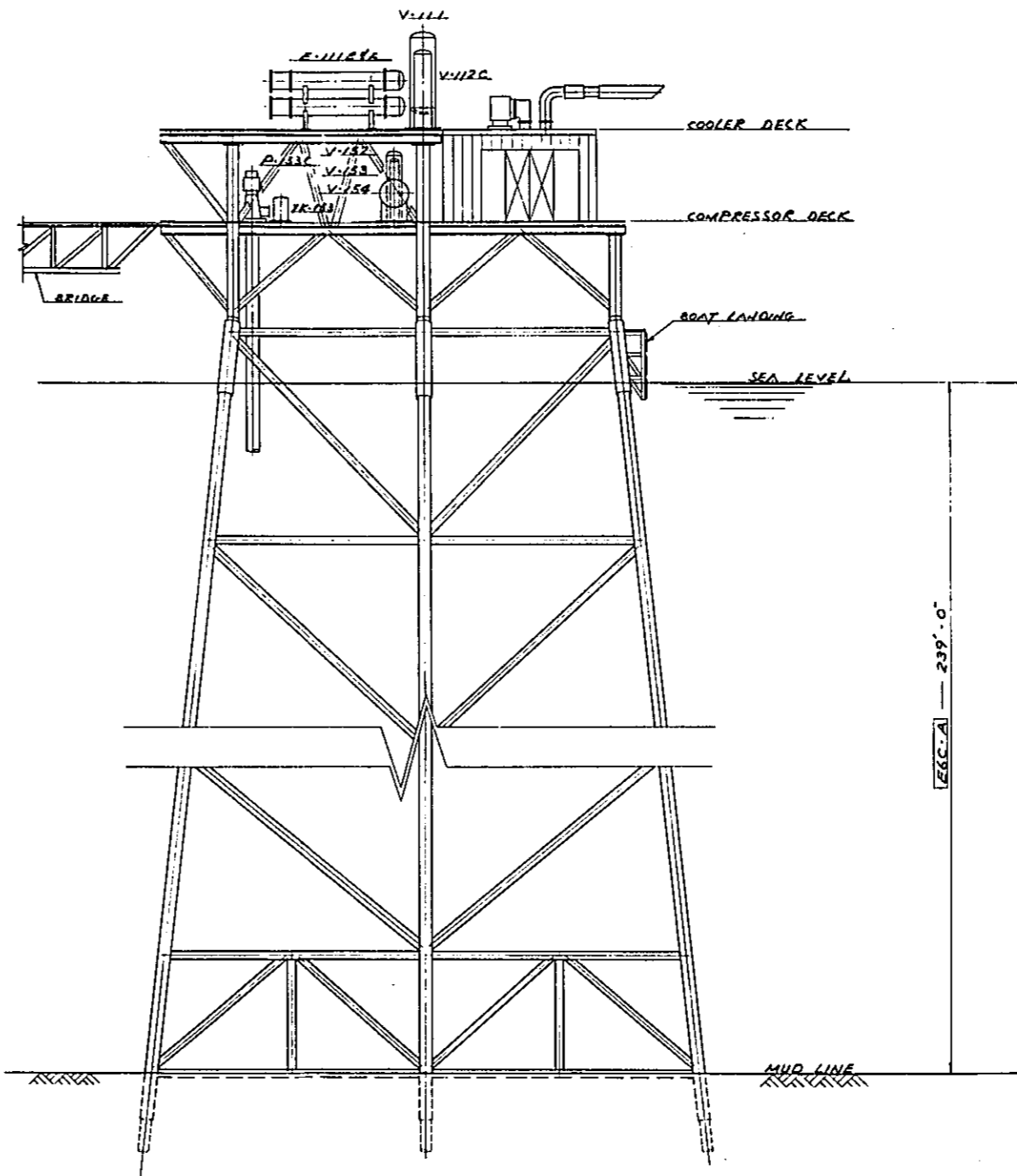
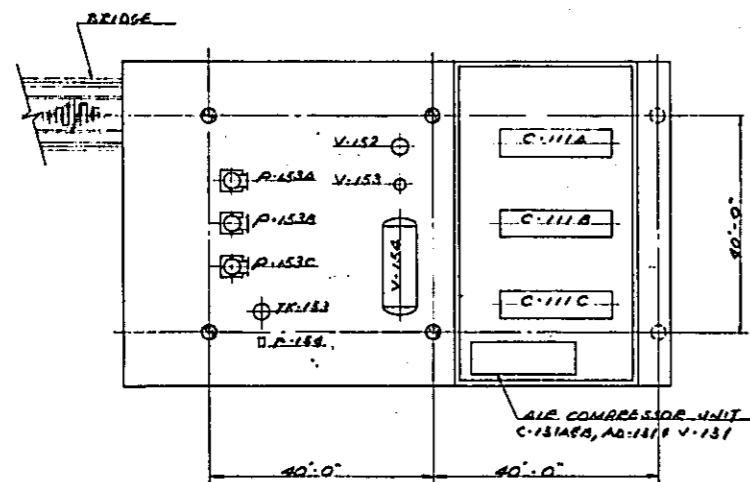
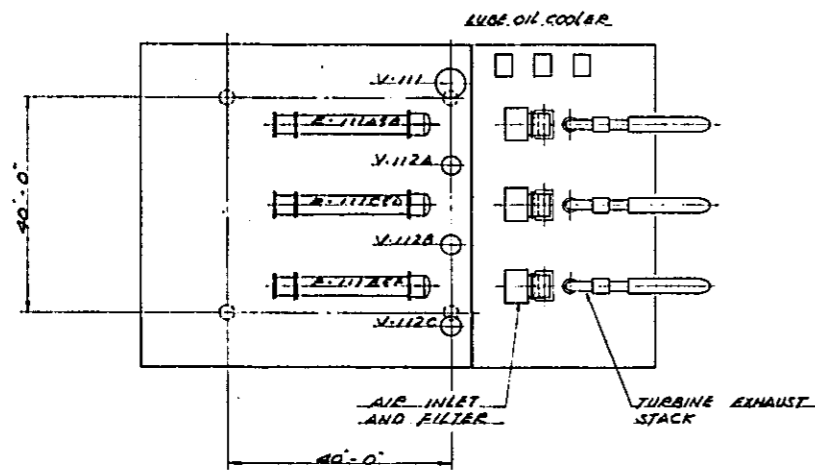
ELEVATION

EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
VESSEL	
V-111	KNOCK OUT DRUM
V-112A,B,C,D	UNIT SUCTION SCRUBBERS
V-151	INSTRUMENT AIR RECEIVER
V-152	FUEL GAS HOLDER
V-153	FUEL GAS FILTER
V-154	BLOW CASE
MACHINERY	
C-111A,B,C,D	GAS TURBINE COMPRESSORS
C-111A,B	INSTRUMENT AIR COMPRESSORS
AD-111	INSTRUMENT AIR DRYER
PUMP	
P-153A-D	SEA WATER PUMPS
P-154	FRESH WATER PUMP
TANK	
TK-153	FRESH WATER TANK
HEAT EXCHANGER	
E-111A-P	AFTER COOLERS

NOTE: THIS FIGURE IS FOR E11C-A&B.

FOR BUDGET PURPOSE ONLY

NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-26(Vol. IV) TYPICAL PLAN AND ELEVATION FOR 8-LEG GAS COMPRESSOR PLATFORM				
DESIGN CHECK	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

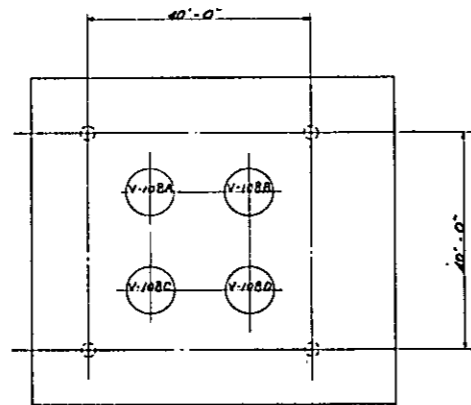


EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
VESSEL	
V-111	KNOCK OUT DRUM
V-112A/B/C	UNIT SUCTION SCRUBBERS
V-151	INSTRUMENT AIR RECEIVER
V-152	FUEL GAS HOLDER
V-153	FUEL GAS FILTER
V-154	BLOW CASE
MACHINERY	
C-111A/B/C	GAS TURBINE COMPRESSORS
C-151A/B	INSTRUMENT AIR COMPRESSORS
AD-151	INSTRUMENT AIR DRYER
PUMP	
P-153A/B/C	SEAWATER PUMPS
P-154	FRESH WATER PUMP
TANK	
TK-153	FRESH WATER TANK
HEAT EXCHANGER	
E-111A-F	AFTER COOLERS

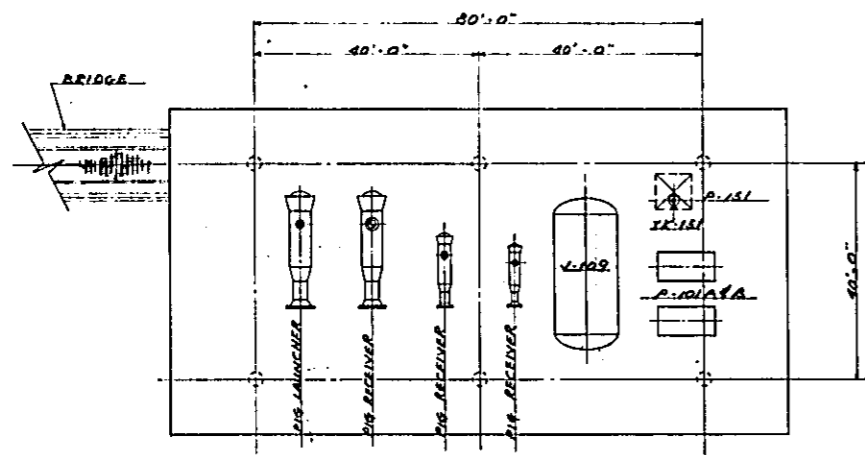
NOTE:
THIS FIGURE IS FOR E6C-A.

**FOR BUDGET
PURPOSE ONLY**

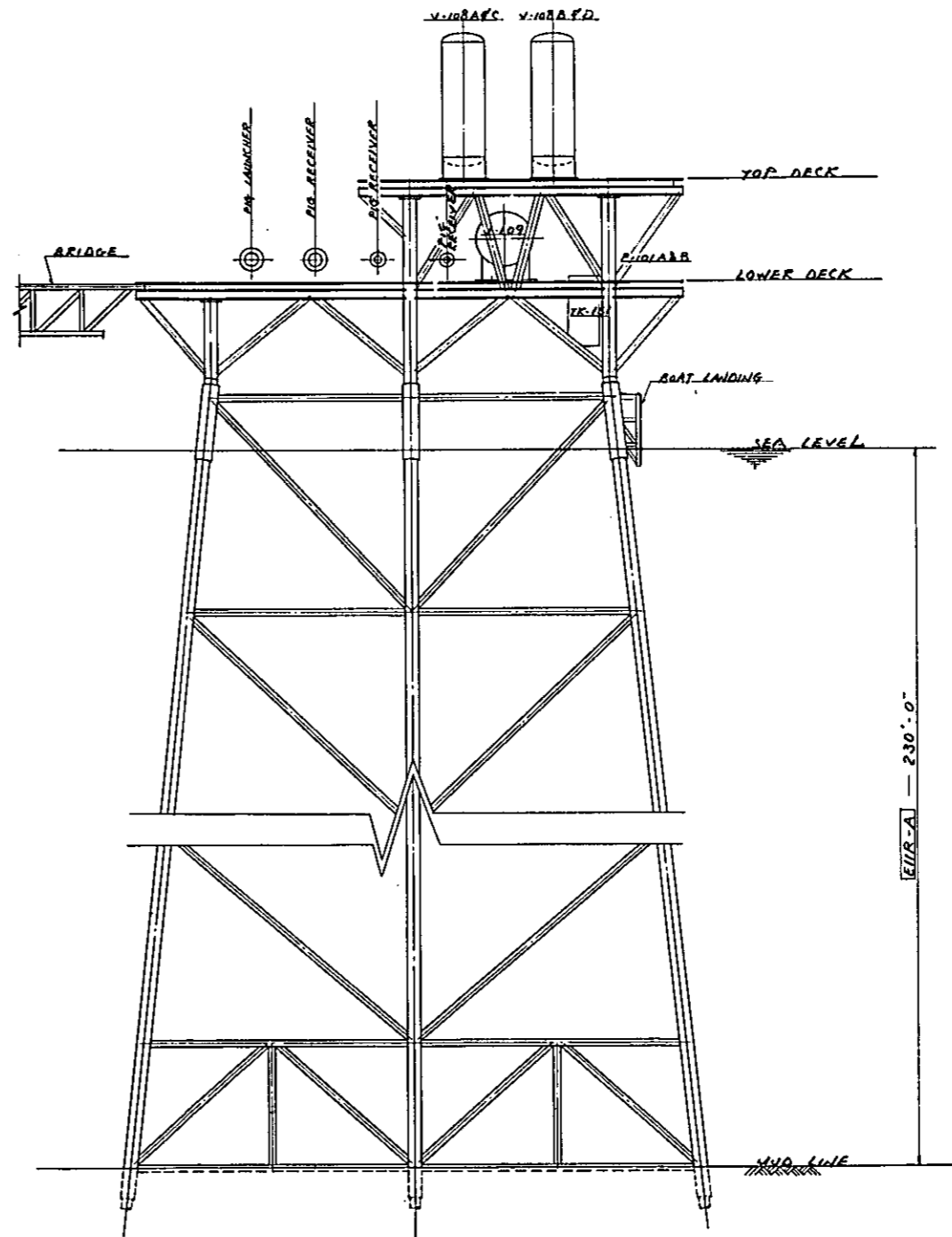
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD TITLE FIG. 30-5-27 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR 6-LEG GAS COMPRESSOR PLATFORM				
DESIGN CHECK	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



TOP DECK PLAN



LOWER DECK PLAN



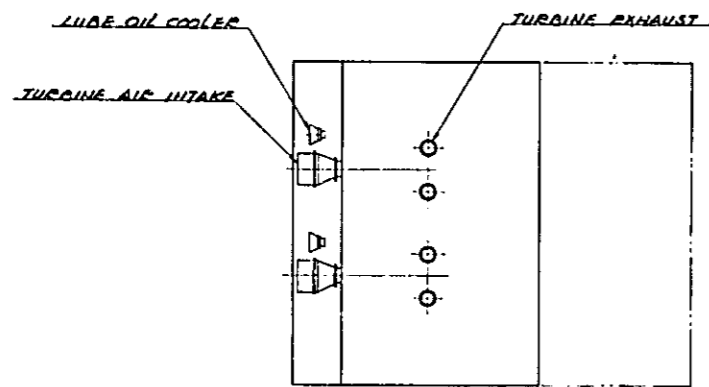
ELEVATION

EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
	VESSEL
V-108A-D	CENTRIFUGAL SEPARATORS
V-109	FLASH TANK
	PUMP
P-101A & B	CONDENSATE PUMPS
P-151	SUMP PUMP
	TANK
TK-151	SUMP TANK

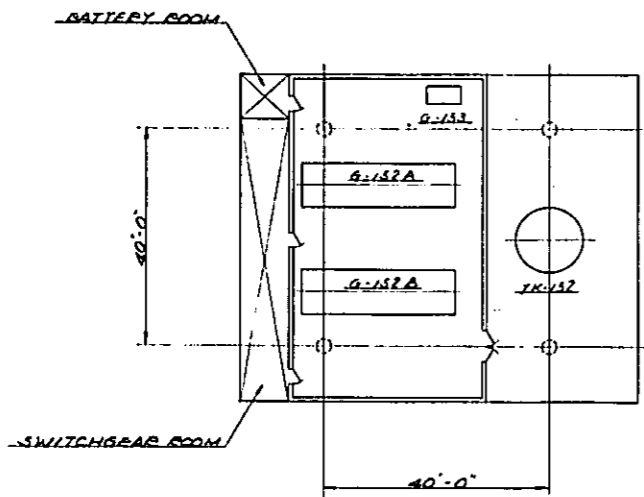
**FOR BUDGET
PURPOSE ONLY**

NOTE:
THIS FIGURE IS FOR E11R-A.

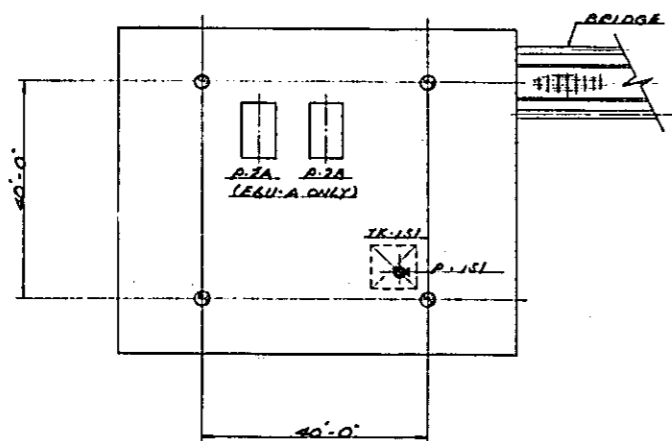
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD TITLE FIG. 30-5-28 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR 6-LEG RISER PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



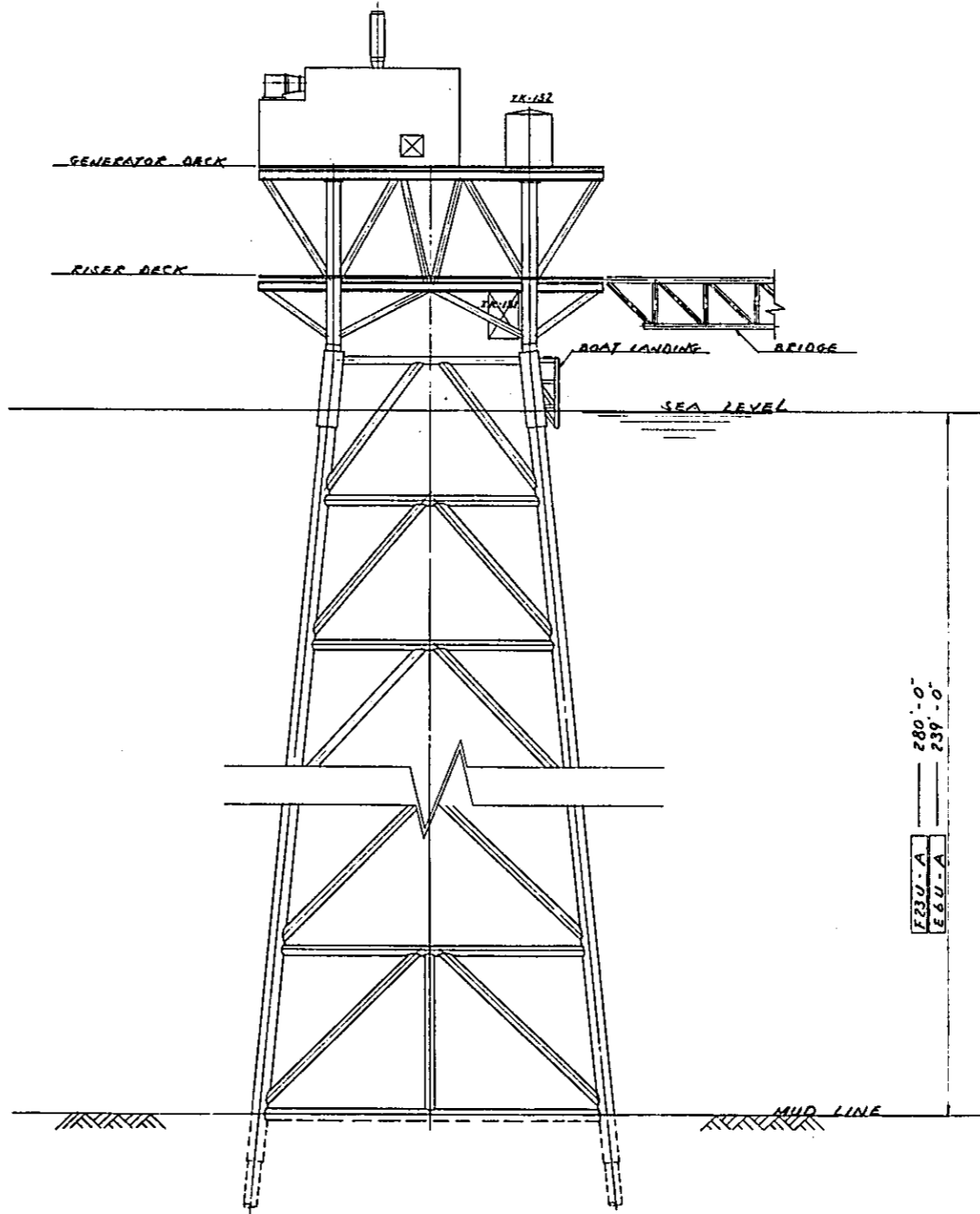
TOP PLAN



GENERATOR DECK PLAN



RISER DECK PLAN



ELEVATION

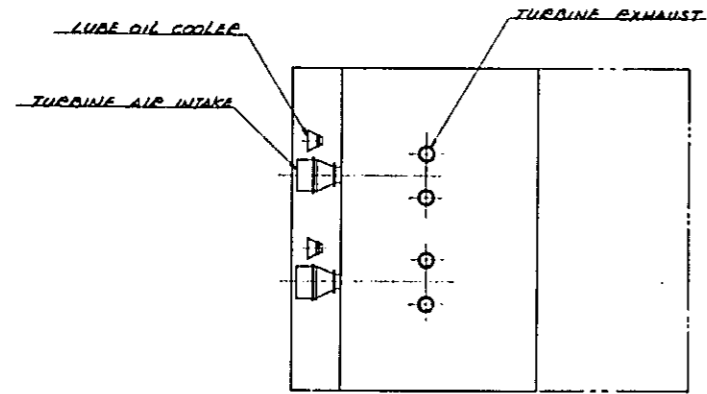
EQUIPMENT LIST	
TAG NO.	DESCRIPTION
GENERATOR	
G-152A & B	GAS TURBINE GENERATORS
G-153	EMERGENCY GENERATOR
PUMP	
P-2A & B	CRUDE TRANSFER PUMPS (EGU-A ONLY)
P-151	SUMP PUMP
TANK	
TK-151	SUMP TANK
TK-152	DIESEL STORAGE TANK

NOTE:
THIS FIGURE IS FOR F23U-A AND E6U-A.

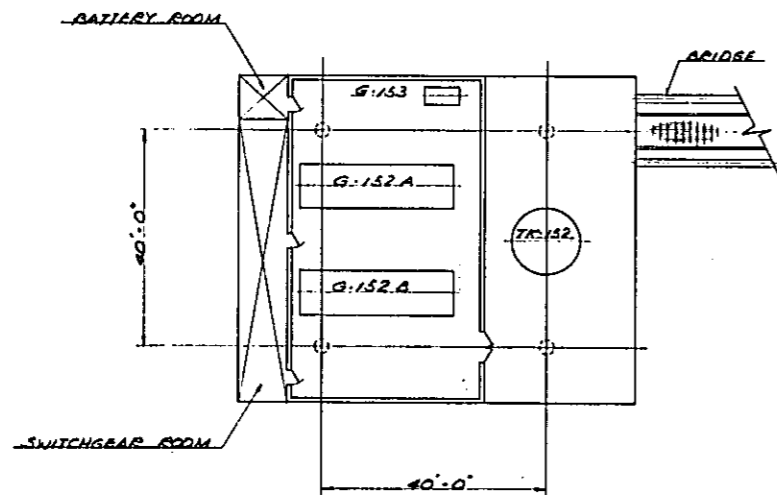
FOR BUDGET
PURPOSE ONLY

NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-29 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR 4-LEG UTILITY PLATFORM				
DESIGN CHIEF	SCALE			
CHECKED BY	PROJECT NO.			
DESIGNED BY	DRAWING NO.			
DRAWN BY	DATE			
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

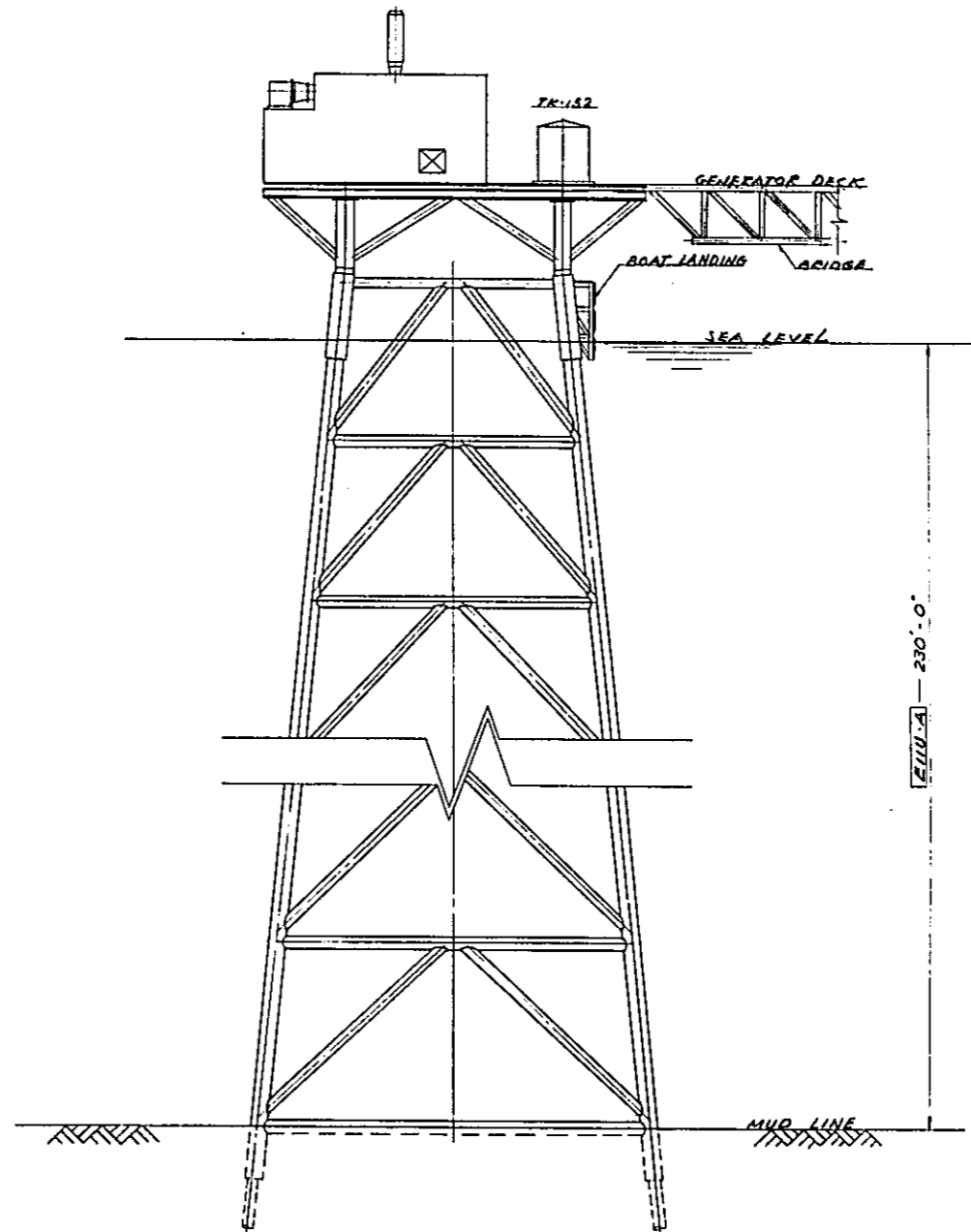
EQUIPMENT LIST	
ITEM NO.	DESCRIPTION
	GENERATOR
G-152A&B	GAS TURBINE GENERATOR
G-153	EMERGENCY GENERATOR
	TANK
TK-152	DIESEL STORAGE TANK



TOP PLAN



GENERATOR DECK PLAN

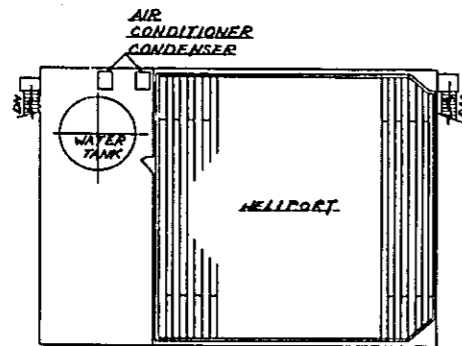


ELEVATION

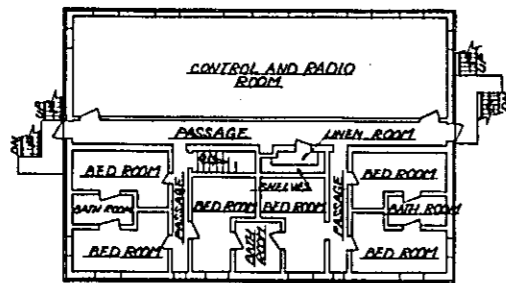
NOTE:
THIS FIGURE IS FOR EIUU-A.

**FOR BUDGET
PURPOSE ONLY**

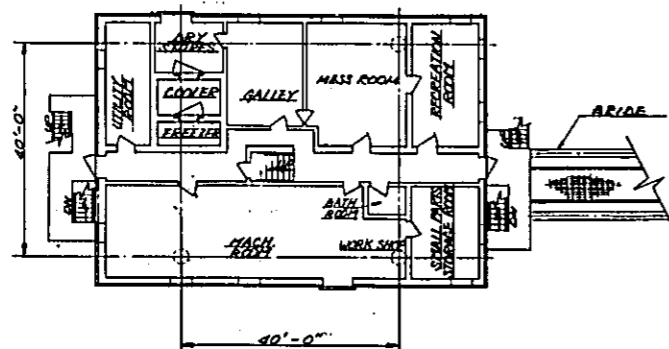
NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-30 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR 4-LEG UTILITY PLATFORM				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				



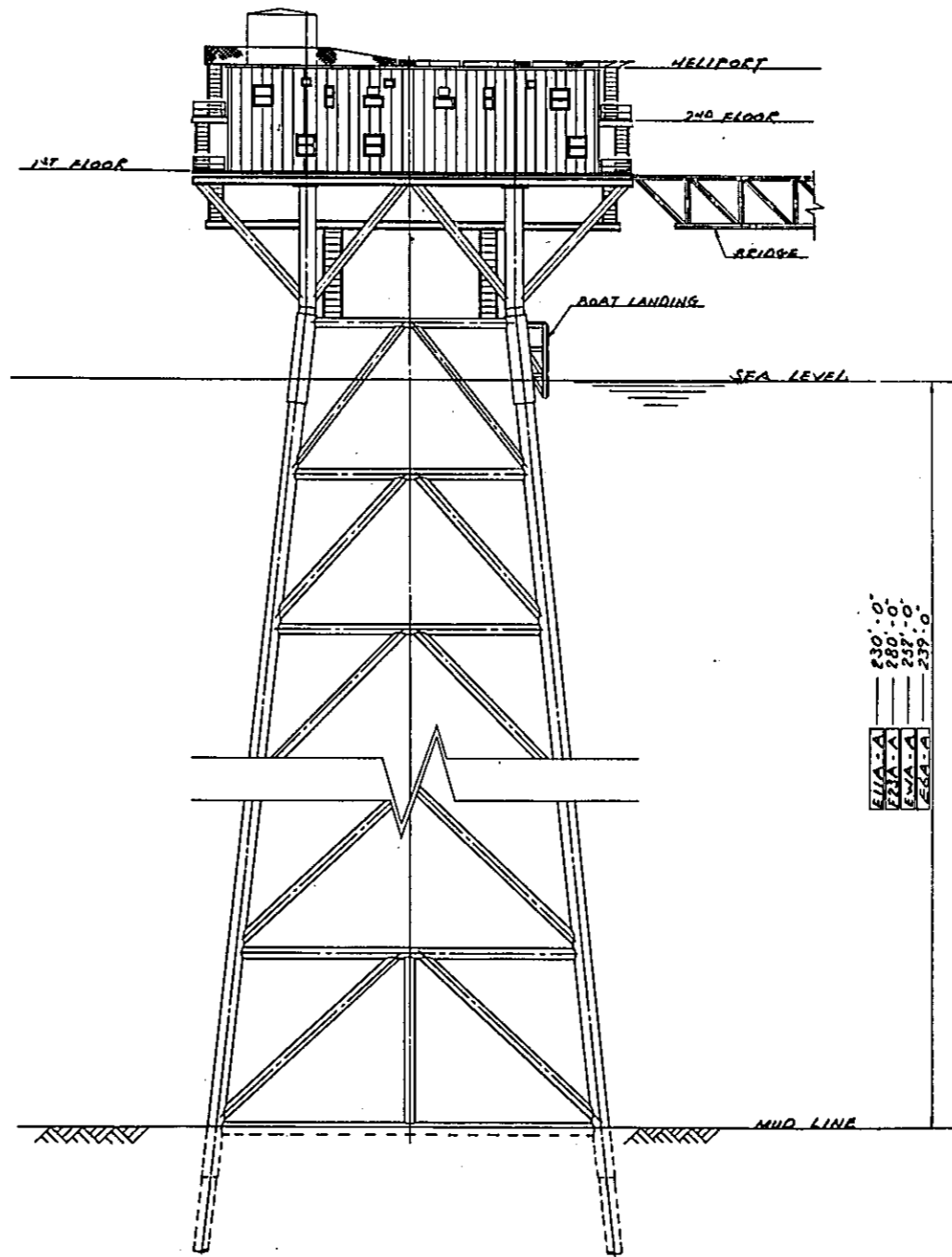
HELIPORT DECK PLAN.



2ND FLOOR PLAN.



1ST FLOOR PLAN.



ELEVATION

NOTE:
THIS FIGURE IS FOR F23A-A, E11A-A,
EWA-A AND E6A-A.

**FOR BUDGET
PURPOSE ONLY**

NO.	REVISIONS	DATE	DRAWN	CHIEF
MASTER PLAN STUDY FOR THE DEVELOPMENT OF PETROLEUM AND NATURAL GAS RESOURCES IN MALAYSIA FOR PETRONAS PETROLIUM NASIONAL BERHAD				
TITLE FIG. 30-5-31 (Vol. IV) TYPICAL PLAN AND ELEVATION FOR 4-LEG ACCOMMODATION PLATFORM				
DESIGN CHIEF		SCALE		
CHECKED BY		PROJECT NO.		
DESIGNED BY		DRAWING NO.		
DRAWN BY		DATE		
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO JAPAN				

Fig. 30-5-32. (Vol. IV)

LEGEND FOR FLOW DIAGRAMS

PIC	PRESSURE INDICATING CONTROLLER
PC	PRESSURE CONTROLLER
PS	PRESSURE SWITCH
FRC	FLOW RECORDING CONTROLLER
FM	FLOW METER
FR	FLOW RECORDER
FI	FLOW INDICATOR
LC	LEVEL CONTROLLER
LS	LEVEL SWITCH
PSV	PRESSURE SAFETY VALVE
RD	RUPTURE DISC
DV	DELUGE VALVE
SD	SHUTDOWN VALVE
XV	MISCELLANEOUS VALVE

NOTE: PI (PRESSURE INDICATOR) AND TI
(TEMPERATURE INDICATOR) ARE NOT
SHOWN ON THE FLOW DIAGRAMS FOR
SIMPLIFICATION.

Fig. 31-6-1
(Vol. IV)

DRILLING & COMPLETION COST
OF DEVELOPMENT WELL

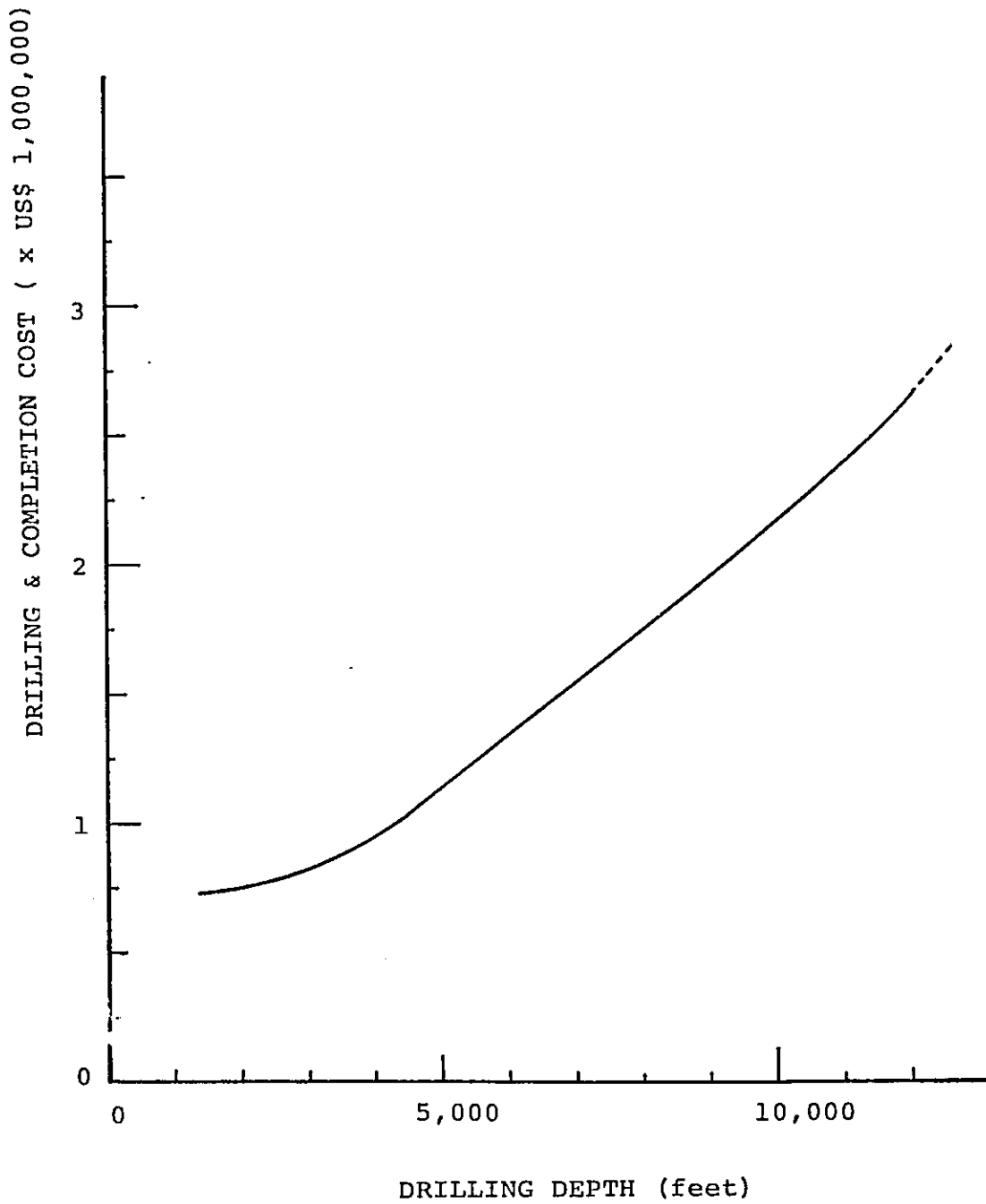


Fig. 31-6-2 (Vol. IV)

TENTATIVE ORGANIZATION
FOR FIELD OPERATION

(80 Persons Case)

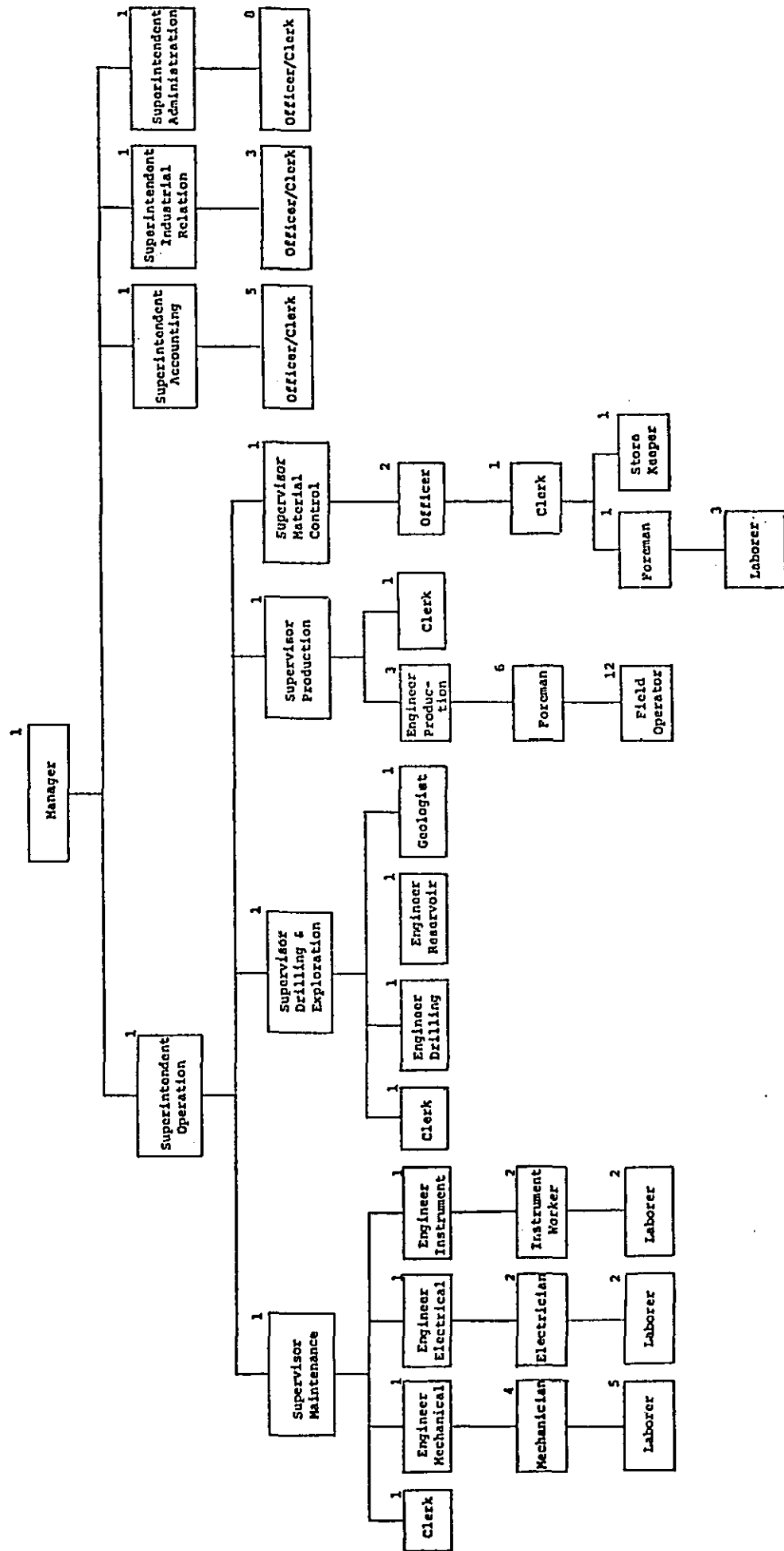


Fig. 31-6-3 (Vol. IV)

TENTATIVE ORGANIZATION
FOR FIELD OPERATION

(128 Persons Case)

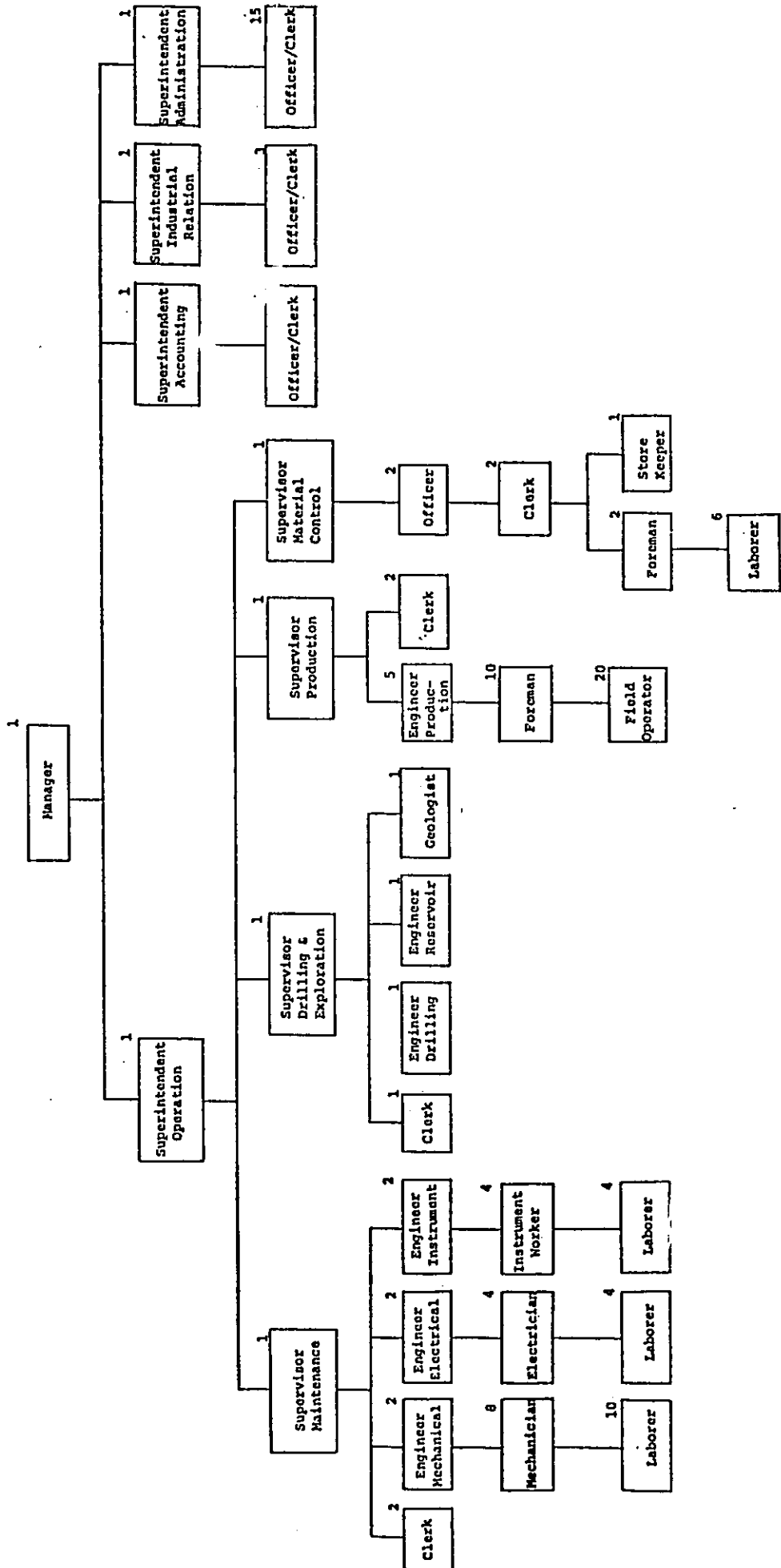


Fig. 31-6-4 (Vol. IV)

TENTATIVE ORGANIZATION
FOR FIELD OPERATION

(135 Persons Case)

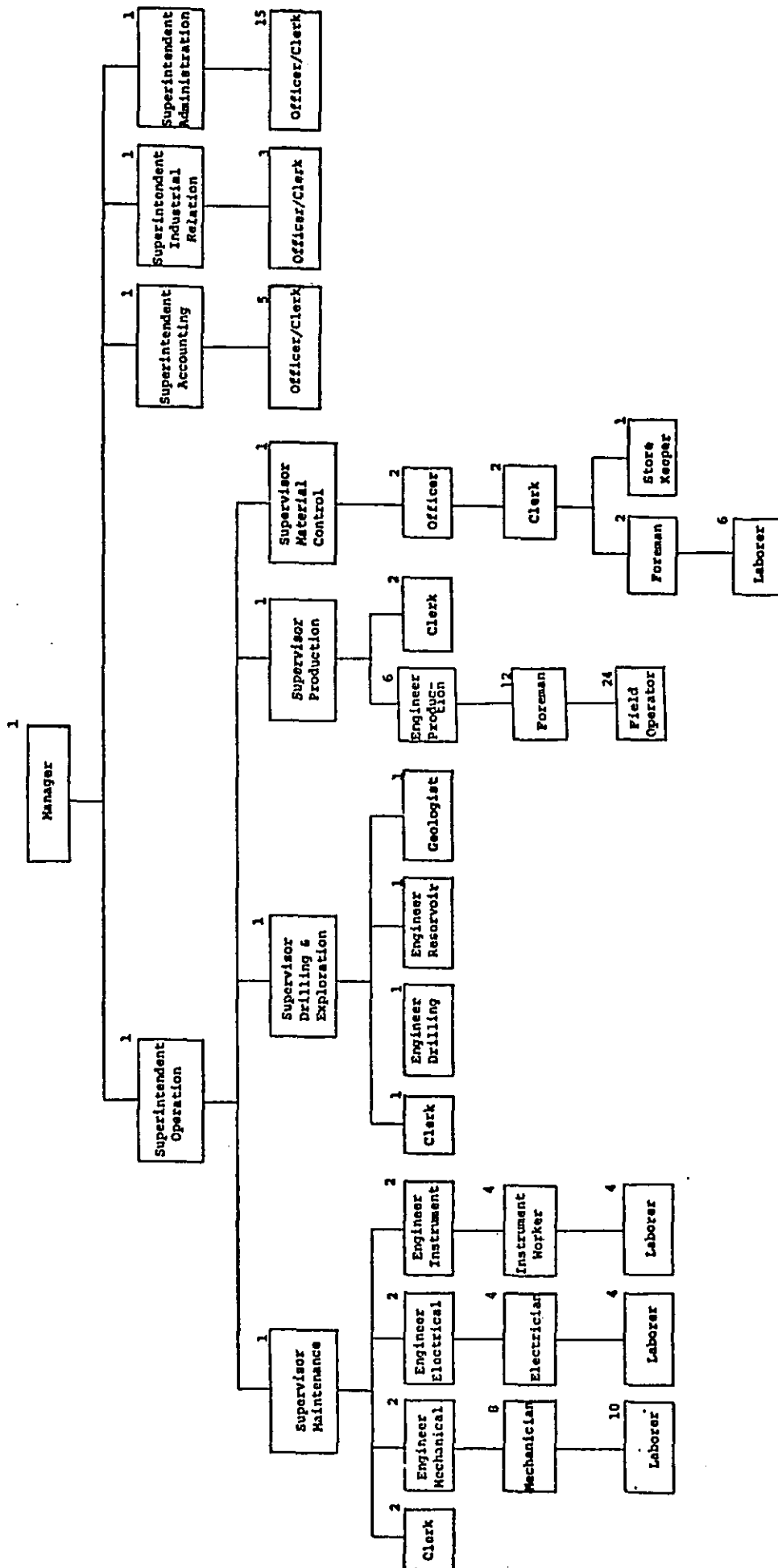


Fig. 31-6-5 (Vol. IV)

TENTATIVE ORGANIZATION

FOR FIELD OPERATION

(146 Persons Case)

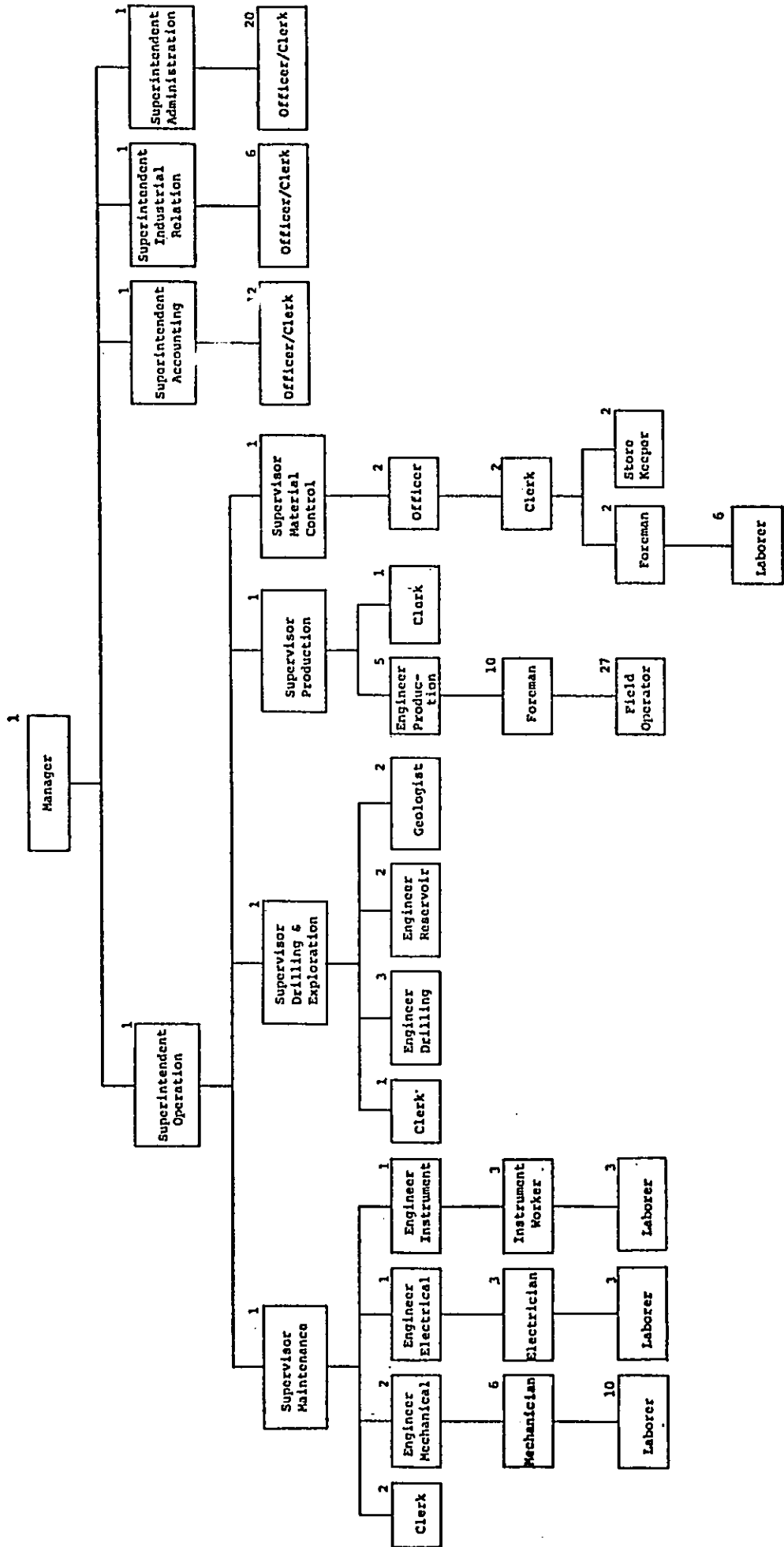
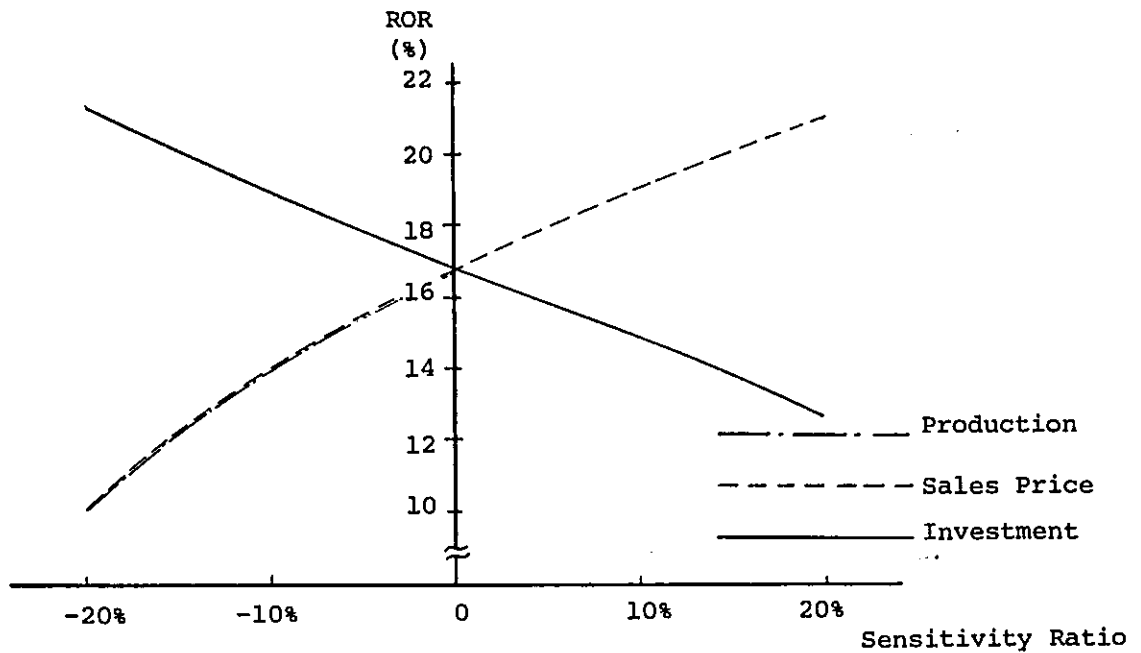


Fig. 31-6-8
(Vol. IV)

SENSITIVITY CURVE FOR SARAWAK AREA

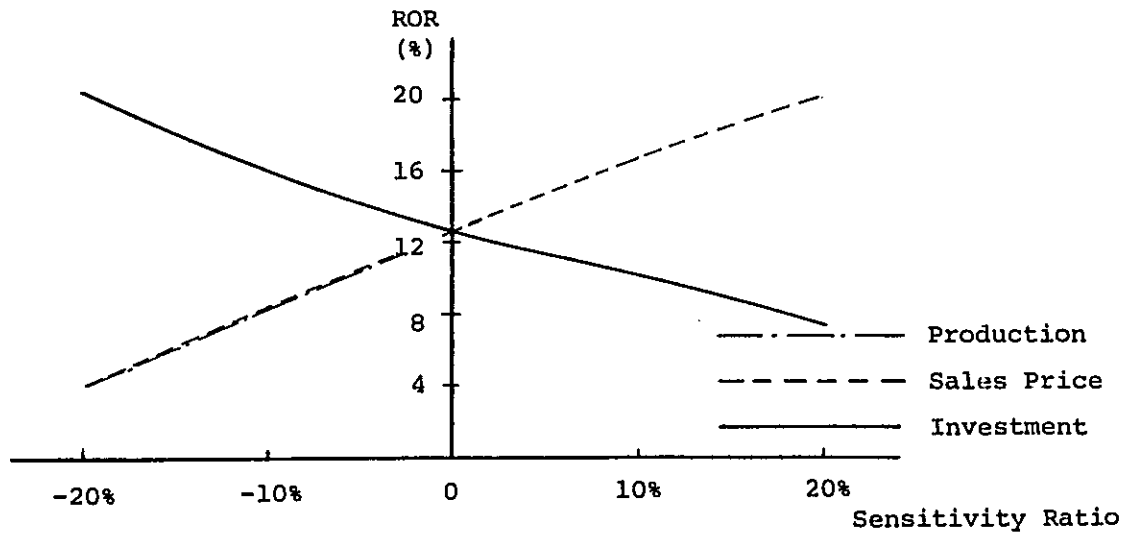
West Temana & E-6 Fields

Optimum Case: E-6, Onshore Terminal - CASE IIB



Betty & Bokor Fields

Optimum Case: Betty, Bakau Gathering System - CASE II



APPENDIX

APPENDIX

APPENDIX I

既存油田における

Shell地層名との対応

Correspondence of Zones to the Shell Nomenclature
for Producing Fields

W.Lutong Field		Baram A Field		Baram B Field		Baronia Field		Fairley-Baram Field		Tukau Field	
Zone	Shell	Zone	Shell	Zone	Shell	Zone	Shell	Zone	Shell	Zone	Shell
Top a ₁	Top A ₀	Top a ₀	Top K1	Top a ₀	Top L7	Top a ₁	Top RL ₃	Top a ₁	Top L ₁	Top a	Top C1
a ₂	C ₁	a ₁	M4	a ₁	N1	a ₂	RM ₂	a ₂	P ₁	b ₁	E6
a ₃	~ E ₂	a ₂	N2	a ₂	O4	a ₃	RN ₂	a ₃	P ₄	b ₂	F2
b ₁	F ₁	b	O1	b ₁	P1.1	b	RO	a ₄	P ₅	b ₃	~ F6
b ₂	I	c ₁	P1	b ₂	P3.1	c ₁	RP ₁	b ₁	Q ₅	c ₁	G5.5
c ₁	K	c ₂	P4	b ₃	P4.1	c ₂	~ RP ₂	b ₂	Q ₆	c ₂	H4
c ₂	N	d ₁	Q5	c ₁	P7	d ₁	-	b ₃	Q _{6.1}	d ₁	I1
c ₃	P ₁	d ₂	R1	c ₂	Q3	d ₂	RR ₂	c	~ R ₁	d ₂	I4
d ₁	Q	e ₁	S1	c ₃	Q5	d ₃	-	d	R ₅	d ₃	I7
d ₂	U ₁	e ₂	S4	c ₄	R1	d ₄	RS ₂			d ₄	J2
d ₃	V ₁	f ₁	S6	d ₁	S1.1	e	RT ₁			e ₁	~ L2
e ₁	W ₁	f ₂	S8	d ₂	S4	f ₁	RU ₂			e ₂	M1
e ₂	X ₁	g ₁	S11	e ₁	S6.1	f ₂	RV ₂			e ₃	M5
e ₃	Z _{1A}	g ₂	S13	e ₂	S8.1	g	RW ₁			e ₄	N1
		g ₃	S14	e ₃	S9.1					f ₁	N7
				f	S11.1					f ₂	O1
				g ₁	S13.1						
				g ₂	S15.1						

APPENDIX II

檢層解析結果

サラワク地区

Baronia Field

Rw の値は $0.09 \Omega \cdot m @ 150 F$ でこの付近の Field の中では低い方であり、水飽和率もやや高い程度であった。

頁岩含有率 20% 以下の点での平均コア孔隙率 20.6%、平均ログ孔隙率 20.3% であり孔隙率の値はよく一致している。

Fairly Baram

Rw の値は $0.22 \Omega \cdot m @ 70 F$ を使用した。水飽和率は 30~60% を示すが、かなり高い値である。一般に油層よりもガス層が低く水飽和率は示される。コアリングは 2 号井及び 3 号井で実施され、各コアについてコア分析が実施されている。頁岩含有率 10% 以下で連続して比較できる点をとると 2 号井ではコア分析による平均孔隙率 21.8%、ログ解析による平均孔隙率 21.7% となる。又 3 号井については、コア分析による平均孔隙率 25.6%、ログ解析による平均孔隙率は 22.5% となった。これらの値は対比が完全でないことを考慮すれば、よい一致を示していると言える。

West Lutong Field

Rw の値として $0.205 \Omega \cdot m @ 100 F$ を使用し、2' 毎にコンピューターを使用して孔隙率、水飽和率を算した。一般的に水飽和率が高い。孔隙率に関してコア分析の結果と比較すると少し低い傾向がある。Core の測定深度が確認できたサンプルのうち頁岩含有量 10% 以下の点で比較するとコア分析の平均 24.4% に対し計算値の平均 19.6% であるからあまりよい一致を示しているとはいえない。

これはコア分析の際サンプルの洗浄等で頁岩分が流されてしまいコア分析の結果がよく出ているためと思われる。

Baram Field

Rwの値としてBaram A地域には $0.135 \Omega\text{-}m @ 150 F$ を、Baram B地域には $0.13 \Omega\text{-}m @ 170 F$ を使用して2'毎の孔隙率、水飽和率の算出を行った。一般に水飽和率が高い。コア分析は8号井で実施された。しかしコアリング深度がログによって解析された区間外であったため、解析結果の比較は実施されなかった。

Bakau Field

Rwの値は $0.11 \Omega m @ 206 F$ を使用した。水飽和率はやや高い。コア分析データがないのでログ解析の結果との比較はできないが、孔隙率の大きさは許容範囲にある。

Tukau Field

Rwの値は $0.12 \Omega\text{-}m @ 140 F$ でこの付近としては低い方であった。水飽和率は30%~50%程度である。頁岩含有率20%以下の点でCore孔隙率24.9%、平均ログ孔隙率22.4%であった。

Betty

1号井並びに3号井においてガス層又は油層が存在する。従って解析は1、3号井について行われた。Rwの値は $0.11 \Omega m @ 180 F$ を使用した。コア分析のデータがないためコアとの比較はしていないが水飽和率、孔隙率ともに他のフィールドと較べても適当である。

Bokor

Rwの値は $0.16 \Omega m @ 140 F$ を使用した。コア分析はなされていない。

従ってログの解析結果とコアとの比較はできないが一般的に水飽和率がやや高いが周囲のフィールドと比較して孔隙率とともに適当である。

Temana

解析された坑井は一号井を除く2～10号井までの9坑井である。1号井は電気検層の結果がおもわしくないことと対象となる深度になされた孔隙率測定の見層が、Casing Collar Logとしてなされた中性子検層だけしかなかったために除いた。

R_wの値は0.15Ωm@15.2Fを用いた。水飽和率は第9号井を除いて概して高くほとんど50%以上を示した。コア分析との比較はデータが十分でなく実施されなかった。

Beryl Field

Beryl fieldの各坑井は十分な油、又はガス層を切っていないため、解析は行わなかった。

Siwa Field

炭火水素含有層を持つ4号井だけ解析された。R_wの値は0.4Ωm@120Fを使用した。又、 $F=0.62/\phi^{2.15}$ の関係式が使用された。コア分析はなされていない。

Central Luconia Field

当地域でコア分析がなされてm、aの決定できたフィールドはE8及びE11フィールドであった。E8フィールドについては $F=1.04/\phi^{1.84}$ 、E11フィールドについては $F=1/\phi^2$ という結果が得られた。当地域の主たる岩相が石灰質苦灰岩であることを考慮してフォーメーションファクター(F)と孔隙率(φ)の関係は上記のどちらかを使用した。

R_wの値は Sarawak 地域の他のフィールドとほとんど変わらない。これらの値を表にまとめて示しておく。

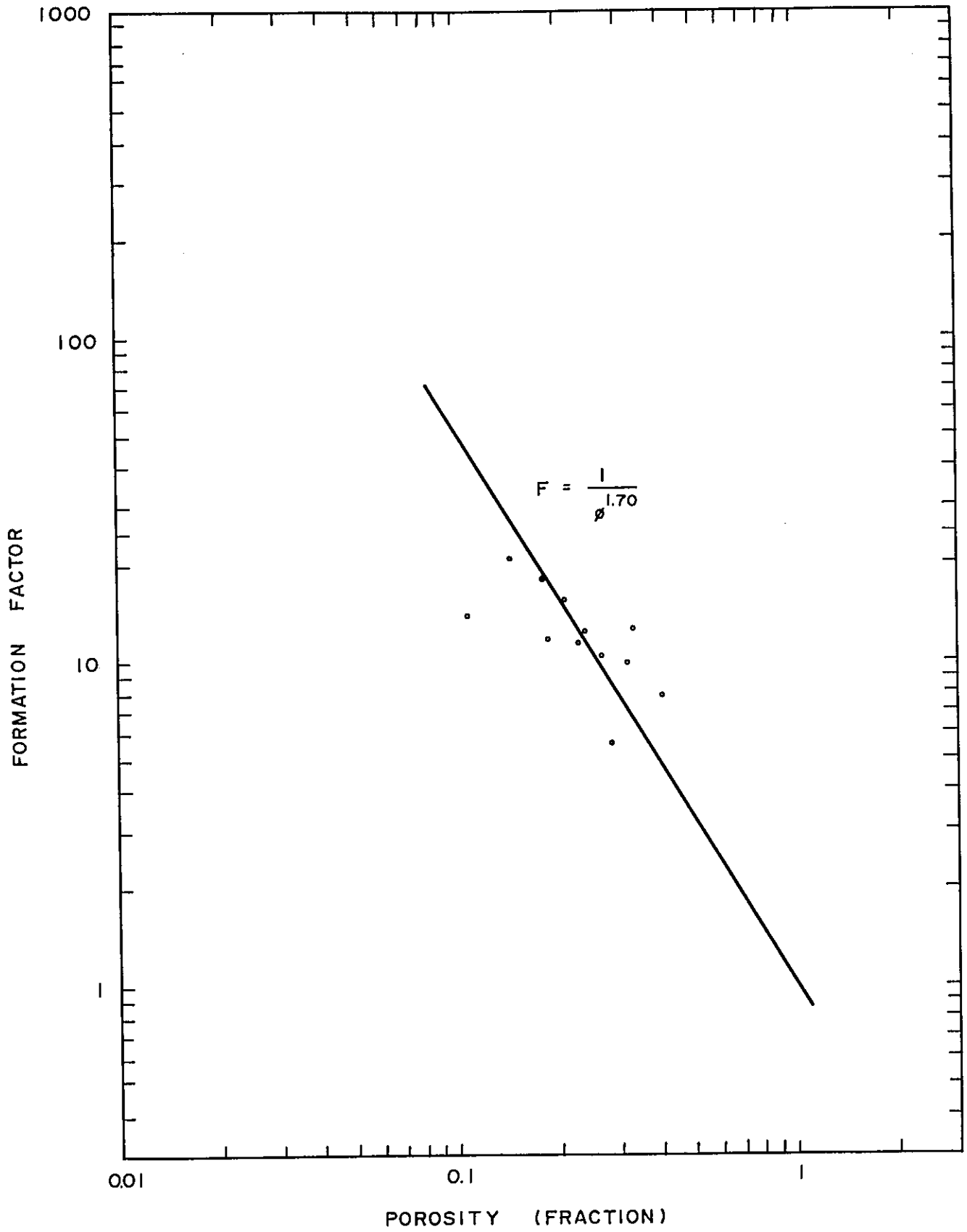
各フィールドとも油・ガス層に関して水飽和率は10～20%内外で他の隣接する他の砂岩・泥岩の互層を主とするフィールドよりもずっと低い値を与えている。

E8-2、E11-1、F6-1、F23-1、のコア分析の結果から Porosity cut off Limit は Total flow capacity の99%以上に対応する孔隙率である10%と決定された。Vsh Cut off はログによる Porosity と Shale Contents の比較から60%とした。Water saturation cut off は60%とした。

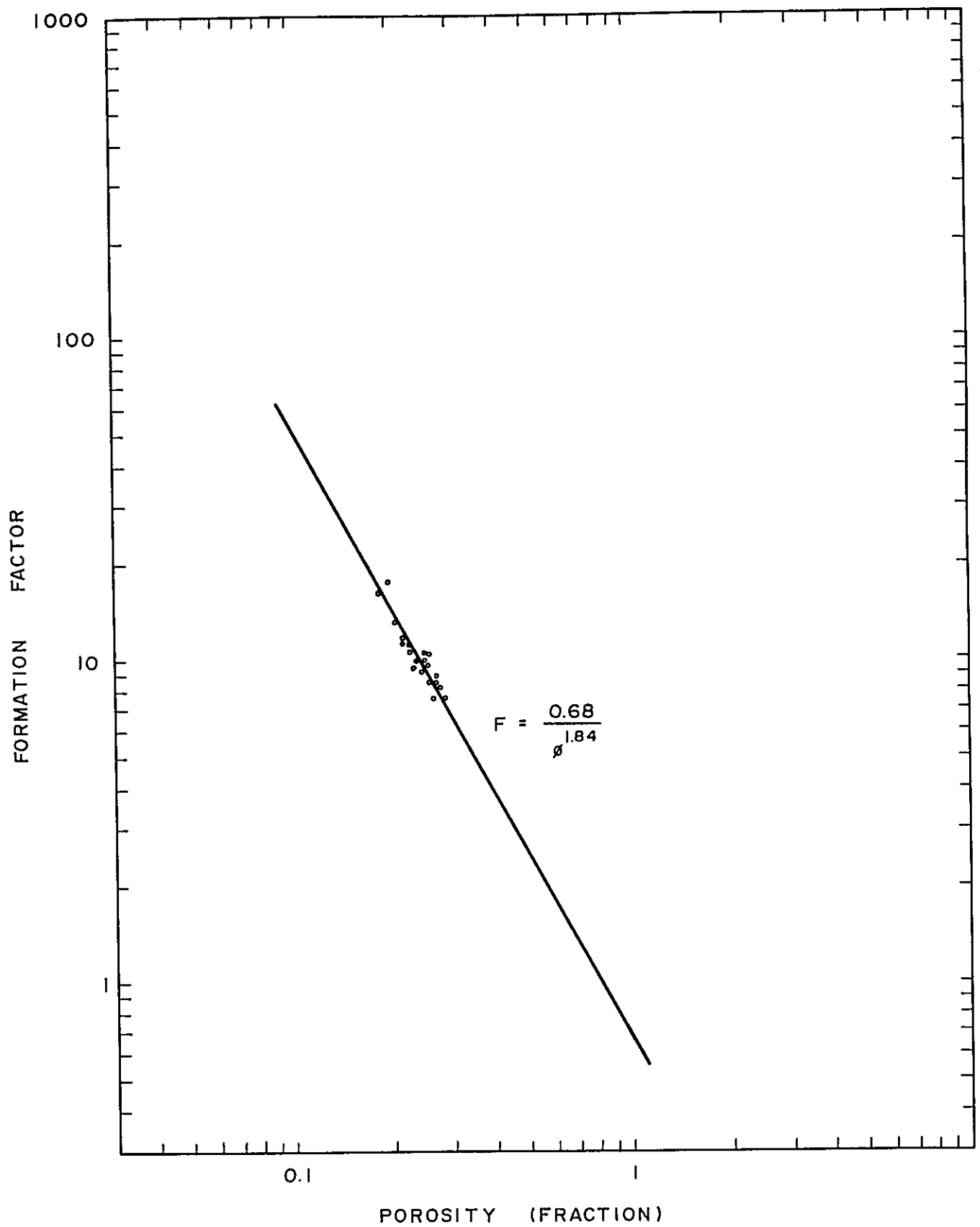
IMPORTANT PARAMETER USED FOR LOG-ANALYSIS

- SABAH AND SARAWAK -

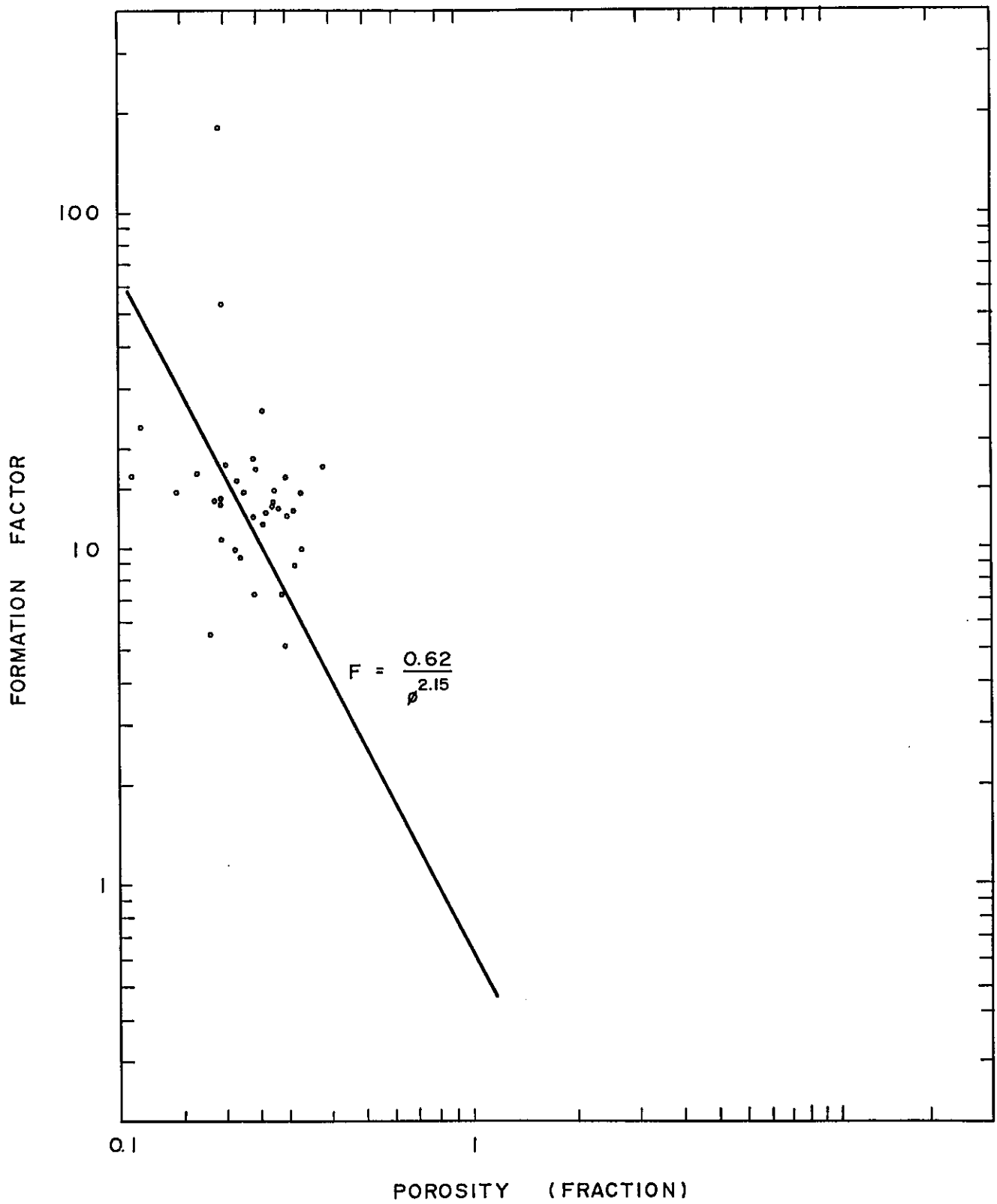
FIELD	CEMENTATION FACTOR (m)	ARCHIE FORMULA'S CONSTANT (a)	SATURATION EXPONENT (n)	WATER RESISTIVITY (Ω -M @ F.T.)
TEMANA	2	1	2	0.15 @ 152°F
SOUTH FURIOUS	1.69	1	2	0.22 @ 155°F
BETTY	2	1	2	0.11 @ 180°F
BOKOR	2.15	0.62	2	0.16 @ 140°F
ERB WEST	2.15	0.62	2	0.13 @ 145°F
ERB SOUTH	2.15	0.62	2	0.3 @ 120°F
ST. JOSEPH	2.15	0.62	2	0.25 @ 150°F
WEST EMERALD	2.15	0.62	2	0.21 @ 135°F
BERYL	1.87	0.7	2	
SIWA	2.15	0.62	2	0.4 @ 120°F
CENTRAL LUCONIA				
B12	1.84	1.04	1.84	0.096@ 240°F
E6	1.84	1.04	1.84	0.23 @ 70°F
E8	1.84	1.04	1.84	0.102@ 148°F
E11	1.84	1.04	1.84	0.096@ 165°F
F6	1.84	1.04	1.84	0.096@ 152°F
F9	2	1	2	0.208@ 170°F
F13	1.84	1.04	0.84	0.25 @ 184°F
F14	1.84	1.04	1.84	0.124@ 148°F
F22	1.84	1.04	1.84	0.2 @ 170°F
F23	1.84	1.04	1.84	0.16 @ 204°F
K4	2	1	2	0.102@ 175°F
M1	1.84	1.04	1.84	0.11 @ 162°F
M3	1.84	1.04	0.84	0.06 @ 203°F
M5	1.84	1.04	1.84	0.06 @ 206°F
BARAM A	1.87	0.7	2	0.135@ 150°F
BARAM B	1.87	0.7	2	0.13 @ 170°F
BAKAU	2.15	0.62	2	0.11 @ 206°F
BARONIA	1.69	1	2.0	0.09 @ 150°F
RAIRLY BARAM	2.15	1	1.49	0.22 @ 70°F
SAMMARANG	1.8	1	1.8	0.111@ 142°F
TEMBUNGO	1.93	1.14	1.93	0.14 @ 150°F
TUKAU	2.15	0.62	2	0.12 @ 140°F
WEST LUTONG	1.84	0.68	2	0.205@ 100°F



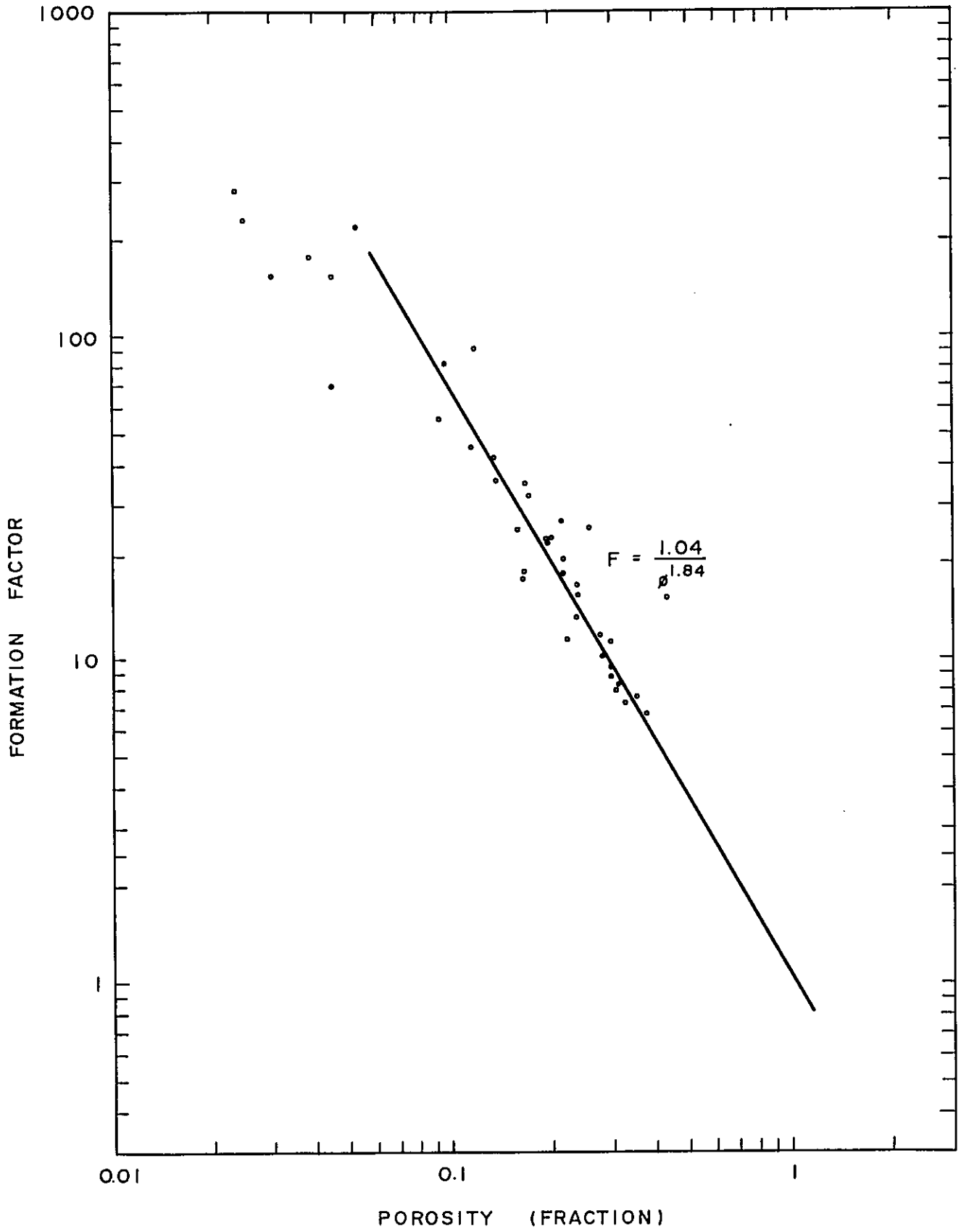
FORMATION FACTOR VS POROSITY PLOT
FAIRLY BARAM 2



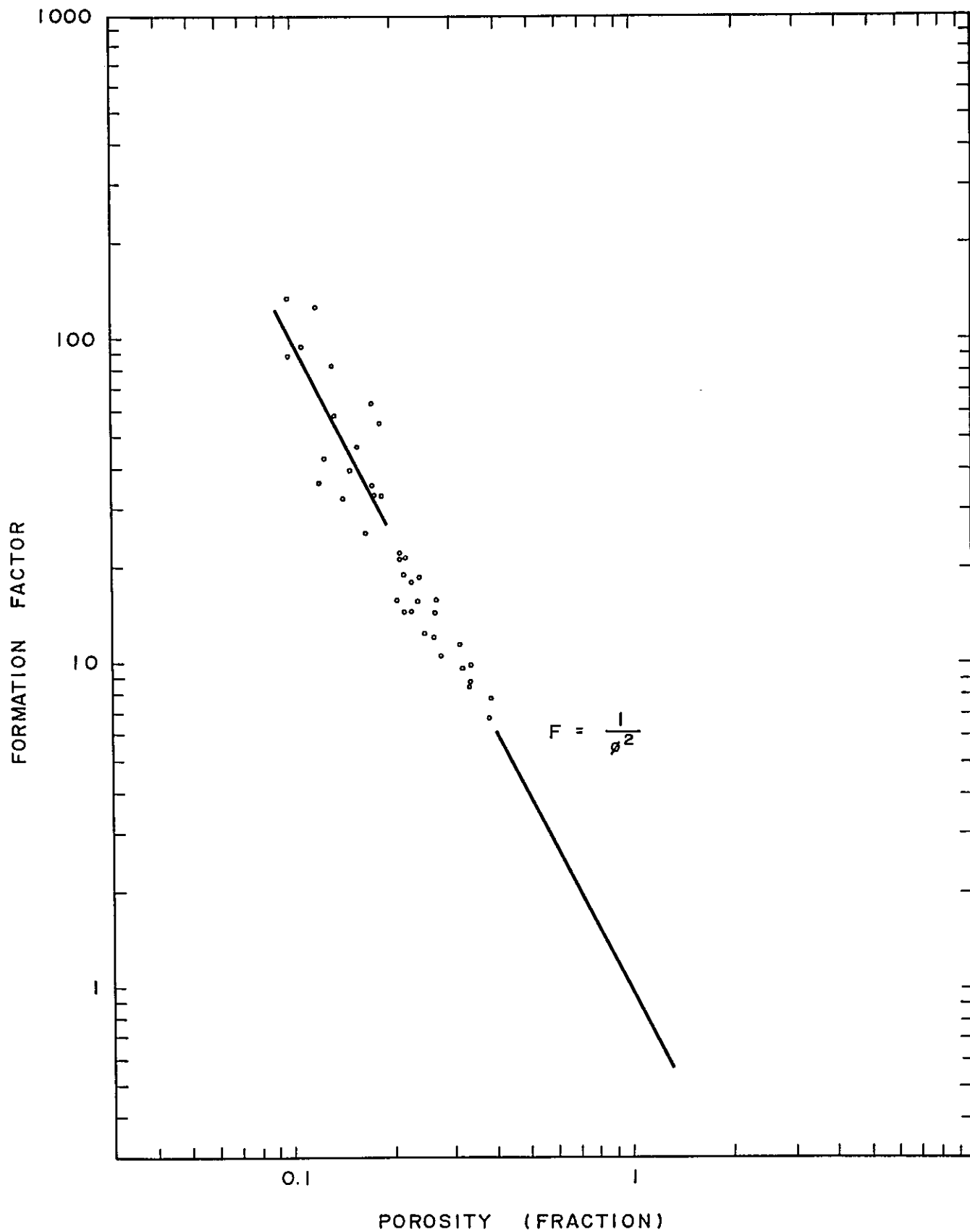
FORMATION FACTOR VS POROSITY PLOT
WEST LUTONG 4



FORMATION FACTOR VS POROSITY PLOT
TUKAU 10

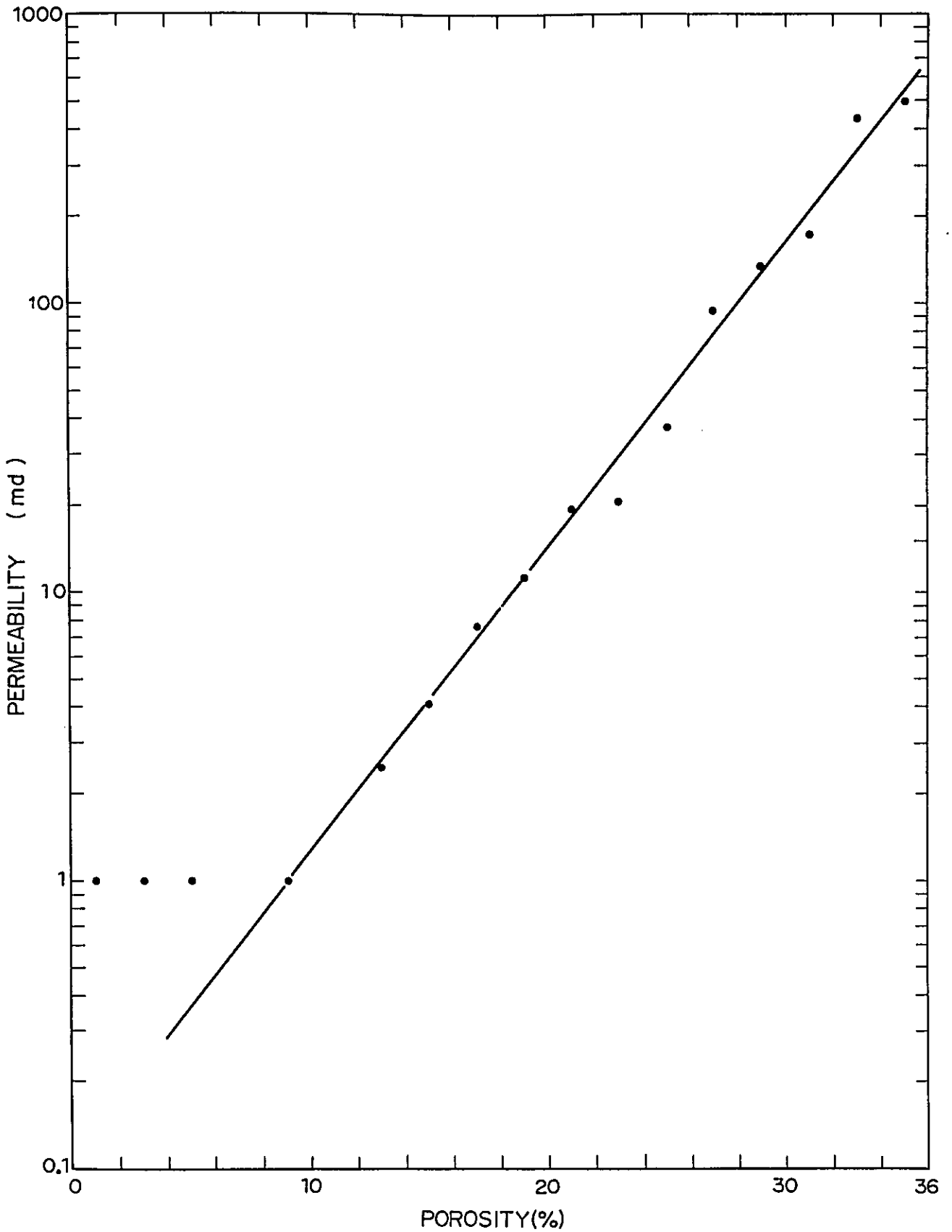


FORMATION FACTOR VS POROSITY PLOT
CENTRAL LUCONIA E8-2



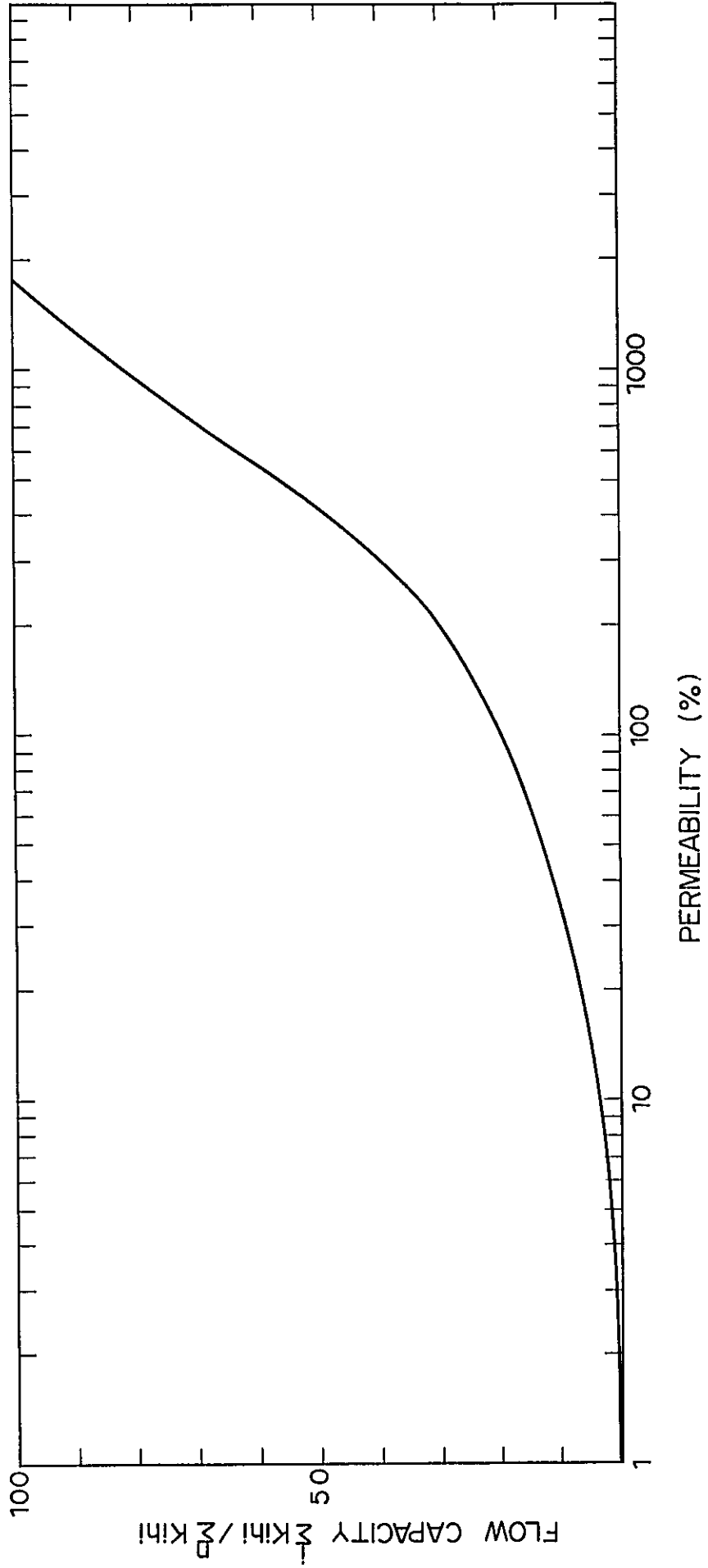
FORMATION FACTOR VS POROSITY PLOT
CENTRAL LUCONIA E II - 2

POROSITY vs PERMEABILITY CORRELATION
E11 - 1



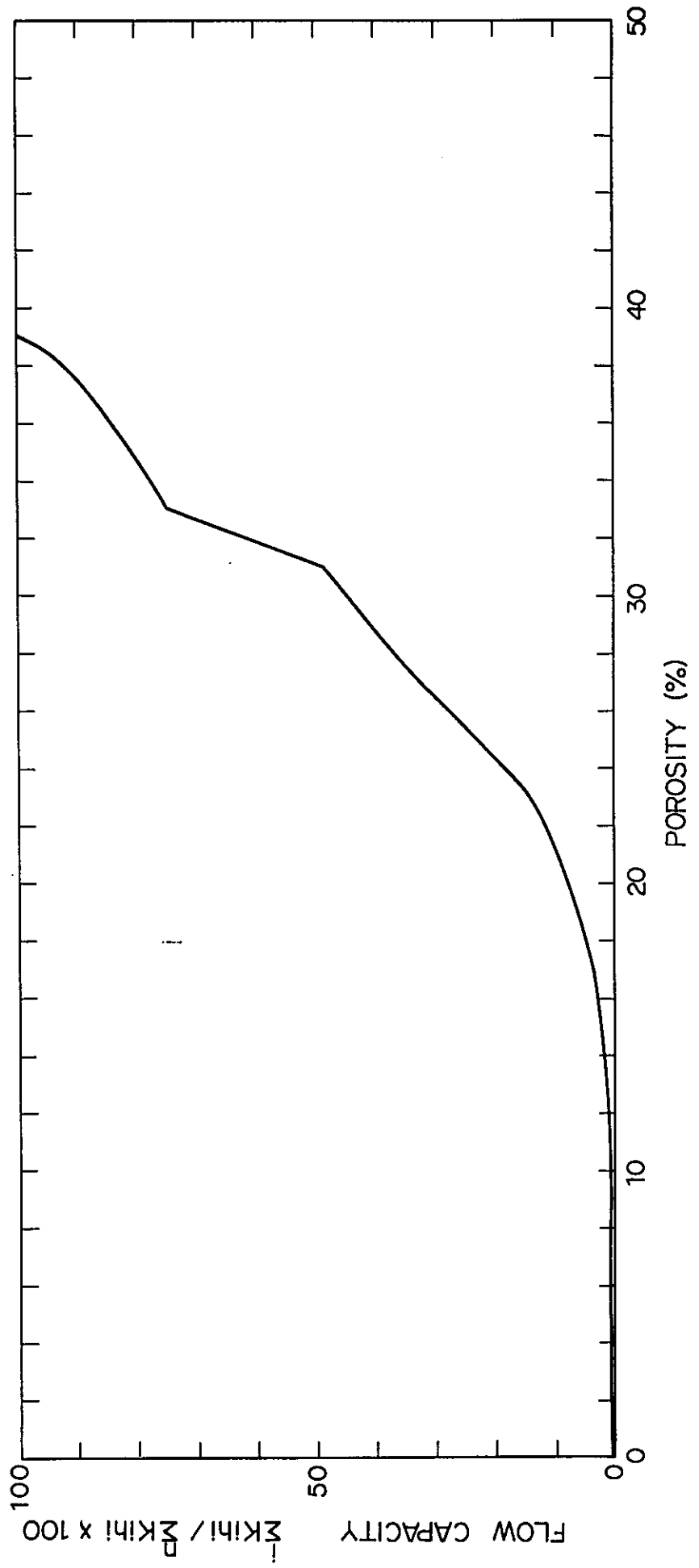
PERMEABILITY DISTRIBUTION

E11 - 1



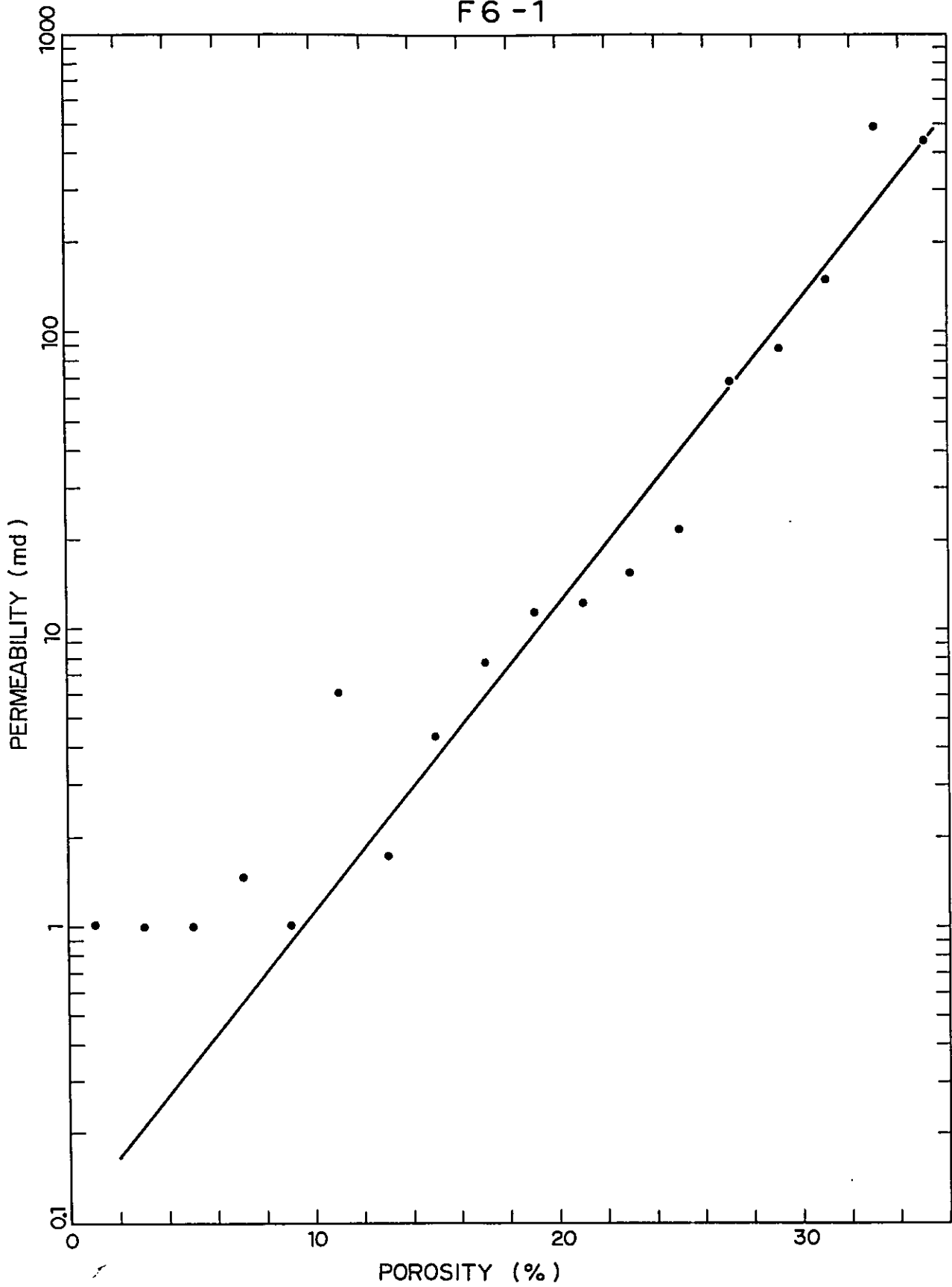
POROSITY vs PERMEABILITY DISTRIBUTION

E11 - 1



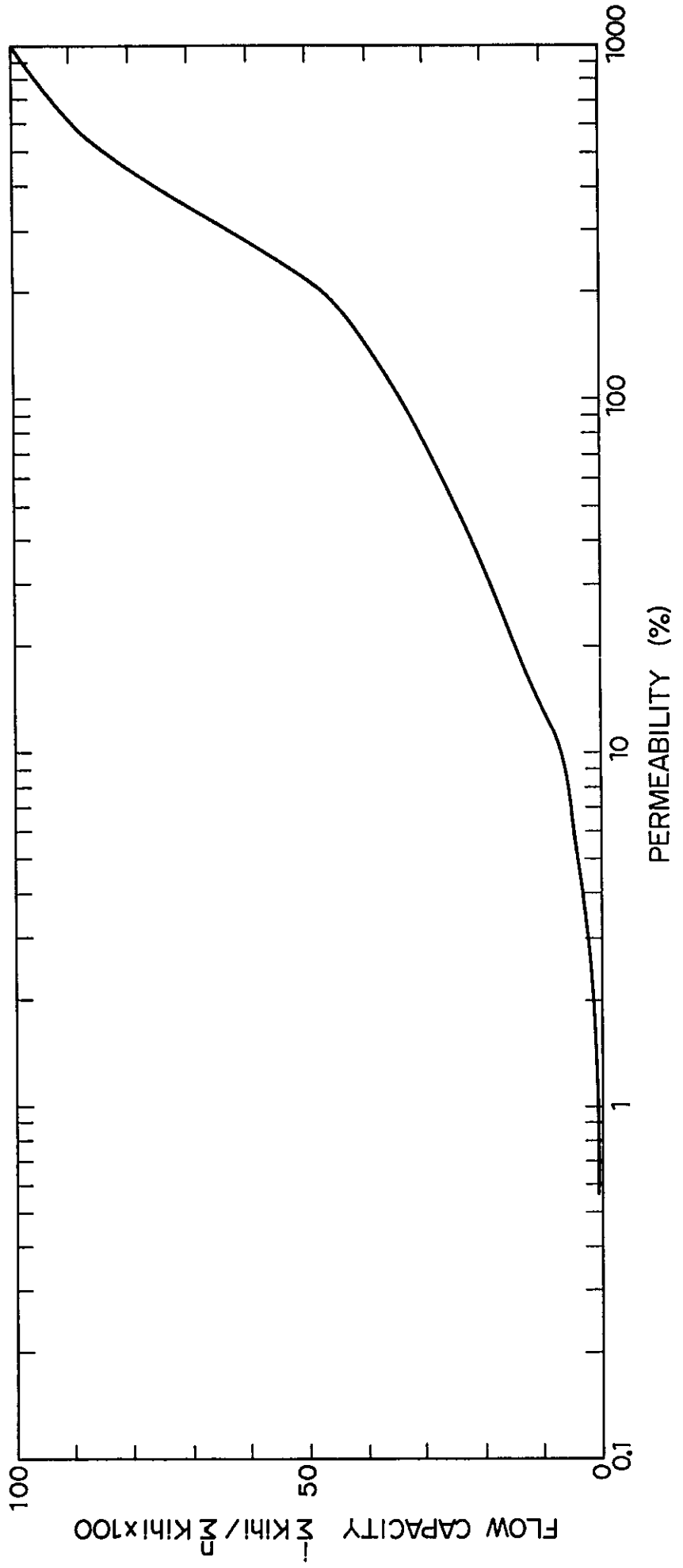
POROSITY vs PERMEABILITY CORRELATION

F 6 - 1



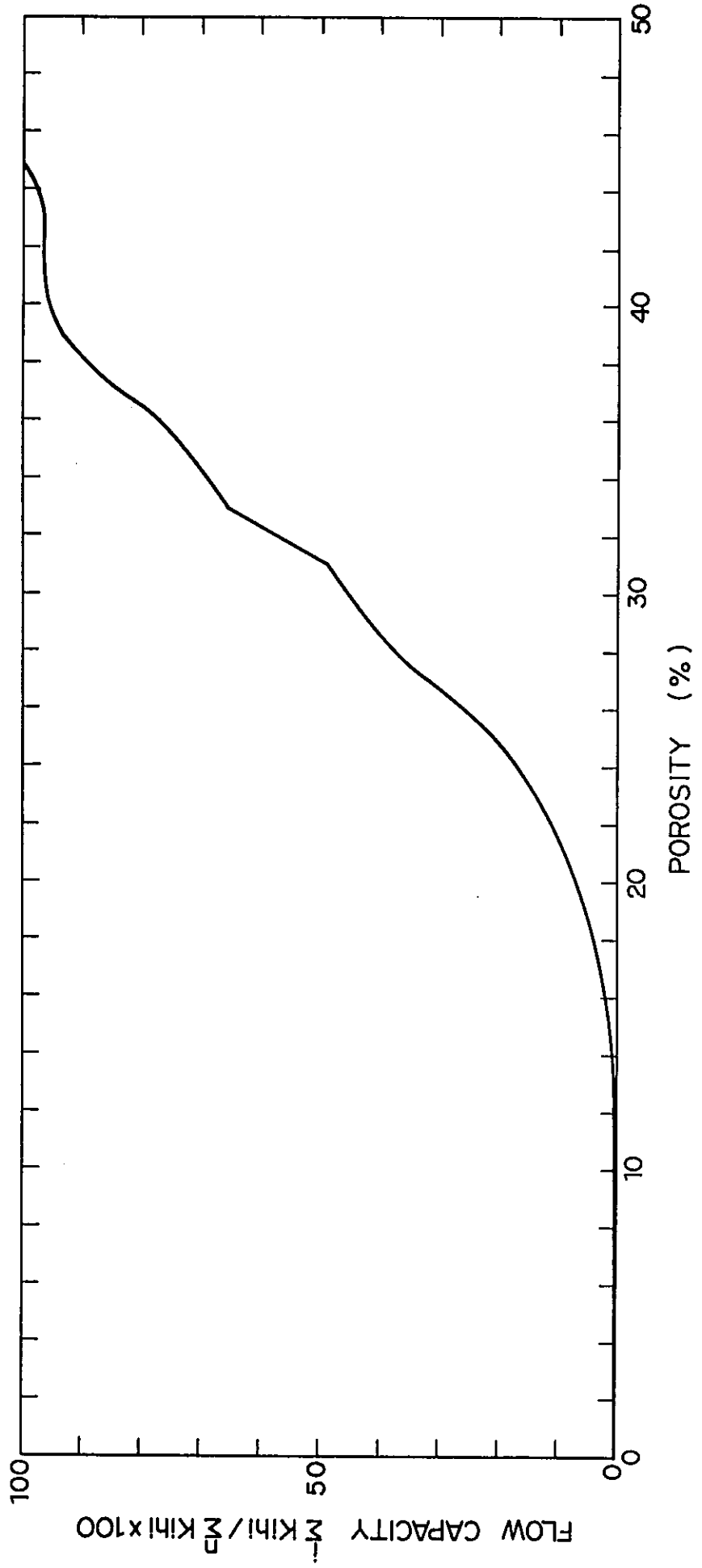
PERMEABILITY DISTRIBUTION

F 6 - 1

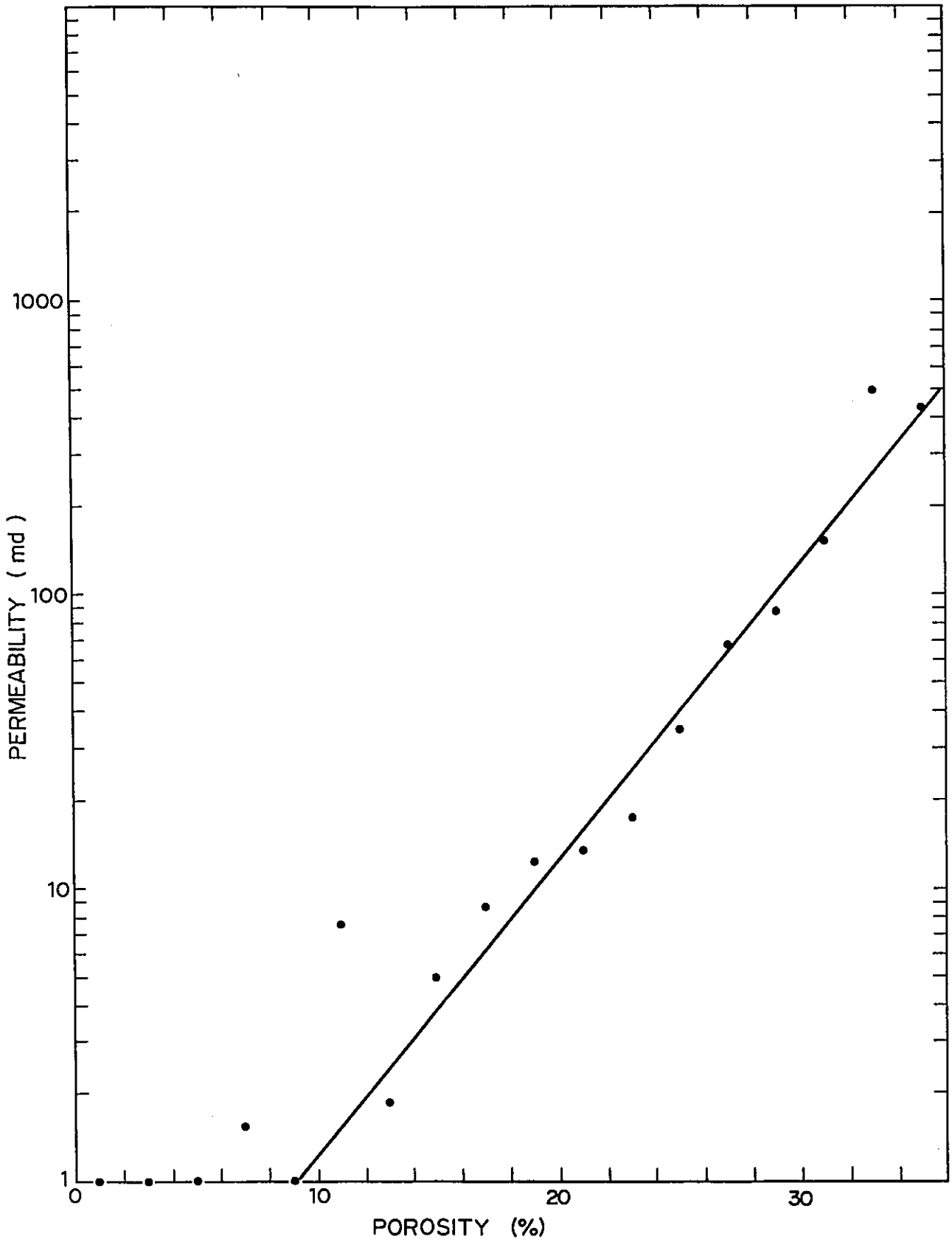


POROSITY vs PERMEABILITY DISTRIBUTION

F6 - 1

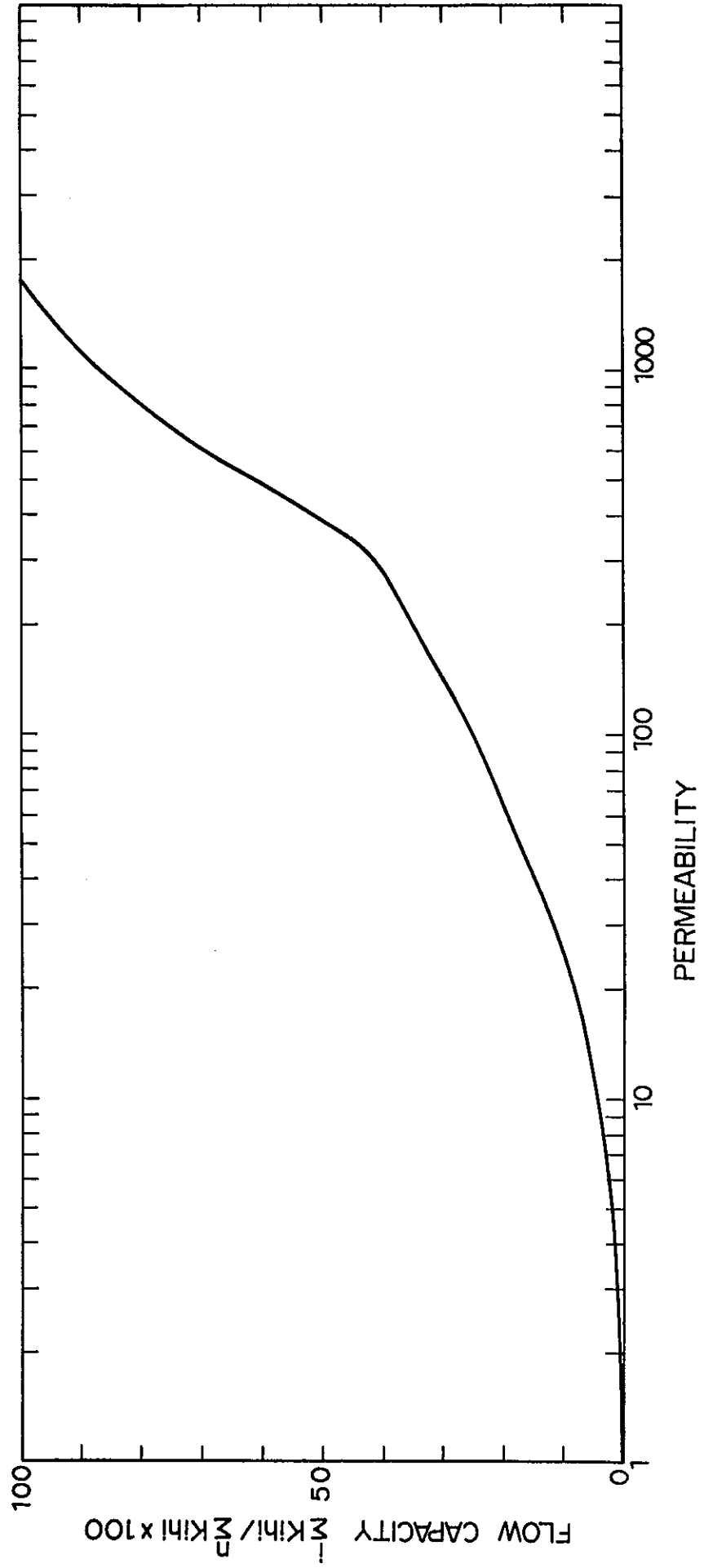


POROSITY vs PERMEABILITY CORRELATION
F8 - 2



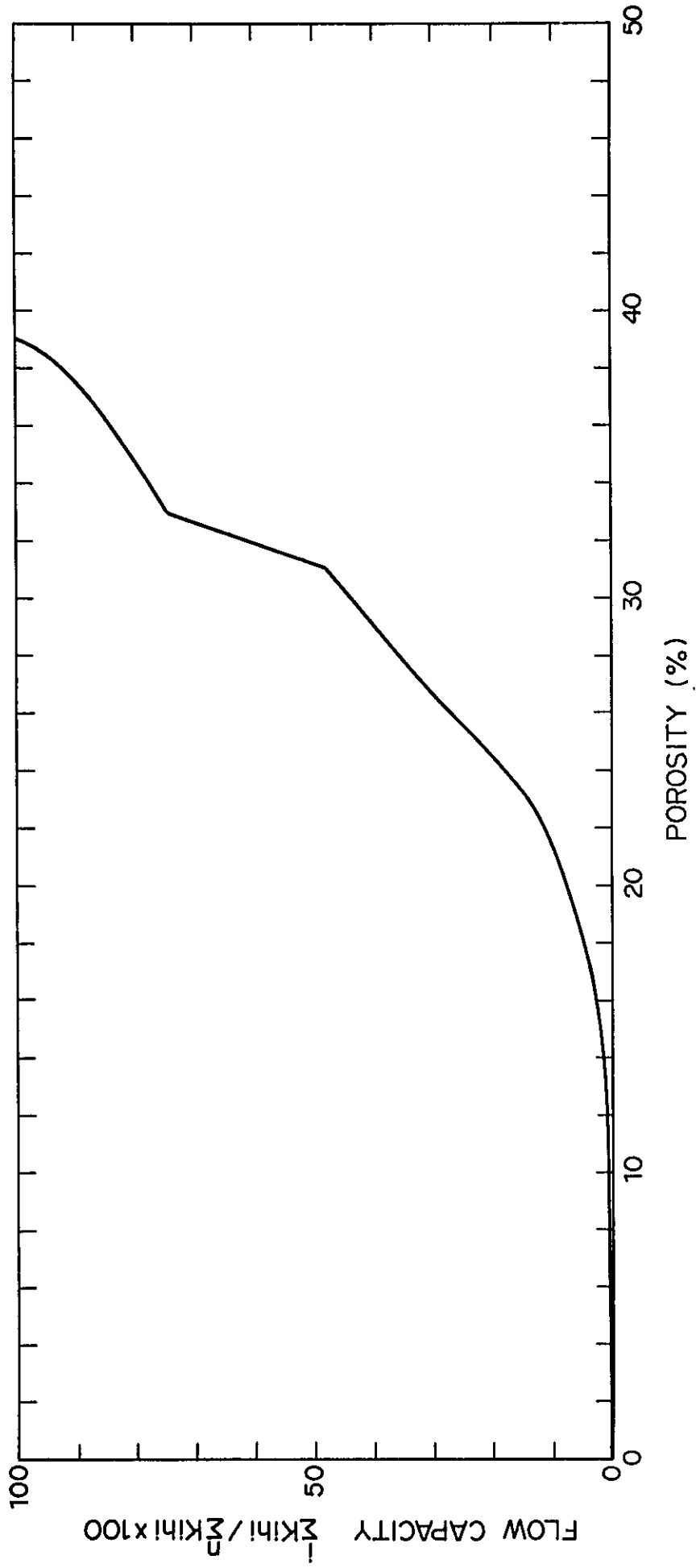
PERMEABILITY DISTRIBUTION

F8 - 2

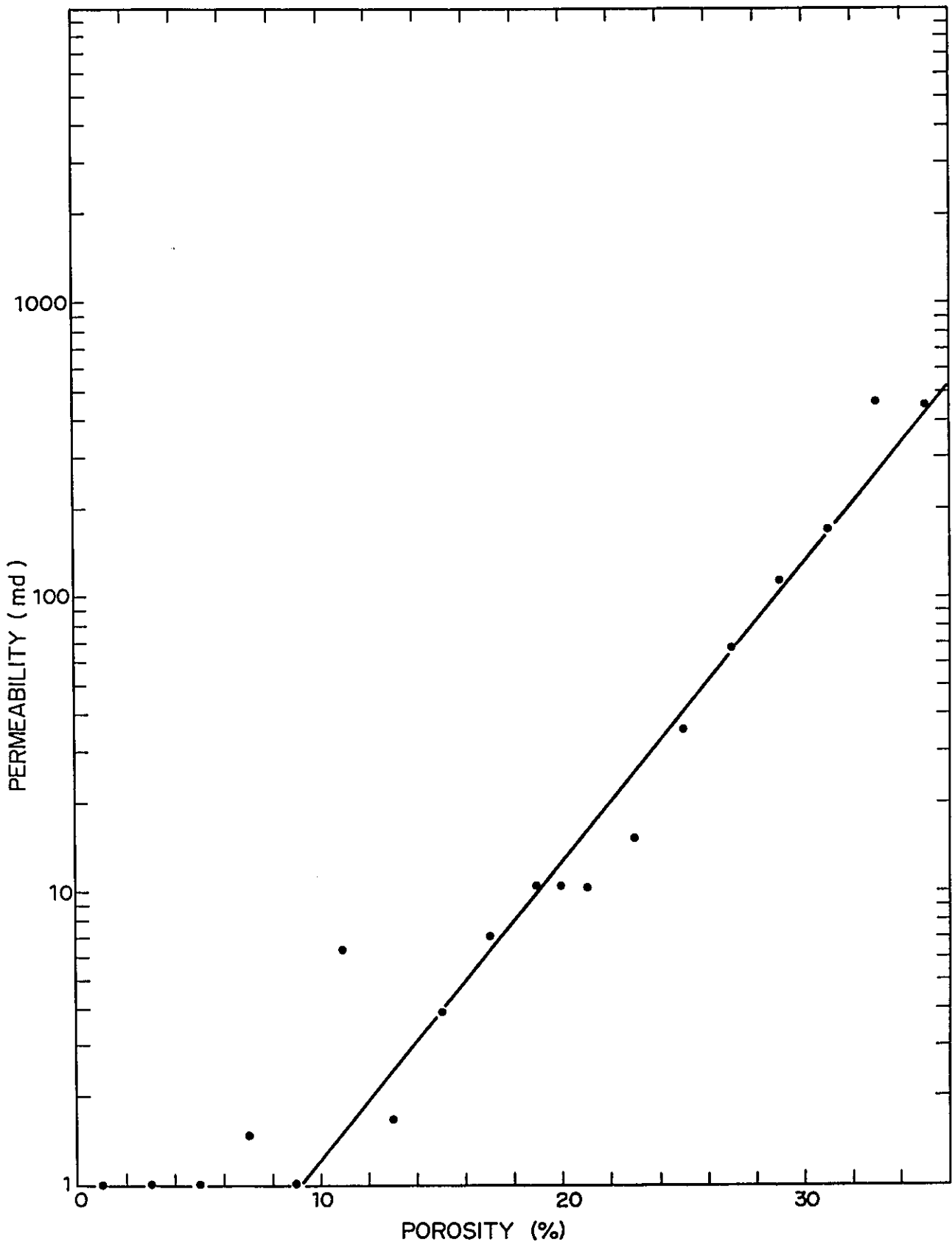


POROSITY vs PERMEABILITY DISTRIBUTION

E 8 - 2

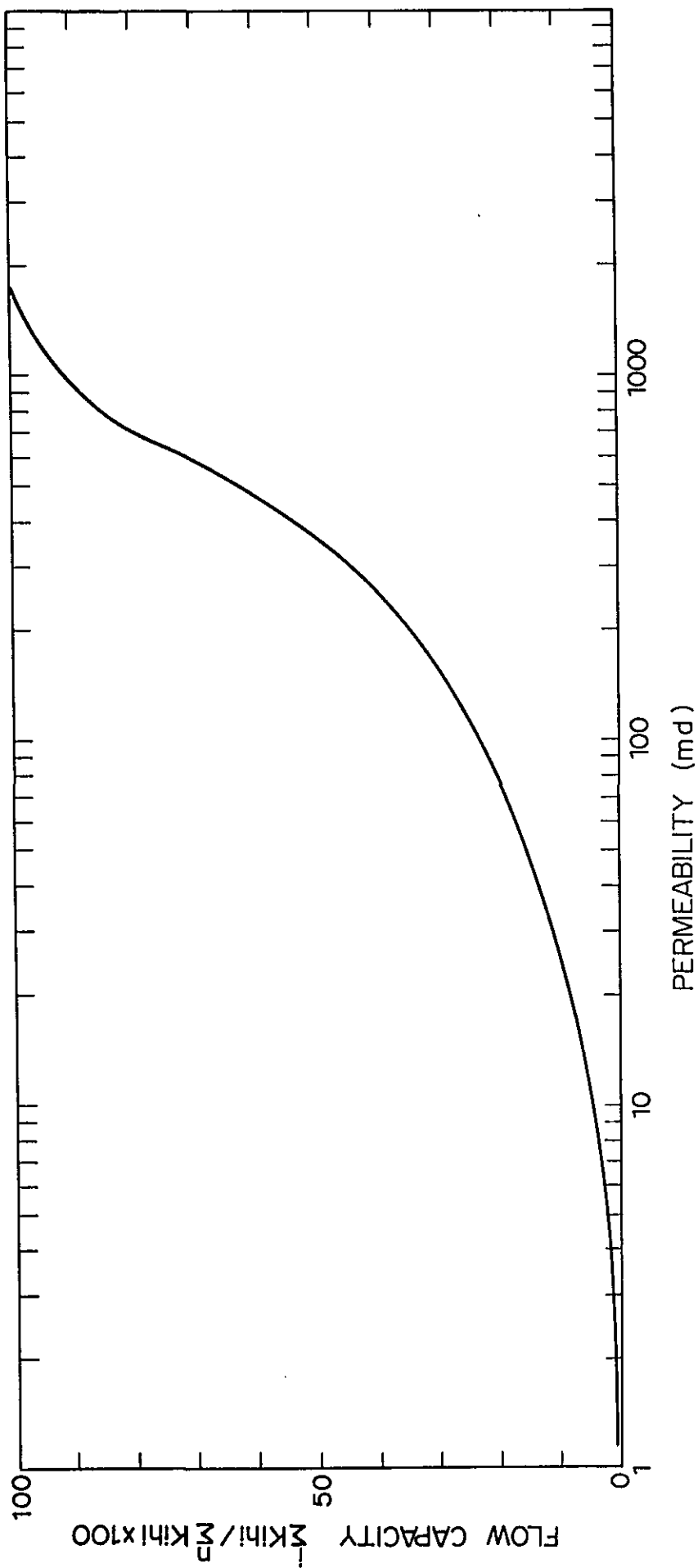


POROSITY vs PERMEABILITY CORRELATION
F23-1



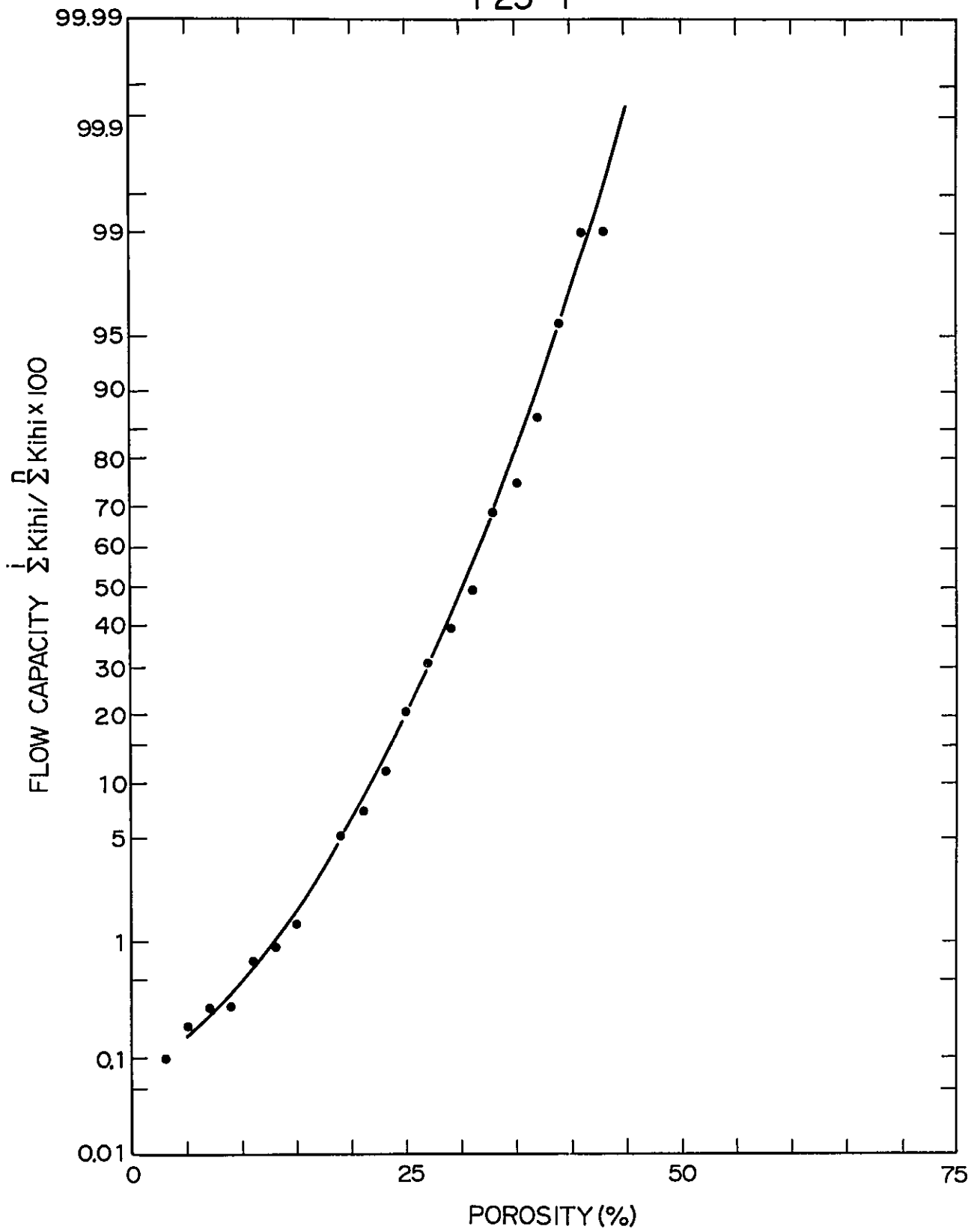
PERMEABILITY DISTRIBUTION

F23-1



POROSITY vs PERMEABILITY DISTRIBUTION

F23-1



WELL NAME : BARONIA 01

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL		NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)				
7044.0	7058.0	10	19.3	45.6	
7118.0	7140.0	22	22.6	22.5	
7158.0	7170.0	6	19.4	21.8	
7232.0	7266.0	36	22.9	21.0	
7266.0	7312.0	46	27.3	26.0	
7456.0	7484.0	30	23.6	37.1	
7490.0	7496.0	8	27.0	37.5	
7746.0	7816.0	52	23.6	38.4	
7840.0	7896.0	36	17.6	37.7	
7904.0	7964.0	58	14.5	47.8	
8044.0	8056.0				
8060.0	8162.0				

WELL NAME : BARONIA 04

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4610.0	-	4632.0			GAS
5334.0	-	5380.0	21.2	35.3	GAS
5478.0	-	5498.0	18.2	55.0	GAS
5500.0	-	5534.0	24.8	24.7	GAS
5538.0	-	5580.0	25.7	36.2	GAS
5590.0	-	5602.0	23.3	43.6	GAS
5606.0	-	5628.0	26.2	42.3	GAS GOC 5628
5628.0	-	5650.0	23.9	54.3	OIL
6384.0	-	6408.0	27.1	32.5	GAS
6485.0	-	6525.0	18.8	51.4	OIL OWC 6525
6925.0	-	6944.0	17.1	47.5	GAS
6964.0	-	6982.0	20.7	26.1	GAS
7022.0	-	7102.0	24.1	27.4	GAS
7114.0	-	7146.0	14.7	47.3	GAS
7156.0	-	7240.0	22.6	31.4	GAS GOC 7240
7240.0	-	7250.0	20.6	44.0	OIL
7391.0	-	7414.0	19.5	42.1	OIL
7422.0	-	7432.0	24.9	52.1	OIL OWC 7432
7663.0	-	7685.0			OIL
7709.0	-	7748.0	21.9	46.3	OIL OWC 7748
7801.0	-	7875.0	13.0	49.4	OIL
7996.0	-	8009.0	17.2	30.5	GAS
8013.0	-	8025.0	18.8	28.3	GAS
8032.0	-	8076.0	13.0	46.8	GAS

WELL NAME : BARONIA 05

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
3540.0	- 3550.0	26	19.4	27.8	GAS
5384.0	- 5408.0	8	24.3	38.5	GAS
5418.0	- 5427.0	22	24.9	37.3	GAS
5514.0	- 5536.0	74	25.1	37.7	GAS
5544.0	- 5624.0	44	22.5	53.1	OIL
5634.0	- 5688.0	14	16.5	50.2	GAS
6984.0	- 7000.0	22	20.6	38.1	GAS
7020.0	- 7041.0	72	20.5	32.5	GAS
7080.0	- 7150.0	34	16.3	48.1	GAS
7160.0	- 7194.0	36	22.5	34.7	GAS GOC 7238
7203.0	- 7238.0	60	19.9	39.5	OIL
7238.0	- 7298.0	74	13.4	52.9	OIL
7834.0	- 7915.0	84	13.9	39.7	GAS

WELL NAME : BARONIA 06

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4794.0 - 4805.0				GAS
4830.0 - 4836.0				GAS
4978.0 - 4986.0				GAS
5620.0 - 5987.0	258	22.0	47.1	GAS
5720.0 - 5740.0				GAS
5778.0 - 5782.0				GAS
5806.0 - 5890.0				GAS
5908.0 - 5960.0				GAS GOC 5960
5960.0 - 5980.0				OIL
6005.0 - 6013.0	6	17.6	69.6	OIL
6792.0 - 6826.0	36	20.2	46.3	GAS
6858.0 - 6944.0	40	17.1	63.2	OIL OWC 6944
7390.0 - 7402.0	14	16.4	49.5	GAS
7420.0 - 7445.0	24	13.8	42.8	GAS
7454.0 - 7555.0	102	19.0	38.3	GAS
7580.0 - 7705.0	126	20.8	38.0	GAS GOC 7705
7705.0 - 7795.0	82	20.6	54.0	OIL OWC 7795
7860.0 - 7915.0	52	16.0	56.1	OIL OWC 7915
7952.0 - 7980.0	16	15.3	68.2	OIL OWC 7980
8148.0 - 8178.0	22	11.0	69.5	OIL
8185.0 - 8199.0	16	12.7	67.9	OIL
8199.0 - 8240.0	42	18.6	52.2	OIL OWC 8240
8294.0 - 8420.0	126	14.7	52.9	OIL
8494.0 - 8510.0				GAS

WELL NAME : BARONIA 07

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
3574.0	- 3602.0				GAS
4596.0	- 4666.0				GAS
4715.0	- 4718.0				GAS
4758.0	- 4762.0				GAS
4804.0	- 4811.0				GAS
5387.0	- 5411.0				GAS
5429.0	- 5477.0	48	19.2	41.2	GAS
5484.0	- 5519.0	10	14.6	67.4	GAS
5530.0	- 5555.0	16	17.1	64.8	GAS
5610.0	- 5690.0	76	23.8	34.0	GAS
5703.0	- 5762.0	54	24.0	46.8	GAS
5793.0	- 5810.0	12	25.0	49.6	OIL
5824.0	- 5834.0	6	26.9	67.0	OIL
6546.0	- 6582.0	34	22.7	40.9	GAS
6612.0	- 6696.0	70	18.0	55.9	OIL
7138.0	- 7198.0	50	19.2	43.4	GAS
7224.0	- 7315.0	88	21.3	32.0	GAS
7331.0	- 7478.0	146	20.2	36.6	GAS
7478.0	- 7573.0	92	18.6	63.5	OIL
7623.0	- 7686.0	58	19.4	51.2	OIL
7742.0	- 7766.0	26	17.3	61.2	OIL
7913.0	- 8020.0	96	17.5	51.0	OIL
8057.0	- 8186.0	100	14.4	51.5	OIL
8277.0	- 8290.0	14	20.0	18.4	GAS

GOC 7478
 OWC 7573
 OWC 7686
 OWC 7766
 OWC 8020

WELL NAME : BARONIA 08

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4846.0	- 4858.0				GAS
5640.0	- 5653.0				GAS
5682.0	- 5703.0				GAS
5730.0	- 5753.0				GAS
6922.0	- 6978.0	48	19.1	40.1	GAS GOC 6978
6978.0	- 6988.0	8	13.0	59.5	OIL
7166.0	- 7192.0	8	17.3	51.1	GAS
7215.0	- 7312.0	92	22.4	39.3	GAS GOC 7312
7312.0	- 7342.0	16	16.4	58.7	OIL
7362.0	- 7432.0	56	20.2	59.4	OIL
9540.0	- 9748.0	200	19.7	47.3	GAS GOC 9748
9748.0	- 9849.0	94	17.9	53.7	OIL

WELL NAME : BARONIA 09

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4818.0 -	4832.0				GAS
4976.0 -	4984.0				GAS
5070.0 -	5074.0	44	15.4	49.1	GAS
5640.0 -	5684.0	8	16.1	68.6	GAS
5740.0 -	5760.0	78	21.9	37.2	GAS
5826.0 -	5906.0	10	22.1	46.8	GAS
5924.0 -	5934.0	54	24.1	50.6	GAS
5940.0 -	5994.0	4	26.6	52.1	OIL
5994.0 -	6000.0	36	20.4	42.8	GAS
6820.0 -	6856.0	62	15.5	57.9	OIL
6890.0 -	6976.0	10	14.6	55.7	GAS
7416.0 -	7424.0	20	22.6	32.1	GAS
7450.0 -	7468.0	78	17.0	39.2	GAS
7478.0 -	7558.0	24	19.2	29.3	GAS
7562.0 -	7588.0	130	18.0	38.7	GAS
7600.0 -	7730.0	24	16.9	58.1	OIL
7730.0 -	7754.0	24	16.4	49.3	OIL
7880.0 -	7910.0	10	19.4	52.0	OIL
7916.0 -	7926.0				
7926.0 -	7940.0	18	13.7	75.1	OIL
7962.0 -	8002.0	42	19.2	46.8	OIL
8204.0 -	8244.0	76	12.1	51.6	OIL
8298.0 -	8384.0				

GOC 5944

OWC 6976

GOC 7730

OWC 7940

OWC 8002

OWC 8244

WELL NAME : RARDONIA 10

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4926.0	-	4944.0			
5000.0	-	5006.0			GAS
5044.0	-	5056.0			GAS
5098.0	-	5106.0			GAS
5246.0	-	5250.0			GAS
5716.0	-	5720.0			GAS
5728.0	-	5732.0			GAS
5788.0	-	5820.0	23.0	27.5	GAS
5830.0	-	5834.0	12.1	70.5	GAS
5928.0	-	5934.0	21.3	41.3	GAS
5940.0	-	5946.0	22.3	31.4	GAS
5958.0	-	6040.0	24.6	36.9	GAS
6056.0	-	6096.0	23.9	45.6	GAS
6106.0	-	6112.0	20.0	58.2	OIL
6140.0	-	6162.0	24.5	59.0	OIL
6888.0	-	6920.0	21.4	37.6	GAS
6950.0	-	7046.0	18.3	53.4	OIL
7066.0	-	7076.0	23.7	48.4	OIL
7090.0	-	7100.0	18.5	70.3	OIL
7128.0	-	7146.0	16.7	71.2	OIL
7150.0	-	7190.0	24.1	53.2	OIL
7198.0	-	7220.0	23.5	62.0	OIL OMC 7220
7460.0	-	7472.0	19.1	42.0	GAS
7496.0	-	7516.0	25.3	34.4	GAS
7552.0	-	7602.0	23.2	29.0	GAS
7606.0	-	7632.0	24.2	25.7	GAS
7650.0	-	7678.0	17.5	45.4	GAS
7688.0	-	7788.0	24.3	29.0	GAS

WELL NAME : BARONIA 10

CUT OFF OF SW : 80.00
CUT OFF OF POROSITY : 0.0
CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
7926.0 -	7946.0	20	19.2	40.0	OIL
8032.0 -	8060.0	26	18.5	56.0	OIL
8246.0 -	8296.0	52	22.6	43.3	OIL OWC 8296
8340.0 -	8426.0	82	15.5	41.7	OIL

WELL NAME : RARONIA 11

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5446.0	- 5460.0				GAS
5490.0	- 5498.0	10	16.2	59.8	OIL
6482.0	- 6492.0	34	21.9	28.3	GAS
6498.0	- 6532.0	6	19.6	46.1	GAS
6546.0	- 6552.0	2	15.2	77.5	GAS
6605.0	- 6610.0	4	15.0	65.0	GAS
6674.0	- 6680.0	96	26.5	32.1	GAS
6706.0	- 6808.0	8	26.3	34.0	GAS
6828.0	- 6836.0	4	15.0	46.9	OIL
6836.0	- 6844.0	14	25.7	36.6	OIL
6848.0	- 6862.0	12	23.2	48.1	OIL
6868.0	- 6878.0	34	27.6	48.5	OIL
6880.0	- 6914.0	16	25.1	52.5	OIL
7800.0	- 7816.0	12	16.3	74.4	OIL
7884.0	- 7906.0	20	23.0	30.9	GAS
8428.0	- 8448.0	50	22.5	33.0	GAS
8486.0	- 8536.0	14	24.1	21.9	GAS
8542.0	- 8556.0	2	21.7	25.3	GAS
8562.0	- 8568.0	30	15.7	48.7	GAS
8582.0	- 8612.0	34	22.0	29.6	GAS
8622.0	- 8654.0	78	20.5	44.6	OIL
8654.0	- 8736.0				GDC 8654 OWC 8736

WELL NAME : BARONIA 12

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)			
3530.0 -	3545.0			GAS GOC 3978
3958.0 -	3978.0			OIL
3978.0 -	4002.0			GAS
5254.0 -	5314.0			GAS
5328.0 -	5352.0			GAS GOC 5420
5416.0 -	5420.0			OIL
5420.0 -	5428.0			GAS
5538.0 -	5548.0			
6146.0 -	6348.0	16.7	59.6	
6348.0 -	6386.0	26.7	26.1	
6394.0 -	6406.0	19.8	45.6	
6514.0 -	6542.0	20.5	42.2	
6550.0 -	6648.0	23.5	41.8	
6668.0 -	6700.0	23.0	62.3	
6706.0 -	6728.0	21.0	63.6	OIL
8404.0 -	8470.0	20.6	45.6	GAS
8514.0 -	8600.0	21.8	35.9	GAS
8616.0 -	8754.0	19.8	47.1	OIL OWC 8754

WELL NAME : BARONIA 13

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)			
4070.0 -	4140.0			
5328.0 -	5370.0			
5388.0 -	5416.0			
6438.0 -	6458.0	13.0	56.8	GAS
6486.0 -	6552.0	20.1	39.4	GAS
6564.0 -	6610.0			
6620.0 -	6630.0	16.1	65.3	GAS GOC 6630
6630.0 -	6652.0	15.6	75.5	OIL
6732.0 -	6842.0	26.8	34.6	GAS
6862.0 -	6928.0	25.4	46.4	GAS
6932.0 -	6960.0	26.4	48.9	OIL
6996.0 -	7026.0	26.0	60.8	OIL
8050.0 -	8068.0	25.8	40.8	GAS GOC 8068
8068.0 -	6092.0			OIL
8130.0 -	3200.0			OIL
8794.0 -	8814.0			
8840.0 -	8868.0			
8878.0 -	9016.0	23.7	40.2	GAS
9034.0 -	9088.0	21.8	34.0	GAS
9092.0 -	9114.0	20.5	44.9	OIL
9114.0 -	9222.0	23.8	30.7	GAS GOC 9114
		25.7	38.5	OIL

WELL NAME : BARONIA 14

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
-	5414.0	5428.0				
-	5448.0	5480.0				
-	5492.0	5418.0				
-	6538.0	6570.0				GAS GOC 6570
-	6570.0	6610.0				OIL
-	6852.0	6872.0	14	22.1	48.0	GAS
-	6900.0	7010.0	108	23.0	45.4	OIL
-	9080.0	9152.0	66	20.7	55.0	GAS
-	9162.0	9270.0	90	20.3	60.1	OIL OWC 9270

WELL NAME : BARONIA 15

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5170.0	- 5218.0				GAS
6168.0	- 6220.0	46	25.4	26.6	GAS
6232.0	- 6246.0	14	23.2	36.5	GAS
6246.0	- 6256.0	8	17.2	56.3	GAS
6360.0	- 6372.0	12	20.6	35.4	FAS
6380.0	- 6384.0				GAS
6396.0	- 6438.0	40	26.6	25.8	GAS
6444.0	- 6500.0	38	27.6	32.9	GAS
6510.0	- 6528.0	14	22.1	49.1	OIL
6534.0	- 6612.0	74	27.4	50.7	GAS
8320.0	- 8336.0	10	12.0	59.9	GAS
8358.0	- 8386.0	20	18.9	41.6	GAS
8392.0	- 8512.0	94	16.0	37.3	GAS
8528.0	- 8652.0	98	16.8	52.3	OIL

DWC 8652

WELL NAME : BARONIA 16

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS	AVERAGE POROSITY	AVERAGE SATURATION	REMARKS
TOP (FT)	BASE (FT)	(%)	(%)	
5454.0 -	5494.0			GAS
5518.0 -	5542.0			GAS
6494.0 -	6544.0	20.9	34.6	GAS
6710.0 -	6758.0	24.1	33.4	GAS
6762.0 -	6812.0	23.4	41.9	GAS
6830.0 -	6882.0	23.0	47.6	GAS GDC 6882
6882.0 -	6922.0	27.8	50.1	OIL
8020.0 -	8042.0	21.6	46.5	OIL
8048.0 -	8066.0	20.4	75.4	OIL
8096.0 -	8172.0	19.3	57.9	OIL OWC 8172
8758.0 -	8782.0	12	55.7	OIL
8804.0 -	8830.0	22.8	36.1	GAS
8840.0 -	8988.0	20.1	36.8	GAS
9002.0 -	9084.0	19.7	43.4	GAS GDC 9084
9084.0 -	9190.0	22.9	42.6	OIL OWC 9190

WELL NAME : BARONIA 17

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
-	5334.0	5432.0				GAS
-	5610.0	5628.0				GAS
-	5730.0	5746.0				GAS
-	5768.0	5794.0				GAS
-	6034.0	6046.0				GAS
-	6348.0	6368.0				GAS
-	6378.0	6386.0				DIL
-	6416.0	6472.0	56	26.6	27.2	GAS
-	6482.0	6492.0	8	24.7	35.2	GAS
-	6542.0	6562.0	20	20.1	52.3	GAS
-	6604.0	6634.0	26	30.6	26.7	GAS
-	6644.0	6750.0	102	29.4	31.0	GAS
-	6768.0	6808.0	40	28.5	39.0	GAS
-	6876.0	6894.0	18	32.2	46.5	OIL
-	7860.0	7904.0	42	26.6	35.5	GAS
-	7934.0	8046.0	86	19.4	57.1	OIL OWC 8046
-	8630.0	8704.0	54	21.9	40.5	GAS
-	8710.0	8854.0	108	22.7	31.9	GAS
-	8876.0	8988.0	114	20.9	37.0	GAS GDC 8988
-	8988.0	9012.0	24	22.7	35.8	OIL OWC 9012

WELL NAME : BARONIA 18

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4342.0	- 4384.0				GAS
5898.0	- 5970.0				GAS
5983.0	- 6012.0				GAS
6090.0	- 6098.0				GAS
6162.0	- 6176.0				GAS
6236.0	- 6264.0				GAS
7150.0	- 7173.0				GAS
7161.0	- 7204.0				GAS
7236.0	- 7304.0	70	20.8	31.9	GAS
7316.0	- 7332.0	16	19.5	36.7	GAS
7396.0	- 7320.0				GAS
7478.0	- 7516.0	36	22.0	34.8	GAS
7532.0	- 7592.0	60	22.8	30.2	GAS
7594.0	- 7680.0	84	23.1	42.1	GAS
7700.0	- 7730.0	30	20.7	52.3	GAS GOC 7730
7730.0	- 7750.0	18	25.5	45.3	OIL
7840.0	- 7874.0	26	30.2	70.0	OIL

WELL NAME : FAIRLY BARAM 01

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
7986.0 -	8042.0	6	22.5	74.2	OIL OWC 8042
8082.0 -	8116.0	20	21.8	63.9	OIL
8142.0 -	8188.0	32	25.3	49.3	OIL
8204.0 -	8232.0	22	22.6	47.2	GAS GOC 8232
8232.0 -	8370.0	70	21.7	62.7	OIL OWC 8370
8414.0 -	8522.0	46	23.9	53.8	OIL OWC 8522
8994.0 -	9092.0	86	23.7	36.6	OIL OWC 9092
9186.0 -	9274.0	82	23.6	39.8	GAS GOC 9274
9274.0 -	9428.0	126	20.6	42.5	OIL

WELL NAME : FAIRLY BARAM 02

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

INTERVAL	TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
-	8072.0	8090.0	12	27.5	67.2	OIL OWC 8090
-	8128.0	8145.0	10	24.5	72.7	OIL OWC 8145
-	8183.0	8288.0	68	19.6	59.2	OIL
-	8298.0	8314.0	18	19.8	63.2	OIL OWC 8314
-	8386.0	8454.0	38	22.6	58.5	OIL OWC 8456
-	8847.0	9020.0	84	23.0	38.9	OIL OWC 9020
-	9110.0	9306.0	186	18.8	43.1	OIL

WELL NAME : FAIRLY BARAM 03

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

INTERVAL		NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)				
6772.0	6832.0	10	22.2	71.4	OIL OWC 8158
8114.0	8158.0	34	25.7	53.7	OIL
8302.0	8342.0	30	22.9	61.5	OIL
8430.0	8488.0	28	21.3	63.7	OIL OWC 8542

WELL NAME : FAIRLY BARAM 11

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
8822.0 -	8908.0	76	23.1	50.8	OIL

WELL NAME : FAIRLY BARAM 29

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

TOP (FT)	INTERVAL	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
7650.0	-	7670.0	10	21.8	69.1	OIL OWC 7670
7800.0	-	7832.0				OIL
7906.0	-	7937.0	26	22.2	49.7	OIL OWC 7937
7962.0	-	7971.0	8	21.1	60.2	GAS
7971.0	-	7986.0	10	19.1	73.1	OIL
8587.0	-	8603.0	16	21.9	48.0	GAS GOC 8603
8637.0	-	8668.0	28	23.4	58.5	OIL OWC 8668
8752.0	-	8766.0	14	21.6	32.3	GAS
8766.0	-	8904.0	132	21.4	43.8	OIL

WELL NAME : WEST LUTONG 01

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5335.0	- 5365.0	16	19.5	44.6	WEST LUTONG 01 'B2-1' GA
5365.0	- 5453.0	40	23.5	47.4	WEST LUTONG 01 'B2-2' GA
5453.0	- 5520.0	54	25.7	37.3	WEST LUTONG 01 'C1-1' GA
5520.0	- 5566.0	26	24.3	32.3	WEST LUTONG 01 'C1-1' OI
5566.0	- 5609.0	24	27.9	28.0	WEST LUTONG 01 'C1-2' GA
5609.0	- 5629.0	6	22.1	49.3	WEST LUTONG 01 'C1-2' OI
5629.0	- 5732.0	70	24.2	36.0	WEST LUTONG 01 'C1-3' OI
5732.0	- 5885.0	112	24.5	35.9	WEST LUTONG 01 'C1-3' OI

WELL NAME : WEST LUTONG 02

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)			
5647.0 -	5678.0	16.4	45.2	WEST LUTONG 02 'B2-1' GA
5678.0 -	5682.0			WEST LUTONG 02 'B2-1' OI
5682.0 -	5745.0			WEST LUTONG 02 'B2-2' GA
5745.0 -	5779.0	21.2	51.0	WEST LUTONG 02 'B2-2' OI
5779.0 -	5906.0	21.0	41.0	WEST LUTONG 02 'C1-1' OI
5906.0 -	5969.0	19.3	47.5	WEST LUTONG 02 'C1-2' OI
5969.0 -	6085.0	19.2	43.7	WEST LUTONG 02 'C1-3' OI
6085.0 -	6253.0	21.8	34.8	WEST LUTONG 02 'C2-1' OI

WELL NAME : WEST LUTONG 04

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

INTERVAL	TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
-	5335.0	5369.0	14	20.1	47.2	WEST LUTONG 04 'B2-1' GA
-	5369.0	5463.0	34	19.9	46.9	
-	5463.0	5510.0	28	20.1	40.5	WEST LUTONG 04 'C1-1' GA
-	5510.0	5556.0	16	18.1	46.1	WEST LUTONG 04 'C1-1' OI
-	5556.0	5599.0	28	19.7	42.2	WEST LUTONG 04 'C1-2' GA
-	5599.0	5633.0	8	18.7	46.3	WEST LUTONG 04 'C1-2' OI
-	5633.0	5736.0	78	20.2	42.4	WEST LUTONG 04 'C1-3' OI
-	5736.0	5891.0	78	19.5	39.9	WEST LUTONG 04 'C2-1' OI
-	6483.0	6510.0	12	20.5	26.0	
-	6531.0	6571.0	30	19.7	33.9	
-	6571.0	6630.0	34	19.7	34.6	

WELL NAME : WEST LUTONG 06

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5811.0	- 5858.0	14	19.5	38.9	WEST LUTONG 06 'B2-1' GA
5858.0	- 5939.0	2	13.7	58.7	
5939.0	- 5959.0				
5959.0	- 6078.0	46	14.9	46.1	WEST LUTONG 06 'C1-2' OI
6078.0	- 6158.0	28	18.9	37.1	
6158.0	- 6281.0	50	19.5	36.8	WEST LUTONG 06 'C1-3' OI
6281.0	- 6490.0	102	18.4	39.5	WEST LUTONG 06 'C2-1' OI

WELL NAME : WEST LUTONG 07

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5318.0	- 5357.0	4	13.9	57.6	WEST LUTONG 07 'B2-1' GA
5357.0	- 5447.0				WEST LUTONG 07 'B2-2' GA
5447.0	- 5492.0	24	17.0	48.9	WEST LUTONG 07 'C1-1' GA
5492.0	- 5560.0	32	18.2	43.4	WEST LUTONG 07 'C1-1' OI
5560.0	- 5582.0				WEST LUTONG 07 'C1-2' GA
5582.0	- 5622.0				WEST LUTONG 07 'C1-2' OI
5622.0	- 5726.0	10	22.1	38.0	WEST LUTONG 07 'C1-3' OI
5726.0	- 5882.0	74	18.4	40.0	WEST LUTONG 07 'C2-1' OI
6424.0	- 6470.0	4	17.8	56.1	
6470.0	- 6498.0	24	16.4	38.4	
6498.0	- 6566.0	24	17.1	34.9	
6566.0	- 6631.0	50	20.2	35.4	
6631.0	- 6504.0				
6671.0	- 6515.0				
6756.0	- 6547.0				
6843.0	- 6557.0				
7058.0	- 7072.0				
7072.0	- 7090.0				
7090.0	- 7090.0				
7090.0	- 7255.0	46	19.1	40.4	
7255.0	- 7288.0				
7288.0	- 7364.0	2	20.2	40.4	
7364.0	- 7035.0				
7375.0	- 7052.0				
7447.0	- 7174.0				
7521.0	- 7603.0				
7603.0	- 7332.0				
7631.0	- 7355.0				

WELL NAME : WEST LUTONG 07

CUT OFF OF SW : 60.00
CUT OFF OF POROSITY : 0.0
CUT OFF OF SHALE : 60.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP				
7703.0 -	7745.0			
7745.0 -	7858.0			
7858.0 -	7899.0			
7899.0 -	8033.0	17.8	39.6	

WELL NAME : WEST LUTONG 08

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5785.0	- 5826.0	10	17.8	42.8	WEST LUTONG 08 'B2-1' GA
5826.0	- 5921.0	2	17.6	48.9	WEST LUTONG 08 'B2-2' GA
5921.0	- 5942.0	8	22.0	35.6	WEST LUTONG 08 'C1-1' GA
5942.0	- 6037.0	14	17.6	46.2	WEST LUTONG 08 'C1-1' OI
6037.0	- 6105.0	16	16.8	46.5	WEST LUTONG 08 'C1-2' OI
6105.0	- 6211.0	32	19.2	42.7	WEST LUTONG 08 'C1-3' OI
6211.0	- 6353.0	44	18.8	42.1	WEST LUTONG 08 'C2-1' OI
6866.0	- 6880.0	6	16.6	47.3	
6902.0	- 6918.0	6	19.5	53.0	
6950.0	- 6988.0	24	16.5	34.2	
6986.0	- 6992.0	4	15.4	47.5	
7044.0	- 7114.0	50	18.1	35.8	
7114.0	- 7120.0	4	20.3	36.8	
7150.0	- 7204.0	26	18.7	35.5	
7242.0	- 7322.0	28	16.6	40.3	
7322.0	- 7366.0	28	17.3	39.1	
7524.0	- 7544.0	14	14.6	45.8	
7544.0	- 7568.0	8	14.0	45.9	
7732.0	- 7744.0	12	17.3	31.4	
7762.0	- 7840.0	8	20.1	46.8	
7840.0	- 7856.0	12	16.3	50.4	
7856.0	- 7878.0				
7922.0	- 7998.0	64	19.5	25.4	
8000.0	- 7998.0				
8083.0	- 8109.0	18	18.5	30.5	
8109.0	- 8150.0	36	18.9	35.1	
8178.0	- 8218.0	2	19.9	45.0	
8218.0	- 8243.0	22	18.4	37.5	

WELL NAME : WEST LUTONG 08

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
8323.0 -	8343.0	18	19.8	39.4	
8372.0 -	8495.0	2	22.0	58.9	

WELL NAME : WEST LUTONG 14

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5336.0	- 5367.0	4	21.0	53.2	WEST LUTONG 14 'B2-1' GA
5367.0	- 5461.0				WEST LUTONG 14 'B2-2' GA
5461.0	- 5523.0	24	20.4	50.1	WEST LUTONG 14 'C1-1' GA
5523.0	- 5573.0	22	21.8	41.4	WEST LUTONG 14 'C1-1' OI
5573.0	- 5616.0	16	21.5	42.5	WEST LUTONG 14 'C1-2' GA
5616.0	- 5636.0				WEST LUTONG 14 'C1-2' OI
5636.0	- 5743.0	46	21.2	42.2	WEST LUTONG 14 'C1-3' OI
5743.0	- 5901.0	80	20.7	40.9	WEST LUTONG 14 'C2-1' OI

WELL NAME : WEST LUTONG 16

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4432.0	-	4439.0	20.9	40.4	WEST LUTONG 16 'C1' GAS BEAR
4439.0	-	4551.0	23.9	58.3	WEST LUTONG 16 'C1' OIL BEAR
4551.0	-	4635.0	24.6	51.1	WEST LUTONG 16 'C2' OIL BEAR
4635.0	-	4719.0	26.2	59.5	WEST LUTONG 16 'C2' OIL BEAR
4719.0	-	4796.0	22.1	55.3	WEST LUTONG 16 'D1' GAS BEAR
4796.0	-	4816.0	30.2	55.7	WEST LUTONG 16 'D2' BEAR
4816.0	-	4874.0	18.3	41.2	WEST LUTONG 16 'E1' GAS BEAR
4874.0	-	4948.0	17.1	48.4	WEST LUTONG 16 'E2' GAS BEAR
4948.0	-	4967.0	20.2	48.4	WEST LUTONG 16 'E2' OIL BEAR
4967.0	-	5009.0	20.3	34.5	WEST LUTONG 16 'E4' GAS BEAR
5009.0	-	5031.0			WEST LUTONG 16 'E4' OIL BEAR
5031.0	-	5050.0			WEST LUTONG 16 'F0' GAS BEAR
5050.0	-	5073.0	13.8	36.6	WEST LUTONG 16 'F0' GAS BEAR
5073.0	-	5120.0	19.7	36.9	WEST LUTONG 16 'F1' GAS BEAR
5120.0	-	5154.0			WEST LUTONG 16 'F2' OIL BEAR
5154.0	-	5194.0	20.6	47.1	WEST LUTONG 16 'G1' OIL BEAR
5194.0	-	5239.0	19.2	56.6	WEST LUTONG 16 'G2' OIL BEAR
5239.0	-	5387.0	22.3	53.9	WEST LUTONG 16 'H' OIL BEAR
5387.0	-	5421.0	15.7	46.8	WEST LUTONG 16 'I' GAS BEAR
5421.0	-	5428.0			WEST LUTONG 16 'I' OIL BEAR
5428.0	-	5480.0	15.7	49.6	WEST LUTONG 16 'J' GAS BEAR
5480.0	-	5526.0	13.4	59.8	WEST LUTONG 16 'J' OIL BEAR
5526.0	-	5632.0	21.1	35.0	WEST LUTONG 16 'K' OIL BEAR
5632.0	-	5678.0	21.1	33.7	WEST LUTONG 16 'L' OIL BEAR
5678.0	-	5806.0	21.2	41.9	WEST LUTONG 16 'M' OIL BEAR
5806.0	-	5865.0	22.4	36.5	WEST LUTONG 16 'N' OIL BEAR

WELL NAME : WEST LUTONG 21

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4146.0	-				WEST LUTONG 21 'A0' GAS BEAR
4239.0	4239.0				WEST LUTONG 21 'A1' GAS BEAR
4333.0	4409.0	6	19.8	52.5	WEST LUTONG 21 'B1' GAS BEAR
4409.0	4457.0	6	22.2	50.1	WEST LUTONG 21 'B2' GAS BEAR
4457.0	4552.0	14	13.8	55.1	WEST LUTONG 21 'C1' GAS BEAR
4552.0	4636.0				WEST LUTONG 21 'C1' OIL BEAR
4636.0	4699.0				WEST LUTONG 21 'C2' OIL BEAR
4699.0	4703.0				WEST LUTONG 21 'C2' GAS BEAR
4703.0	4777.0	2	18.1	58.6	WEST LUTONG 21 'C2' OIL BEAR
4777.0	4805.0				WEST LUTONG 21 'D1' GAS BEAR
4805.0	4854.0				WEST LUTONG 21 'D2' GAS BEAR
4854.0	4919.0	18	12.8	50.8	WEST LUTONG 21 'E1' GAS BEAR
4919.0	4968.0				WEST LUTONG 21 'E2' GAS BEAR
4968.0	4990.0				WEST LUTONG 21 'E2' OIL BEAR
4990.0	5027.0				WEST LUTONG 21 'E4' GAS BEAR
5027.0	5055.0				WEST LUTONG 21 'F0' GAS BEAR
5055.0	5084.0	12	13.3	41.6	WEST LUTONG 21 'F1' GAS BEAR
5084.0	5113.0	2	22.4	59.9	WEST LUTONG 21 'F2' GAS BEAR
5113.0	5120.0				WEST LUTONG 21 'F2' OIL BEAR
5120.0	5158.0	2	11.8	56.0	WEST LUTONG 21 'G1' OIL BEAR
5158.0	5200.0				WEST LUTONG 21 'G2' OIL BEAR
5200.0	5351.0				WEST LUTONG 21 'H' OIL BEAR
5351.0	5388.0	4	10.3	51.2	WEST LUTONG 21 'I' GAS BEAR
5388.0	5482.0				WEST LUTONG 21 'J' GAS BEAR
5482.0	5500.0				WEST LUTONG 21 'K' GAS BEAR
5500.0	5575.0	6	14.2	49.1	WEST LUTONG 21 'K' OIL BEAR
5575.0	5589.0				WEST LUTONG 21 'L' GAS BEAR
5589.0	5589.0				WEST LUTONG 21 'L' GAS BEAR
5589.0	5651.0	12	11.2	56.0	WEST LUTONG 21 'L' OIL BEAR

WELL NAME : WEST LUTONG 21

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5651.0	- 5750.0	20	15.0	47.4	WEST LUTONG 21 'M ' OIL BEAR
5750.0	- 5896.0	22	15.3	49.9	WEST LUTONG 21 'N ' OIL BEAR

WELL NAME : WEST LUTONG 22

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4951.0	5046.0	8	24.1	41.4	WEST LUTONG 22 'A0' GAS BEAR
5046.0	5168.0	4	18.5	56.4	WEST LUTONG 22 'A1' GAS BEAR
5168.0	5275.0	4	20.2	54.5	WEST LUTONG 22 'B1' GAS BEAR
5275.0	5334.0	6	23.9	56.2	WEST LUTONG 22 'C1' OIL BEAR
5334.0	5400.0				WEST LUTONG 22 'C2' OIL BEAR
5400.0	5565.0				WEST LUTONG 22 'C1' OIL BEAR
5565.0	5674.0				WEST LUTONG 22 'C2' OIL BEAR
5674.0	5785.0				WEST LUTONG 22 'D1' GAS BEAR
5785.0	5816.0				WEST LUTONG 22 'D2' BEAR
5816.0	5874.0	20	17.3	44.0	WEST LUTONG 22 'E1' GAS BEAR
5874.0	5978.0				WEST LUTONG 22 'E2' GAS BEAR
5978.0	5966.0				WEST LUTONG 22 'E2' OIL BEAR
5966.0	6059.0				WEST LUTONG 22 'E4' OIL BEAR
6059.0	6110.0				WEST LUTONG 22 'F0' GAS BEAR
6110.0	6153.0	8	17.0	39.9	WEST LUTONG 22 'F1' GAS BEAR
6153.0	6220.0	32	19.0	38.7	WEST LUTONG 22 'F2' OIL BEAR
6220.0	6250.0	4	17.3	51.8	WEST LUTONG 22 'G1' OIL BEAR
6250.0	6314.0	6	19.3	52.6	WEST LUTONG 22 'G2' OIL BEAR
6314.0	6390.0				WEST LUTONG 22 'H' OIL BEAR
6390.0	6578.0				WEST LUTONG 22 'I' GAS BEAR
6578.0	6581.0				WEST LUTONG 22 'I' OIL BEAR
6581.0	6648.0	2	15.2	58.8	WEST LUTONG 22 'J' GAS BEAR
6648.0	6664.0	14	21.0	37.8	WEST LUTONG 22 'J' OIL BEAR
6664.0	6782.0	24	16.1	51.3	WEST LUTONG 22 'K' OIL BEAR
6782.0	6905.0	40	18.0	40.1	WEST LUTONG 22 'L' OIL BEAR
6905.0	6992.0	24	19.3	42.2	WEST LUTONG 22 'M' OIL BEAR
6992.0	7120.0				WEST LUTONG 22 'N' OIL BEAR
7120.0	7160.0				WEST LUTONG 22 'N' OIL BEAR

WELL NAME : WEST LUTONG 23

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

INTERVAL	TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
-	4213.0	4289.0	50	25.8	40.8	WEST LUTONG 23 'A0' GAS BEAR
-	4289.0	4388.0	42	27.0	44.5	WEST LUTONG 23 'A1' GAS BEAR
-	4388.0	4466.0	8	22.1	53.6	WEST LUTONG 23 'B1' GAS BEAR
-	4466.0	4520.0	16	24.9	51.9	WEST LUTONG 23 'B2' GAS BEAR
-	4520.0	4613.0	14	24.3	40.3	WEST LUTONG 23 'C1' GAS BEAR
-	4613.0	4710.0	6	20.9	53.3	WEST LUTONG 23 'C1' OIL BEAR
-	4710.0	4775.0	6	21.7	48.1	WEST LUTONG 23 'C2' OIL BEAR
-	4775.0	4792.0	4	19.9	56.4	WEST LUTONG 23 'C2' GAS BEAR
-	4792.0	4864.0	4	19.9	56.4	WEST LUTONG 23 'C2' OIL BEAR
-	4864.0	4892.0	10	20.9	43.8	WEST LUTONG 23 'D1' GAS BEAR
-	4892.0	4949.0	10	20.9	43.8	WEST LUTONG 23 'D2' BEAR
-	4949.0	5016.0	32	24.4	39.8	WEST LUTONG 23 'E1' GAS BEAR
-	5016.0	5081.0	16	19.8	45.8	WEST LUTONG 23 'E2' GAS BEAR
-	5081.0	5097.0	2	15.6	60.0	WEST LUTONG 23 'E2' OIL BEAR
-	5097.0	5136.0	2	15.6	60.0	WEST LUTONG 23 'E4' GAS BEAR
-	5136.0	5168.0	2	15.6	60.0	WEST LUTONG 23 'F0' GAS BEAR
-	5168.0	5199.0	16	18.4	38.9	WEST LUTONG 23 'F1' GAS BEAR
-	5199.0	5232.0	2	19.0	50.4	WEST LUTONG 23 'F2' GAS BEAR
-	5232.0	5236.0	2	15.0	48.3	WEST LUTONG 23 'G1' GAS BEAR
-	5236.0	5276.0	10	20.1	44.5	WEST LUTONG 23 'G1' OIL BEAR
-	5276.0	5279.0	2	16.3	52.5	WEST LUTONG 23 'G2' GAS BEAR
-	5279.0	5323.0	2	16.3	52.5	WEST LUTONG 23 'G2' OIL BEAR
-	5323.0	5328.0	2	16.3	52.5	WEST LUTONG 23 'H' GAS BEAR
-	5328.0	5489.0	2	16.3	52.5	WEST LUTONG 23 'H' OIL BEAR
-	5489.0	5530.0	2	15.0	40.3	WEST LUTONG 23 'I' GAS BEAR
-	5530.0	5629.0	4	12.5	58.7	WEST LUTONG 23 'J' GAS BEAR
-	5629.0	5655.0	4	17.0	38.7	WEST LUTONG 23 'K' GAS BEAR
-	5655.0	5732.0	22	17.3	38.6	WEST LUTONG 23 'K' OIL BEAR

WELL NAME : WEST LUTONG 23

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 60.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)			
5732.0 -	5762.0	17.6	39.7	WEST LUTONG 23 'L' GAS BEAR
5762.0 -	5814.0	16.0	50.9	WEST LUTONG 23 'L' OIL BEAR
5814.0 -	5923.0	19.7	41.2	WEST LUTONG 23 'M' OIL BEAR
5923.0 -	6065.0	18.1	39.8	WEST LUTONG 23 'N' OIL BEAR
6065.0 -	6585.0			
6585.0 -	6642.0	17.4	32.2	
6642.0 -	6721.0	14.9	27.3	
6721.0 -	6791.0	18.7	38.2	
6791.0 -	6848.0	20.6	34.9	
6848.0 -	6942.0	17.7	39.1	
6942.0 -	7086.0	17.9	36.9	
7086.0 -	7132.0	21.7	31.1	
7132.0 -	7297.0	14.3	36.1	
7297.0 -	7326.0	14.6	42.7	
7326.0 -	7493.0	17.7	34.2	
7493.0 -	7518.0	13.7	43.6	
7518.0 -	7540.0	20.2	40.2	
7540.0 -	7610.0			
7610.0 -	7954.0	19.4	31.1	
7954.0 -	7763.0			
7763.0 -	7778.0			
7778.0 -	7865.0			
7865.0 -	7934.0			
7934.0 -	7959.0	16.1	43.0	
7959.0 -	8030.0	19.4	33.4	
8030.0 -	8131.0	19.2	37.7	
8131.0 -	8133.0	20.4	48.6	

WELL NAME : BARAM 08

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	BLOCK	ZONE	REMARKS
7900.0	- 7943.0	34	16.2	50.4	BLOCK	6 ZONE S3	OIL
8549.0	- 8585.0				BLOCK	6 ZONE F2	OIL
8694.0	- 8703.0	6	8.6	60.6	BLOCK	6 ZONE F2	OIL
9274.0	- 9370.0	22	9.5	64.1	BLOCK	4 ZONE G1	OIL
9377.0	- 9508.0	52	11.9	52.5	BLOCK	4 ZONE G2	OIL
9558.0	- 9584.0	4	6.8	73.7	BLOCK	4 ZONE G3	OIL

WELL NAME : BARAM10

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6880.0	- 6905.0	24	21.4	59.7	BLOCK: 4-1, ZONE: C1, OIL
8246.0	- 8360.0	78	18.0	48.2	BLOCK: 5, ZONE: , OIL
8526.0	- 8609.0	72	18.5	32.2	BLOCK: 5, ZONE: S3, OIL
8696.0	- 8747.0	50	17.3	33.7	BLOCK: 5, ZONE: , OIL
8879.0	- 8933.0	34	17.9	52.8	BLOCK: 5, ZONE: F1, OIL
9183.0	- 9193.0	10	20.5	42.3	BLOCK: 5, ZONE: , OIL
9408.0	- 9507.0	62	13.2	48.0	BLOCK: 5, ZONE: S9, OIL
9585.0	- 9646.0	42	15.0	45.9	BLOCK: 5, ZONE: G1, OIL
9884.0	- 9975.0	56	16.0	49.3	BLOCK 4 ZONE : G-1 OIL
10106.0	- 10240.0	76	15.0	44.4	BLOCK 4 ZONE : G-2 GAS
10249.0	- 10322.0	48	15.7	45.2	BLOCK 4 ZONE : G-2 OIL
10322.0	- 10398.0	52	17.3	38.0	BLOCK 4 ZONE : G-2 OIL

WELL NAME : BARAM 11

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5905.0	- 5922.0	10	20.4	45.4	BLOCK: 4-1, ZONE: B, GAS
6086.0	- 6118.0	26	23.6	47.0	BLOCK: 4-1, ZONE: 3, OIL
6514.0	- 6566.0	44	20.6	49.2	BLOCK: 4-1, ZONE: C1, OIL
6602.0	- 6656.0	30	17.8	51.4	BLOCK: 4-1, ZONE: P2, OIL
6809.0	- 6830.0	20	21.6	35.0	BLOCK: 4-1, ZONE: C2, GAS
6830.0	- 6874.0	28	19.9	50.3	BLOCK: 4-1, ZONE: , OIL
7777.0	- 7815.0	34	23.4	30.2	BLOCK : 1-2 ZONE : E2
7815.0	- 7868.0	42	21.0	40.8	BLOCK : 1-2 ZONE : E2
7953.0	- 7992.0	32	18.7	40.9	GAS
8039.0	- 8045.0	6	9.4	62.8	GAS
8093.0	- 8155.0	42	12.1	47.0	GAS
8188.0	- 8254.0	42	17.8	38.2	GAS
8372.0	- 8399.0	20	12.7	50.2	GAS

WELL NAME : RARAM 12

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6769.0 - 6869.0	64	19.4	36.7	BLOCK: 5 , ZONE: C2, GAS
6955.0 - 6990.0	26	20.5	36.2	BLOCK: 5 , ZONE: P5, GAS
6999.0 - 7024.0	22	20.0	41.6	BLOCK: 5 , ZONE: , OIL
7044.0 - 7070.0	26	21.7	40.2	BLOCK: 5 , ZONE: , OIL
7107.0 - 7130.0	24	20.6	46.6	BLOCK: 5 , ZONE: , OIL
7812.0 - 7930.0	66	18.9	38.9	BLOCK: 5 , ZONE: O2, GAS
7930.0 - 7986.0	50	19.6	46.2	BLOCK: 5 , ZONE: , OIL
8858.0 - 8895.0				BLOCK: 5 , ZONE: S3, OIL
8248.0 - 8330.0				
8403.0 - 8476.0				

WELL NAME : BARAM 12

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
9024.0	9086.0	28	13.2	40.4	BLOCK 4 ZONE : F-2 OIL
9210.0	9246.0	54	19.4	34.0	BLOCK 4 ZONE : F-2 OIL
9581.0	9644.0	32	10.5	52.9	BLOCK 4 ZONE : G-1 OIL
9792.0	9826.0	64	13.3	43.4	BLOCK 4 ZONE : G-1 GAS
9897.0	9977.0	24	11.0	42.4	BLOCK 4 ZONE : G-1 OIL
9988.0	10016.0	26	14.8	37.7	BLOCK 4 ZONE : G-2 GAS
10057.0	10082.0				BLOCK 4 ZONE : G-2 OIL

WELL NAME : BARAM 13

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT.)	BASE (FT.)	NET THICKNESS (FT.)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6045.0	6115.0	56	17.3	40.2	BLOCK: 5 , ZONE: 1 , GAS
6458.0	6548.0	70	18.6	37.6	BLOCK: 5 , ZONE: C1, GAS
6548.0	6568.0	18	19.1	44.7	BLOCK: 5 , ZONE: , OIL
6593.0	6656.0	36	15.2	50.1	BLOCK: 5 , ZONE: P2, OIL
6684.0	6697.0	10	15.4	45.8	BLOCK: 5 , ZONE: P3, OIL
6826.0	6870.0	34	19.3	33.0	BLOCK: 5 , ZONE: C2, GAS
6878.0	6913.0	32	16.4	45.8	BLOCK: 5 , ZONE: , OIL
7010.0	7062.0	32	17.4	50.7	BLOCK: 5 , ZONE: , OIL
7812.0	7930.0	38	14.3	48.8	BLOCK: 5 , ZONE: D2, GAS
7930.0	7986.0	22	15.3	53.1	BLOCK: 5 , ZONE: , OIL
8295.0	8340.0	46	15.4	32.1	BLOCK 4 ZONE : E-1 GAS
8340.0	8349.0	8	16.5	38.1	BLOCK 4 ZONE : E-1 OIL
8490.0	8577.0	80	16.7	46.7	BLOCK 4 ZONE : E-2 OIL
9051.0	9096.0	28	9.4	50.1	BLOCK 4 ZONE : F-2 OIL
9220.0	9255.0	28	11.8	48.7	BLOCK 4 ZONE : F-2 OIL
9603.0	9670.0	54	18.2	36.6	BLOCK 4 ZONE : G-1 OIL
10005.0	10155.0	36	14.3	39.5	BLOCK 7 ZONE : G-2 OIL

WELL NAME : BARAM 14

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6625.0	-	44	17.4	36.8	BLOCK 5 ZONE P5 GAS
6704.0	-	44	18.7	35.0	BLOCK 5 ZONE P6 GAS
6768.0	-	20	16.7	39.3	BLOCK 5 ZONE P7 GAS
6790.0	-	14	15.8	46.5	BLOCK 5 ZONE P7 OIL
7390.0	-	84	15.8	37.1	BLOCK 5 ZONE D2 GAS
7536.0	-	62	18.4	41.0	BLOCK 5 ZONE D2 OIL
7756.0	-	60	14.0	36.5	BLOCK 5 ZONE E1 GAS
7901.0	-	46	17.9	29.4	BLOCK 5 ZONE E1 OIL
8070.0	-	30	14.5	43.2	BLOCK 5 ZONE E2 GAS
8104.0	-	34	22.2	39.4	BLOCK 5 ZONE E2 OIL
8342.0	-	26	22.3	32.8	BLOCK 5 ZONE F1 OIL
8548.0	-	54	11.5	45.0	BLOCK 5 ZONE F2 GAS
8708.0	-	38	15.8	42.8	BLOCK 5 ZONE F2 OIL
8994.0	-	8	15.5	41.6	BLOCK 5 ZONE G1 GAS
9000.0	-	76	17.0	42.5	BLOCK 5 ZONE G1 OIL
9147.0	-	42	14.6	51.0	BLOCK 4 ZONE G2 GAS
9208.0	-	18	12.6	45.0	BLOCK 4 ZONE G2 OIL
9578.0	-	76	16.6	41.2	BLOCK 4 ZONE G3 GAS

WELL NAME : BARAM 16

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6885.0	- 6967.0	38	14.3	53.3	BLOCK: 5 , ZONE: C1, GAS
6976.0	- 7036.0	46	16.5	54.2	BLOCK: 5 , ZONE: , OIL
7070.0	- 7139.0	20	13.4	58.6	BLOCK: 5 , ZONE: P2, OIL
7170.0	- 7186.0	14	19.1	42.1	BLOCK: 5 , ZONE: P3, OIL
7330.0	- 7374.0	26	15.5	49.9	BLOCK: 5 , ZONE: , OIL
8495.0	- 8517.0	16	13.5	63.2	BLOCK: 5 , ZONE: , OIL
8966.0	- 9034.0	48	11.9	56.4	BLOCK 4 ZONE : E-1 OIL
9770.0	- 9831.0	24	10.1	57.0	BLOCK 4 ZONE : F-2 OIL
10723.0	- 10822.0	52	13.5	50.3	BLOCK 7 ZONE : G-2 OIL

WELL NAME : BARAM 17

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6132.0	6191.0	50	17.4	39.2	BLOCK: 5 , ZONE: , GAS
6561.0	6637.0	44	13.8	54.3	BLOCK: 5 , ZONE: C1, GAS
6643.0	6703.0	58	17.7	52.0	BLOCK: 5 , ZONE: , OIL
6727.0	6791.0	32	17.2	50.5	BLOCK: 5 , ZONE: P2, OIL
6818.0	6832.0	12	19.9	39.1	BLOCK: 5 , ZONE: P3, OIL
6970.0	6991.0	20	18.4	38.6	BLOCK: 5 , ZONE: C2, GAS
6991.0	7048.0	34	17.1	56.0	BLOCK: 5 , ZONE: , OIL
8082.0	8105.0	12	14.3	61.8	BLOCK: 5 , ZONE: , OIL
8320.0	8337.0	8	11.3	69.5	BLOCK 4 ZONE : E-1 OIL
8492.0	8560.0	54	12.7	46.8	BLOCK 4 ZONE : E-1 OIL
8700.0	8754.0	26	14.3	62.7	BLOCK 4 ZONE : E-2 OIL
9311.0	9374.0	26	8.8	53.6	BLOCK 4 ZONE : F-2 OIL
9510.0	9518.0	10	18.4	52.9	BLOCK 4 ZONE : F-2 OIL
9828.0	9834.0	8	7.5	71.1	BLOCK 7 ZONE : G-1 OIL
9854.0	9876.0	18	13.0	50.2	BLOCK 7 ZONE : G-1 OIL
9006.0	9918.0	20	16.4	67.6	BLOCK 7 ZONE : G-1 OIL
10322.0	10429.0	70	11.8	47.8	BLOCK 7 ZONE : G-2 OIL

WELL NAME : BARAM 18

CUT OFF OF SW : 80.00
CUT OFF OF POROSITY : 0.0
CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
3830.0 -	3879.0	36	24.8	50.5	BLOCK 4 ZONE : K-1 GAS
3879.0 -	3965.0	78	31.2	46.4	BLOCK 4 ZONE : K-1 OIL
5331.0 -	5359.0				BLOCK 4 ZONE : A-1 OIL

WELL NAME : RARAM 18

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)				
9303.0 -	20	11.0	52.9	BLOCK: 8 , ZONE: G2, OIL
9348.0 -	78	11.2	49.9	BLOCK: 8 , ZONE: G2, OIL

WELL NAME : BARAM 19

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5904.0	5923.0	10	21.8	55.3	BLOCK: 4-1, ZONE: , OIL
6059.0	6093.0	26	19.5	55.6	BLOCK: 4-1, ZONE: , OIL
6360.0	6484.0	78	18.3	40.7	BLOCK: 5, ZONE: C1, GAS
6506.0	6564.0	36	16.3	49.1	BLOCK: 5, ZONE: P2, OIL
6589.0	6603.0	14	15.9	47.3	BLOCK: 5, ZONE: P3, GAS
6722.0	6803.0	60	18.6	38.0	BLOCK: 5, ZONE: C2, GAS
6892.0	6902.0	10	16.8	41.8	BLOCK: 5, ZONE: P5, GAS
6913.0	6955.0	26	17.8	48.9	BLOCK: 5, ZONE: , OIL
6973.0	6993.0	18	20.8	45.1	BLOCK: 5, ZONE: , OIL
7032.0	7053.0	22	18.2	55.8	BLOCK: 5, ZONE: , OIL
7669.0	7810.0	82	17.3	38.9	BLOCK: 5, ZONE: D2, GAS
7810.0	7898.0	52	19.7	44.4	BLOCK: 5, ZONE: , OIL
8057.0	8130.0	66	14.4	39.2	BLOCK: 5, ZONE: S3, OIL
8200.0	8257.0	54	15.8	43.9	BLOCK: 5, ZONE: E2, OIL
8374.0	8417.0	38	14.7	56.4	BLOCK: 5, ZONE: F1, OIL
8665.0	8674.0	10	18.8	50.7	BLOCK 4 ZONE : F-2 OIL
8960.0	8996.0	28	12.8	45.7	BLOCK 4 ZONE : G-1 GAS
9300.0	9348.0	46	16.6	34.9	BLOCK 4 ZONE : G-1 OIL
9348.0	9408.0	58	17.1	40.8	BLOCK 4 ZONE : G-1 GAS
9506.0	9601.0	64	12.6	42.1	BLOCK 4 ZONE : G-1 OIL
9609.0	9693.0	22	14.2	49.7	BLOCK 4 ZONE : G-1 OIL
9705.0	9800.0	48	14.1	40.5	BLOCK 4 ZONE : G-2 GAS
9804.0	9874.0	44	12.2	49.4	BLOCK 4 ZONE : G-2 OIL
9934.0	10055.0				BLOCK 4 ZONE : G-3 GAS

WELL NAME : BARAMZO

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
8653.0	- 8740.0	22	12.6	58.8	BLOCK : 2- ZONE : D2
9216.0	- 9284.0	56	9.5	47.2	BLOCK : 2- ZONE : E1
9421.0	- 9533.0	46	13.6	46.7	BLOCK : 2- ZONE : E2
9533.0	- 9643.0	40	11.7	57.9	
9743.0	- 9792.0	18	13.4	48.6	BLOCK : 2- ZONE : F1
9792.0	- 9835.0	36	13.1	58.0	BLOCK : 2- ZONE : F1
10046.0	- 10101.0	44	9.2	50.0	BLOCK : 2- ZONE : F2
10240.0	- 10256.0	10	14.6	42.5	BLOCK : 2- ZONE : F2
10256.0	- 10280.0	18	11.6	48.9	BLOCK : 2- ZONE : F2
10908.0	- 10984.0				BLOCK : 2- ZONE : G1
11179.0	- 11300.0				BLOCK : 2- ZONE : G2
11333.0	- 11389.0				BLOCK : 2- ZONE : G2
11410.0	- 11444.0				BLOCK : 2- ZONE : G3

WELL NAME : RARAM 21

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5756.0	5805.0	32	18.5	58.0	BLOCK : 1-2 ZONE : A2
5989.0	5996.0	4	21.1	58.0	BLOCK : 1-2 ZONE : B
5998.0	6008.0	10	16.3	51.5	BLOCK : 1-2 ZONE : O2
6088.0	6118.0	24	22.4	41.6	BLOCK : 1-2 ZONE : O3
6159.0	6194.0	28	23.1	50.2	BLOCK : 1-1 ZONE : C1
6602.0	6616.0	14	18.7	53.9	BLOCK : 1-1 ZONE : C1
6642.0	6672.0	18	15.8	62.2	BLOCK : 1-1 ZONE : C2
6757.0	6827.0	54	20.3	43.0	BLOCK : 1-1 ZONE : D1
7410.0	7470.0	38	14.0	53.5	BLOCK : 1-1 ZONE : D1
7474.0	7544.0	46	17.4	33.4	BLOCK : 1-1 ZONE : D1
7557.0	7608.0	34	14.7	50.5	BLOCK : 1-1 ZONE : D2
7836.0	7885.0	42	14.7	42.7	BLOCK : 1-1 ZONE : E1

WELL NAME : PARAM 22

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6194.0	- 6288.0	80	16.9	49.9	BLOCK 1 ZONE : B-
6303.0	- 6348.0	24	16.7	49.5	BLOCK 1 ZONE : O-2
6365.0	- 6428.0	48	20.5	45.0	BLOCK 1 ZONE : O-3
6896.0	- 6906.0	12	19.2	57.4	BLOCK : 1-1 ZONE : C1
6934.0	- 6970.0	14	18.7	52.5	BLOCK : 1-1 ZONE : C1
7054.0	- 7110.0	40	19.1	49.4	BLOCK : 1-1 ZONE : C2
7716.0	- 7776.0	36	14.0	46.5	BLOCK : 1-1 ZONE : D1
7780.0	- 7831.0	42	17.8	35.7	BLOCK : 1-1 ZONE : D1
7867.0	- 7880.0	4	14.7	63.0	BLOCK : 1-1 ZONE : D2
8159.0	- 8212.0	44	16.3	33.6	BLOCK : 1-1 ZONE : E1

WELL NAME : BARAM 24

CUT OFF OF SW : 70.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 40.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
7454.0 -	7469.0	4	20.4	49.2	BLOCK 3-1 ZONE : C3
7510.0 -	7572.0	38	22.2	42.1	BLOCK 3-1 ZONE : C3
8542.0 -	8593.0	36	21.7	37.5	BLOCK 3-3 ZONE : E1
8751.0 -	8864.0	60	19.4	44.2	BLOCK 3-3 ZONE : E2
8909.0 -	9071.0	92	15.9	48.1	BLOCK 3-3 ZONE : E3
9512.0 -	9544.0	10	15.6	40.9	BLOCK 3-3 ZONE : G1

WELL NAME : BARAM 25

CUT OFF OF SW : 80.00
CUT OFF OF POROSITY : 0.0
CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT) 7592.0 - 7713.0	50	17.2	59.6	BLOCK 7 ZONE : D-1 GAS

WELL NAME : BARAM 25

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
8970.0	- 9003.0	22	10.4	54.8	
9201.0	- 9250.0	50	15.7	41.6	
9250.0	- 9291.0	34	16.2	50.7	BLOCK: 8 , ZONE: , OIL
9773.0	- 9811.0	34	14.6	42.0	BLOCK: 8 , ZONE: 62, OIL
9820.0	- 9830.0	12	15.8	34.8	
9830.0	- 9944.0	108	14.1	46.2	BLOCK: 8 , ZONE: 62, OIL
9955.0	- 9967.0	12	18.5	42.3	
9967.0	- 9990.0	12	11.3	67.7	BLOCK: 8 , ZONE: 63, OIL
10000.0	- 10020.0	22	13.7	45.6	
10020.0	- 10030.0	6	13.1	52.5	BLOCK: 8 , ZONE: , OIL
10061.0	- 10092.0	30	12.3	54.2	BLOCK: 8 , ZONE: , OIL
10139.0	- 10205.0	28	10.0	55.6	BLOCK: 8 , ZONE: , OIL

WELL NAME : RARAM26

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL		NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)				
8000.0	8029.0	2	22.2	76.2	BLOCK : 1-2 ZONE : C1
8982.0	9081.0	44	17.0	59.9	BLOCK : 1-2 ZONE : D1
9192.0	9253.0	46	19.4	52.1	BLOCK : 1-2 ZONE : D2
9576.0	9644.0	60	16.9	56.4	BLOCK : 1-2 ZONE : E1
9692.0	9790.0	68	22.5	45.7	BLOCK : 1-2 ZONE : E1

WELL NAME : RARAM 27

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
7838.0	- 7892.0	52	18.1	37.1	BLOCK 7 ZONE : E-1 GAS
7993.0	- 8017.0	12	15.2	57.5	BLOCK 7 ZONE : E-2 OIL
8460.0	- 8484.0	14	10.1	71.6	BLOCK 7 ZONE : F-2 OIL
8517.0	- 8590.0	26	15.3	49.8	BLOCK 7 ZONE : F-2 OIL
8596.0	- 8617.0	20	15.2	47.0	BLOCK 7 ZONE : F-2 OIL
8876.0	- 8904.0	26	13.7	56.3	BLOCK 7 ZONE : G-1 OIL
8913.0	- 8933.0	10	12.0	62.8	BLOCK 7 ZONE : G-1 OIL
8939.0	- 8961.0	22	21.3	47.6	BLOCK 7 ZONE : G-1 OIL
9012.0	- 9041.0	16	16.5	56.0	BLOCK 7 ZONE : G-1 OIL
9261.0	- 9376.0	104	15.1	40.9	BLOCK 7 ZONE : G-2 OIL
5262.0	- 5300.0				BLOCK 4 ZONE : A-1 OIL

WELL NAME : BARAM 30

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6640.0 -	6892.0	126	18.6	41.2	BLOCK 4 ZONE : C-1 GAS
7006.0 -	7030.0	14	22.2	66.4	BLOCK 4 ZONE : C-2 OIL
7718.0 -	7736.0	4	13.4	74.4	BLOCK 4 ZONE : D-1 OIL
8362.0 -	8406.0	36	15.8	67.7	BLOCK 4 ZONE : E-1 OIL
8980.0 -	9008.0	12	16.9	42.3	BLOCK 4 ZONE : F-2 OIL
9624.0 -	9750.0	2	12.1	70.7	BLOCK 4 ZONE : G-1 OIL
9784.0 -	9920.0	66	12.7	56.5	BLOCK 4 ZONE : G-2 OIL

WELL NAME : BARAM 31

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
3997.0	- 4008.0	12	32.2	39.4	BLOCK 4 ZONE : K-1 GAS
4008.0	- 4068.0	40	28.0	50.6	BLOCK 4 ZONE : K-1 OIL

WELL NAME : BARAM 32

CUT OFF OF SW : 70.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 40.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	BLOCK :	ZONE :	REMARKS
5812.0	5824.0	10	29.5	52.4	BLOCK :	ZONE :	2
6722.0	6760.0	16	18.9	54.0	BLOCK :	ZONE :	1-1
6810.0	6914.0	14	23.7	49.0	BLOCK :	ZONE :	1-1
6938.0	6950.0	10	17.3	59.9	BLOCK :	ZONE :	1-1
7044.0	7094.0	38	21.2	45.4	BLOCK :	ZONE :	1-1
7294.0	7450.0	32	18.0	60.9	BLOCK :	ZONE :	1-1
7478.0	7514.0	28	19.3	48.8	BLOCK :	ZONE :	1-1
7632.0	7694.0	20	21.6	47.2	BLOCK :	ZONE :	1-1
7760.0	7846.0	44	17.4	45.4	BLOCK :	ZONE :	1-1
8170.0	8320.0	2	23.2	41.5	BLOCK :	ZONE :	1-1

WELL NAME : BARAM33

CUT OFF OF SW : 70.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 40.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6554.0	- 6600.0	12	26.7	43.2	BLOCK : 1 ZONE : B2
6740.0	- 6774.0	22	23.4	53.6	BLOCK : 1 ZONE : B3
7650.0	- 7670.0	8	18.9	63.6	BLOCK : 1 ZONE : E1
9112.0	- 9128.0	4	14.9	65.4	BLOCK : 1 ZONE : E2
9200.0	- 9254.0	20	15.6	54.4	BLOCK : 1 ZONE : E2
9260.0	- 9280.0	8	17.2	59.9	BLOCK : 1 ZONE : E3
9346.0	- 9544.0	104	16.1	51.4	BLOCK : 1 ZONE : F
9574.0	- 9730.0	124	16.7	46.4	BLOCK : 1 ZONE : F
9734.0	- 9766.0				BLOCK : 1 ZONE : F
9770.0	- 9822.0				BLOCK : 1 ZONE : F
9878.0	- 9934.0	32	14.7	47.2	BLOCK : 1 ZONE : G1
9938.0	- 10010.0	56	18.3	37.7	BLOCK : 1 ZONE : G1
10020.0	- 10088.0	50	19.9	34.5	BLOCK : 1 ZONE : G1
10092.0	- 10152.0	50	18.5	41.5	BLOCK : 1 ZONE : G1
10152.0	- 10170.0	12	14.4	52.7	BLOCK : 1 ZONE : G1
10174.0	- 10210.0	24	14.8	51.2	BLOCK : 1 ZONE : G1
10230.0	- 10274.0	20	14.3	48.7	BLOCK : 1 ZONE : G2
10274.0	- 10308.0	28	20.1	36.3	BLOCK : 1 ZONE : G2
10312.0	- 10324.0	10	15.7	42.2	BLOCK : 1 ZONE : G2
10324.0	- 10360.0	34	15.7	36.1	BLOCK : 1 ZONE : G2

WELL NAME : BARAM 34

CUT OFF OF SW : 70.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 40.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
10128.0 -	10140.0	2	13.3	68.9	BLOCK : 1 ZONE : E1
10202.0 -	10224.0	16	14.8	50.1	BLOCK : 1 ZONE : E2
10226.0 -	10256.0	82	13.9	47.6	BLOCK : 1 ZONE : E2
10366.0 -	10576.0	98	14.8	46.3	BLOCK : 1 ZONE : E3
10588.0 -	10742.0	22	15.8	43.3	BLOCK : 1 ZONE : F
10894.0 -	10940.0	8	13.4	42.1	BLOCK : 1 ZONE : G1
10940.0 -	10958.0	44	14.9	41.5	BLOCK : 1 ZONE : G1
10966.0 -	11018.0	44	17.6	39.0	BLOCK : 1 ZONE : G1
11048.0 -	11094.0	6	15.9	47.0	BLOCK : 1 ZONE : G1
11094.0 -	11102.0	6	11.2	57.5	BLOCK : 1 ZONE : G1
11122.0 -	11136.0	16	17.3	49.5	BLOCK : 1 ZONE : G1
11146.0 -	11168.0	10	12.5	48.2	BLOCK : 1 ZONE : G1
11214.0 -	11230.0	4	16.6	41.7	BLOCK : 1 ZONE : G1
11230.0 -	11236.0	28	14.2	40.3	BLOCK : 1 ZONE : G2
11256.0 -	11328.0	14	13.9	35.7	BLOCK : 1 ZONE : G2
11368.0 -	11384.0				

WELL NAME : BARAM35

CUT OFF OF SW : 70.00
CUT OFF OF POROSITY : 0.0
CUT OFF OF SHALE : 40.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4777.0	- 4822.0	6	25.5	57.1	OIL SHELLCODE :L

WELL NAME : BARAM 35

CUT OFF OF SW : 70.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 40.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5524.0	5532.0	6	25.3	64.3	BLOCK : 2 ZONE : A1
5530.0	5556.0	28	26.1	53.8	BLOCK : 2 ZONE : A1
5668.0	5708.0	2	26.8	65.8	BLOCK : 1-1 ZONE : 02.1
5708.0	5724.0	18	26.1	50.3	BLOCK : 1-1 ZONE : 02.1
5776.0	5830.0	22	25.0	58.5	BLOCK : 1-1 ZONE : 03.1
6046.0	6090.0	4	21.9	58.6	BLOCK : 1-1 ZONE : P1.1
6542.0	6576.0				BLOCK : 1-1 ZONE : P6.1
6590.0	6604.0				BLOCK : 1-1 ZONE : P6.1

WELL NAME : BARAM 36

CUT OFF OF SW : 70.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 40.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5560.0 -	5568.0				BLOCK : 2 ZONE : A2
5794.0 -	5802.0				BLOCK : 2 ZONE : A2
5862.0 -	5938.0	20	25.7	51.4	BLOCK : 2 ZONE : B1
6084.0 -	6148.0	24	24.5	57.9	BLOCK : 2 ZONE : B1
6178.0 -	6246.0	26	24.2	51.3	BLOCK : 2 ZONE : B2
6350.0 -	6420.0	32	24.3	53.9	BLOCK : 2 ZONE : B3
7080.0 -	7218.0	6	22.9	67.4	BLOCK : 2 ZONE : C2
7292.0 -	7350.0	10	22.1	52.8	BLOCK : 2 ZONE : C3
7350.0 -	7374.0	14	15.4	59.2	BLOCK : 2 ZONE : C3
7414.0 -	7464.0	26	23.3	51.6	BLOCK : 2 ZONE : C3
7604.0 -	7634.0	16	19.6	51.1	BLOCK : 2 ZONE : C4
7676.0 -	7686.0	8	22.3	65.0	BLOCK : 2 ZONE : C4
8058.0 -	8078.0	10	18.7	57.4	BLOCK : 2 ZONE : C4
8078.0 -	8084.0				BLOCK : 2 ZONE : C4
8120.0 -	8162.0	26	20.0	54.8	BLOCK : 2 ZONE : D1
8186.0 -	8198.0	4	19.8	54.6	BLOCK : 2 ZONE : D1
8818.0 -	8834.0	18	21.9	28.1	BLOCK : 2 ZONE : E1

WELL NAME : BARAM 37

CUT OFF OF SW : 70.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 40.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	BLOCK :	ZONE :	REMARKS
7620.0	- 7630.0	4	22.1	42.1	BLOCK :	B1	
7630.0	- 7652.0	12	21.8	51.3	BLOCK :	B1	
7888.0	- 7908.0	20	22.7	45.9	BLOCK :	B1	
7908.0	- 7962.0	18	22.3	59.4	BLOCK :	B1	
7996.0	- 8018.0	18	23.9	40.1	BLOCK :	B2	
8024.0	- 8032.0	8	21.0	52.7	BLOCK :	B2	
8094.0	- 8104.0				BLOCK :	B2	
8206.0	- 8274.0	34	22.9	51.0	BLOCK :	B3	
8654.0	- 8682.0	16	21.2	59.6	BLOCK :	C1	
8754.0	- 8840.0	34	27.6	52.2	BLOCK :	C1	
8852.0	- 8890.0	26	29.2	50.5	BLOCK :	C1	
8966.0	- 8994.0	2	20.1	60.0	BLOCK :	C2	
8994.0	- 9008.0	8	21.7	58.5	BLOCK :	C2	
9100.0	- 9108.0				BLOCK :	C2	
9124.0	- 9136.0				BLOCK :	C2	
9152.0	- 9178.0				BLOCK :	C2	
9288.0	- 9334.0	16	16.9	53.4	BLOCK :	C3	
9380.0	- 9588.0	128	20.1	39.4	BLOCK :	C3	
9630.0	- 9660.0	28	22.8	34.6	BLOCK :	C4	
9660.0	- 9704.0	44	23.6	34.9	BLOCK :	C4	
9710.0	- 9726.0	10	18.3	56.4	BLOCK :	C4	
9740.0	- 9778.0	30	19.5	59.5	BLOCK :	C4	

WELL NAME : BARAM38

CUT OFF OF SW : 70.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 40.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
7638.0	- 7674.0	8	16.2	65.4	BLOCK : 3-1 ZONE : C2
7766.0	- 7800.0	10	15.7	62.7	BLOCK : 3-1 ZONE : C2
7842.0	- 7852.0	76	19.6	40.4	BLOCK : 3-1 ZONE : C3
7882.0	- 8076.0	6	20.8	37.7	BLOCK : 3-3 ZONE : C4
8098.0	- 8106.0	56	23.7	43.3	BLOCK : 3-3 ZONE : C4
8112.0	- 8182.0	42	18.3	42.2	BLOCK : 3-3 ZONE : D1
8372.0	- 8428.0	26	18.7	45.0	BLOCK : 3-3 ZONE : D1
8442.0	- 8502.0	8	18.0	39.9	BLOCK : 3-3 ZONE : D1
8532.0	- 8540.0	30	16.5	47.0	BLOCK : 3-3 ZONE : D1
8540.0	- 8572.0	14	21.4	60.0	BLOCK : 3-3 ZONE : D1
8574.0	- 8608.0	4	15.9	66.4	BLOCK : 3-3 ZONE : D2
8690.0	- 8698.0	4	21.6	51.2	BLOCK : 3-3 ZONE : D2
8986.0	- 9012.0	20	17.1	43.1	BLOCK : 3-3 ZONE : E1
9140.0	- 9164.0	2	14.5	50.9	BLOCK : 3-3 ZONE : E1
9162.0	- 9182.0	8	10.7	64.1	BLOCK : 3-3 ZONE : E1
9238.0	- 9256.0	24	13.7	41.6	BLOCK : 3-3 ZONE : E1
9260.0	- 9286.0	12	12.4	57.2	BLOCK : 3-3 ZONE : E1
9298.0	- 9310.0	6	12.6	56.0	BLOCK : 3-3 ZONE : E2
9440.0	- 9452.0	4	13.4	59.1	BLOCK : 3-3 ZONE : E2
9474.0	- 9484.0	24	14.8	45.4	BLOCK : 3-3 ZONE : E2
9494.0	- 9528.0	30	15.5	46.8	BLOCK : 3-3 ZONE : E2
9558.0	- 9594.0	28	15.3	48.7	BLOCK : 3-3 ZONE : E2
9600.0	- 9632.0	12	14.1	47.5	BLOCK : 3-3 ZONE : E2
9644.0	- 9666.0	10	19.0	34.6	BLOCK : 3-3 ZONE : E2
9668.0	- 9678.0	198	17.1	47.7	BLOCK : 3-3 ZONE : E3
9706.0	- 10042.0				

WELL NAME : RARAM 39

CUT OFF OF SW : 70.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 40.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	BLOCK	ZONE	REMARKS
8124.0	8138.0	8	14.5	63.2	BLOCK	3-3	C2
8246.0	8274.0	30	21.0	35.5	BLOCK	3-3	C3
8326.0	8358.0	12	19.8	46.5	BLOCK	3-3	C3
8368.0	8380.0	30	17.1	51.3	BLOCK	3-3	C3
8394.0	8450.0	28	18.0	46.2	BLOCK	3-3	C4
8478.0	8532.0	28	20.3	50.8	BLOCK	3-3	C4
8540.0	8570.0	22	16.2	46.2	BLOCK	3-3	E1
9692.0	9716.0	16	15.2	56.9	BLOCK	3-3	E1
9736.0	9756.0	28	18.8	57.0	BLOCK	3-3	E1
9794.0	9828.0	26	17.1	44.1	BLOCK	3-3	E2
9974.0	10038.0	14	15.7	60.3	BLOCK	3-3	E2
10074.0	10122.0	4	15.7	59.9	BLOCK	3-3	E2
10128.0	10138.0	12	17.8	49.2	BLOCK	3-3	E2
10146.0	10158.0	122	16.4	48.7	BLOCK	3-3	E3
10186.0	10450.0						

WELL NAME : BARAM40

CUT OFF OF SW : 70.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 40.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
7826.0	7864.0	18	21.6	48.3	BLOCK : 3-3 ZONE : B3
7896.0	7914.0	6	20.9	66.5	BLOCK : 3-3 ZONE : B3
7950.0	7968.0				BLOCK : 3-3 ZONE : B3
8020.0	8054.0	22	20.9	48.1	BLOCK : 3-3 ZONE : B3
8084.0	8096.0	12	18.0	50.2	
8096.0	8140.0	24	20.8	58.5	
8216.0	8246.0	14	19.1	44.9	BLOCK : 3-3 ZONE : C1
8250.0	8286.0	24	21.2	51.7	BLOCK : 3-3 ZONE : C1
8436.0	8458.0	12	22.7	45.5	BLOCK : 3-3 ZONE : C1
8456.0	8494.0	22	22.8	57.0	BLOCK : 3-3 ZONE : C2
8524.0	8584.0	16	16.8	53.1	BLOCK : 3-3 ZONE : C2
8610.0	8646.0	12	19.1	58.4	BLOCK : 3-3 ZONE : C2
8646.0	8658.0				BLOCK : 3-3 ZONE : C2
8692.0	8706.0	6	13.6	63.3	BLOCK : 3-3 ZONE : C2
8716.0	8726.0	8	15.4	57.0	BLOCK : 3-3 ZONE : C2
8832.0	8880.0	20	13.6	53.6	BLOCK : 3-3 ZONE : C3
8934.0	8976.0	38	19.1	39.2	BLOCK : 3-3 ZONE : C3
8980.0	9010.0	24	18.5	43.0	BLOCK : 3-3 ZONE : C3
9020.0	9080.0	26	18.3	47.5	BLOCK : 3-3 ZONE : C3
9114.0	9148.0	28	21.5	39.3	BLOCK : 3-3 ZONE : C4
9148.0	9198.0	22	19.3	52.5	BLOCK : 3-3 ZONE : C4
9200.0	9246.0	26	19.4	57.5	BLOCK : 3-3 ZONE : C4
10666.0	10700.0	10	16.6	63.7	BLOCK : 3-3 ZONE : E1
10714.0	10740.0				BLOCK : 3-3 ZONE : E1
10786.0	10816.0	16	19.1	64.6	BLOCK : 3-3 ZONE : E1
10994.0	11090.0	36	14.4	56.3	BLOCK : 3-3 ZONE : E2
11122.0	11178.0	32	17.3	56.7	BLOCK : 3-3 ZONE : E2
11200.0	11222.0	20	17.0	57.1	BLOCK : 3-3 ZONE : E2

WELL NAME : BARAM40

CUT OFF OF SW : 70.00
CUT OFF OF POROSITY : 0.0
CUT OFF OF SHALE : 40.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
11260.0	- 11544.0	122	18.6	57.0	BLOCK : 3-3 ZONE : E3

WELL NAME : BAKAU 03

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
7142.0	- 7148.0	4	23.1	54.8	
7349.0	- 7403.0	42	22.2	59.1	
7462.0	- 7492.0	6	13.6	72.1	
7514.0	- 7528.0	6	18.4	59.2	
7687.0	- 7719.0	24	21.6	45.3	
7745.0	- 7757.0	12	19.8	54.9	
7784.0	- 7797.0	10	18.0	58.7	
7814.0	- 7852.0	34	22.2	47.4	
7868.0	- 7881.0	10	21.7	51.4	
7886.0	- 7921.0	20	20.4	66.7	
8217.0	- 8279.0	24	19.7	54.8	
8319.0	- 8327.0	24	13.1	49.7	
8454.0	- 8510.0	12	11.4	65.9	
8531.0	- 8614.0	2	11.4	73.5	
8605.0	- 8819.0	16	7.2	69.9	
8710.0	- 8858.0	26	10.0	65.4	
8848.0	- 9002.0	4	11.5	68.1	
8953.0	- 9313.0	4	7.4	64.6	
9225.0	- 9431.0	26	8.5	70.2	
9374.0	- 9452.0	4			
9443.0	- 9502.0	4			
9482.0	- 9592.0	26			
9579.0	- 9672.0				
9609.0	-				

GWC 8327.

WELL NAME : RAKAU 04

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
8703.0	- 8711.0	4	20.8	52.9	GAS
8733.0	- 8764.0	2	22.5	70.4	OIL
8796.0	- 8802.0	6	22.6	72.3	OIL
9017.0	- 9065.0	16	19.4	62.9	OIL
9244.0	- 9249.0				OIL
9283.0	- 9351.0	28	17.8	67.3	OIL
9655.0	- 9748.0	78	17.4	48.4	GAS
9840.0	- 9920.0	58	18.0	44.9	GAS
9940.0	- 9995.0	24	17.1	60.5	GAS
10155.0	- 10188.0	24	16.0	52.9	GAS
10217.0	- 10419.0	142	16.0	57.2	OIL?
10701.0	- 10780.0	60	15.2	52.8	GAS?
10844.0	- 10918.0	70	16.3	52.7	GAS?
11002.0	- 11025.0	22	18.3	46.9	GAS?
11108.0	- 11130.0	24	16.2	40.1	GAS?
11141.0	- 11160.0	18	16.0	47.7	GAS?
11203.0	- 11253.0	46	13.9	54.5	GAS?

GDC 8708?

OWC 8802

WELL NAME : BAKAU 05

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
7690.0 -	7698.0	4	14.8	61.5	GAS
7874.0 -	7828.0	2	14.8	78.2	GAS
8168.0 -	8174.0	6	17.5	59.4	TIGHT
8211.0 -	8218.0	2	14.5	62.4	OIL
8338.0 -	8364.0	18	13.1	65.7	OIL
8450.0 -	8458.0	2	11.0	79.0	OIL
8461.0 -	8458.0				OIL
8852.0 -	8864.0	10	17.2	55.7	OIL

WELL NAME : TIJKAU 03

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
2738.0	- 2744.0	6	24.0	46.3	OIL
2788.0	- 2812.0	22	25.3	42.6	OIL
2826.0	- 2848.0	18	26.9	37.6	
2868.0	- 2878.0	12	33.7	22.3	
2900.0	- 2924.0	20	26.2	35.8	OIL
2952.0	- 2962.0	8	21.7	46.2	OIL
2998.0	- 3004.0	6	25.4	39.3	OIL
3036.0	- 3040.0	4	26.7	31.1	OIL
3076.0	- 3084.0	8	23.5	44.9	OIL
3102.0	- 3138.0	28	30.2	33.6	OIL
3152.0	- 3206.0	30	25.3	42.1	OIL
3714.0	- 3800.0	10	22.1	49.7	OIL
3822.0	- 3848.0	22	24.1	39.1	OIL
3856.0	- 3866.0	6	26.0	41.7	OIL
4064.0	- 4084.0	2	20.1	54.6	OIL
4316.0	- 4320.0	6	21.0	42.0	OIL
4348.0	- 4408.0	14	23.2	42.5	GAS
4538.0	- 4546.0	4	27.4	41.0	OIL
5980.0	- 6090.0				OIL DWC 6090
6202.0	- 6228.0				GAS
6256.0	- 6372.0				GAS
6572.0	- 6612.0	36	16.3	44.6	GAS GOC 6612
6612.0	- 6718.0	102	17.9	43.3	OIL

WELL NAME : TUKAU 04

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)			
2849.0 -	2875.0	27.0	45.5	OIL
2899.0 -	2967.0	30.0	45.1	OIL
2979.0 -	3019.0	27.0	52.8	OIL
3032.0 -	3076.0	36.0	50.9	OIL OMC 3076
3414.0 -	3428.0			OIL
3444.0 -	3469.0			OIL
3558.0 -	3598.0	28.6	53.7	OIL
3612.0 -	3632.0	29.5	53.8	OIL
3689.0 -	3768.0			OIL
3782.0 -	3815.0	26.7	48.6	OIL
3849.0 -	3857.0	28.1	50.0	OIL
3874.0 -	4074.0	22.2	46.3	OIL
4087.0 -	4160.0	22.3	51.2	OIL
4260.0 -	4266.0	22.7	54.5	OIL
4350.0 -	4412.0	23.1	47.3	OIL
4572.0 -	4585.0			OIL
4597.0 -	4613.0			OIL
4626.0 -	4642.0	22.6	50.5	OIL
7116.0 -	7174.0	24.9	33.0	GAS

WELL NAME : TUKAUJ 05

CUT OFF OF SW : 60.00
CUT OFF OF POROSITY : 0.0
CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6584.0 - 6620.0	22	17.9	34.5	OIL

WELL NAME : TUKAU 06

CUT OFF OF SW : 60.00
CUT OFF OF POROSITY : 0.0
CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)				
1572.0 -	1784.0			OIL NOT INTERPRETATED
1802.0 -	1828.0			OIL NOT INTERPRETATED

WELL NAME : TUKAU 07

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL		NET THICKNESS	AVERAGE POROSITY	AVERAGE SATURATION	REMARKS
TOP (FT)	BASE (FT)	(FT)	(%)	(%)	
2786.0	- 2790.0	4	25.9	53.8	OIL
2798.0	- 2804.0	6	27.3	43.2	OIL
2822.0	- 2920.0	42	27.4	37.3	OIL
2944.0	- 2964.0	14	28.0	32.2	OIL
2984.0	- 3002.0	4	23.9	55.0	OIL
3008.0	- 3018.0	8	30.1	34.2	OIL
3024.0	- 3032.0	6	24.8	42.9	OIL
3114.0	- 3128.0	14	29.6	29.4	OIL
3150.0	- 3120.0				OIL

WELL NAME : TUIKAU 08

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL		NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)				
2878.0	2901.0	18	24.5	37.0	OIL
2931.0	2939.0	8	28.4	30.7	OIL
2979.0	2983.0	4	17.6	58.3	OIL
3009.0	3027.0	16	27.7	45.5	OIL
3071.0	3075.0	2	24.5	49.8	OIL
4055.0	4065.0	6	16.7	52.4	OIL
4092.0	4094.0				OIL
4150.0	4193.0	32	15.5	50.3	OIL
4395.0	4418.0	4	19.5	54.9	OIL

WELL NAME : TUKAU 09

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
2750.0	2780.0	12	23.4	41.8	OIL
2802.0	2828.0	16	27.6	29.8	GAS
2855.0	2865.0	6	21.1	48.2	OIL
2870.0	2885.0	10	26.6	28.9	GAS
2888.0	2896.0				OIL
2940.0	2945.0	2	24.9	39.7	OIL
2986.0	3000.0	12	26.5	30.0	OIL
3028.0	3100.0	28	24.2	42.1	OIL
3234.0	3238.0	2	19.9	59.7	OIL
3302.0	3330.0	8	24.5	43.3	OIL
3492.0	3500.0	4	21.4	52.6	OIL
3514.0	3522.0				OIL
3548.0	3555.0	6	24.9	39.7	OIL
3630.0	3642.0	10	29.0	23.4	OIL
3776.0	3786.0	8	21.2	40.9	OIL
3846.0	3854.0	4	24.3	42.5	GAS
3884.0	3920.0	4	16.7	53.3	OIL
4008.0	4018.0				OIL
4035.0	4040.0	2	26.3	36.8	GAS
4046.0	4080.0				OIL
4108.0	4114.0	4	18.3	50.3	GAS
4120.0	4146.0	16	17.8	44.2	GAS
4158.0	4172.0	8	19.4	44.1	GAS
4182.0	4222.0	8	22.6	38.2	GAS
4258.0	4274.0				OIL
4292.0	4331.0	8	20.9	38.3	OIL
4358.0	4414.0	34	16.8	44.5	GAS
4427.0	4444.0	2	16.5	56.7	GAS

WELL NAME : TUKAU 09

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4468.0 -	4500.0	8	25.0	33.4	GAS
4586.0 -	4600.0				OIL
4626.0 -	4636.0	4	18.6	44.3	OIL
4656.0 -	4664.0	6	17.6	44.8	OIL
4696.0 -	4722.0	8	18.8	47.9	OIL
4754.0 -	4762.0	2	15.3	58.9	OIL
4768.0 -	4777.0	6	21.5	45.2	OIL
4786.0 -	4798.0	12	25.5	45.9	OIL
5730.0 -	5762.0	26	23.3	42.3	OIL

WELL NAME : TUKAU 10

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
2901.0	- 2916.0	12	31.4	36.0	OIL
2946.0	- 2976.0	18	27.7	39.6	OIL
3092.0	- 3106.0	10	33.3	31.7	OIL
3522.0	- 3536.0	8	29.4	51.4	OIL
3700.0	- 3710.0	8	29.0	46.7	OIL
3940.0	- 3946.0	4	27.6	57.2	OIL
4006.0	- 4022.0	2	31.9	44.8	OIL
4177.0	- 4196.0	12	24.4	47.5	OIL
4212.0	- 4260.0	8	26.3	56.7	OIL
4290.0	- 4296.0	2	23.3	53.1	OIL
4304.0	- 4334.0	14	24.3	49.2	OIL
4460.0	- 4465.0	4	28.3	45.1	OIL
4558.0	- 4614.0	10	23.5	49.2	OIL
4828.0	- 4848.0	2	24.5	56.3	OIL

WELL NAME : TUKAU 11

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
2764.0 -	2776.0	10	27.7	32.1	OIL
2802.0 -	2832.0	16	27.8	36.4	OIL
2928.0 -	2940.0	10	29.1	29.4	OIL
2994.0 -	3004.0				OIL
3308.0 -	3322.0				OIL
3358.0 -	3364.0				OIL
3380.0 -	3384.0	2	18.3	51.7	OIL
3404.0 -	3414.0	4	20.6	55.6	OIL

WELL NAME : TUKAU 17

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)			
3296.0 -	3304.0	8	30.1	GAS GOC 3304
3304.0 -	3332.0	28	28.9	OIL
3352.0 -	3372.0	20	28.0	OIL
3408.0 -	3440.0	20	28.7	GAS
3482.0 -	3520.0	22	28.0	GAS
3656.0 -	3674.0	18	30.6	OIL
3714.0 -	3774.0	38	25.1	GAS
3782.0 -	3792.0	10	28.8	GAS
3816.0 -	3822.0	6	29.7	OIL
3960.0 -	3978.0	18	26.2	OIL
4364.0 -	4374.0	8	23.8	OIL
4384.0 -	4398.0	8	24.1	OIL
4426.0 -	4436.0	8	24.1	OIL
4496.0 -	4520.0	18	25.9	GAS
4600.0 -	4612.0	12	26.7	OIL
4984.0 -	4996.0	10	22.0	OIL
5006.0 -	5014.0	10	21.7	OIL
5060.0 -	5084.0	12	22.5	OIL
5100.0 -	5110.0	8	18.9	OIL
5376.0 -	5410.0	28	19.5	OIL
5450.0 -	5462.0	12	20.3	OIL
5766.0 -	5772.0	8	26.7	OIL
5864.0 -	5900.0			OIL
5962.0 -	6004.0			OIL

WELL NAME : TUKAU 18

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
2818.0 - 2836.0	10	23.0	37.7	GAS
2860.0 - 2870.0				GAS
2876.0 - 2890.0	10	24.1	33.2	OIL
2996.0 - 3014.0	12	27.3	34.1	GAS
3046.0 - 3090.0				OIL
3222.0 - 3226.0				OIL
3440.0 - 3452.0				OIL
3464.0 - 3474.0	4	23.6	37.7	OIL
3558.0 - 3566.0	6	22.2	44.0	OIL
3776.0 - 3782.0				OIL
3836.0 - 3850.0	4	20.5	52.2	OIL
3994.0 - 4018.0	6	21.9	50.4	GAS
4023.0 - 4038.0				GAS
4046.0 - 4050.0	4	15.9	55.4	OIL
4060.0 - 4064.0				OIL
4076.0 - 4080.0	2	23.2	44.8	GAS
4106.0 - 4134.0	20	21.7	39.7	GAS
4142.0 - 4160.0	4	17.7	48.5	OIL
4248.0 - 4254.0	6	20.6	55.1	GAS
4286.0 - 4294.0				OIL
4334.0 - 4366.0	12	22.6	44.7	GAS
4374.0 - 4392.0	6	21.3	37.6	OIL

WELL NAME : TUKAU 19

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL		NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (ET)	BASE (ET)				
3352.0	3360.0	8	27.9	45.5	OIL
3530.0	3546.0	14	32.2	26.9	GAS
3588.0	3594.0	6	33.7	18.6	GAS
3594.0	3600.0	6	31.8	18.3	GAS
3610.0	3628.0	14	24.1	39.8	OIL
3660.0	3668.0	6	21.6	51.0	OIL
3712.0	3720.0	4	23.1	49.7	OIL
3734.0	3764.0	12	20.9	50.7	OIL
3776.0	3796.0	18	28.6	28.7	OIL
3848.0	3912.0	28	22.0	48.3	OIL
3928.0	3938.0	6	30.7	33.6	OIL
3986.0	4002.0	12	30.4	32.9	OIL

WELL NAME : TUKAU 20

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT.)	INTERVAL BASE (FT.)	NET THICKNESS (FT.)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
2452.0	- 2476.0				GAS
3136.0	- 3140.0				GAS
3168.0	- 3204.0	14	21.5	48.7	GAS
3218.0	- 3236.0	16	28.8	34.3	GAS
3264.0	- 3278.0	4	28.6	50.1	OIL OMC 3278
3314.0	- 3354.0	12	25.1	38.3	GAS
3374.0	- 3412.0	10	22.5	51.8	GAS
3462.0	- 3474.0	2	19.1	55.8	OIL?
3514.0	- 3532.0	10	24.7	38.5	OIL?
3558.0	- 3624.0	24	22.7	47.0	OIL?
3640.0	- 3714.0	10	24.3	52.0	OIL?
3754.0	- 3770.0	4	23.5	53.9	OIL?
3778.0	- 3786.0				OIL?
3800.0	- 3808.0				GAS
3878.0	- 3924.0	4	26.8	48.7	GAS
4060.0	- 4094.0	14	20.8	47.6	GAS
4114.0	- 4124.0	8	20.5	50.9	GAS
4180.0	- 4198.0	8	26.1	39.9	GAS
4286.0	- 4298.0	6	23.8	46.3	GAS
4476.0	- 4480.0	4	20.8	48.2	GAS
4698.0	- 4708.0				OIL
4726.0	- 4730.0	2	22.1	53.6	OIL
4762.0	- 4776.0	8	17.2	46.7	GAS
4784.0	- 4832.0	36	16.7	41.4	OIL
4848.0	- 4854.0	4	22.4	38.5	OIL
4900.0	- 4914.0	8	16.1	50.5	OIL
5080.0	- 5098.0				OIL
5150.0	- 5182.0	24	14.8	45.1	OIL

WELL NAME : TUKAU 21

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
3016.0 -	3032.0	8	30.6	43.9	OIL
3068.0 -	3104.0	10	25.6	49.3	OIL
4560.0 -	4570.0	8	23.6	46.7	OIL
4676.0 -	4712.0	4	22.7	53.8	OIL
4947.0 -	4992.0				OIL
8454.0 -	8484.0	4	19.7	49.7	OIL

WELL NAME : TUKAU 22

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
-	2954.0	2960.0	2	27.4	53.7	OIL
-	2968.0	2973.0	4	30.5	35.6	OIL
-	3016.0	3024.0	4	25.5	53.1	OIL
-	3042.0	3046.0	2	26.5	45.2	OIL
-	3210.0	3253.0	4	27.5	47.5	OIL
-	3842.0	3852.0	10	25.6	37.8	OIL
-	4492.0	4524.0	2	19.6	58.5	OIL
-	4574.0	4584.0				OIL
-	4682.0	4752.0	20	23.9	37.9	OIL
-	4938.0	4946.0	2	17.5	58.5	OIL
-	5091.0	5184.0	8	20.4	52.1	OIL

WELL NAME : TUKAU 23

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL		NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)				
2944.0	- 2952.0	6	35.1	37.4	OIL
2988.0	- 3020.0	22	33.0	38.3	OIL
3044.0	- 3050.0	4	31.0	47.2	OIL
3080.0	- 3086.0	4	32.0	46.6	OIL
3098.0	- 3100.0				OIL
3110.0	- 3112.0				OIL
3564.0	- 3582.0	2	31.9	43.9	OIL
4226.0	- 4350.0	8	23.7	44.4	OIL
4358.0	- 4388.0	6	24.0	56.1	OIL
4614.0	- 4720.0				OIL
4810.0	- 1815.0				OIL

WELL NAME : TUKAU 24

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT.)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)			
2914.0	2920.0	30.7	42.1	OIL
2926.0	2950.0	28.3	45.3	OIL
2972.0	3006.0	28.1	44.8	OIL
3070.0	3078.0	28.4	54.9	OIL
3107.0	3118.0	28.4	53.5	OIL
3128.0	3132.0			OIL
3162.0	3206.0	30.0	53.9	OIL OWC 3206
6784.0	3818.0			OIL
4156.0	5170.0			OIL
4354.0	4366.0			OIL
4500.0	4619.0			OIL
4690.0	4700.0			OIL
4808.0	4876.0			OIL
5160.0	5176.0			OIL

WELL NAME : TUKAU 25

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
3206.0 -	3228.0	14	28.5	39.3	OIL
3268.0 -	6284.0	66	28.3	36.0	OIL
3260.0 -	3300.0				OIL
3306.0 -	3322.0				OIL
3408.0 -	3426.0				OIL
3486.0 -	3516.0				OIL

WELL NAME : TUKAU 26

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
3056.0	-	3060.0				OIL
3056.0	-	3071.0				OIL
3103.0	-	3110.0	2	21.6	54.1	OIL
3116.0	-	3136.0	16	28.1	40.1	OIL
3168.0	-	3178.0	8	28.7	29.6	OIL
3184.0	-	3196.0	6	23.4	46.6	OIL
3204.0	-	3208.0	2	22.3	53.6	OIL
3212.0	-	3220.0				OIL
3226.0	-	3258.0				OIL
3270.0	-	3284.0	2	25.5	53.3	OIL
3314.0	-	3322.0				OIL
3332.0	-	3346.0	4	30.5	37.4	OIL
3378.0	-	3444.0	22	25.8	50.1	OIL
3834.0	-	3838.0				OIL
3908.0	-	3940.0	16	23.8	54.1	OIL
3962.0	-	3970.0	6	30.6	40.1	OIL
4024.0	-	4080.0	14	28.8	41.7	OIL
4116.0	-	4124.0	4	27.7	41.4	OIL
4140.0	-	4166.0	4	25.8	51.7	OIL

WELL NAME : TUKAU 27

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL		NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)				
2888.0	- 2896.0	8	28.2	34.1	OIL
2928.0	- 2936.0	8	30.0	26.4	OIL
2954.0	- 2968.0	10	26.6	40.2	OIL
2982.0	- 2992.0	2	22.6	56.0	OIL
2998.0	- 3004.0				OIL
3015.0	- 3026.0	6	26.0	53.6	OIL
3486.0	- 3500.0	2	22.3	50.9	OIL
4118.0	- 4130.0	10	22.1	43.3	OIL
4224.0	- 4230.0				OIL
4238.0	- 4268.0	8	19.4	52.6	OIL

WELL NAME : TUKAU 28

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)			
2898.0 -	2910.0	26.0	33.7	OIL
2942.0 -	2954.0	26.3	24.4	OIL
2960.0 -	2966.0			OIL
2972.0 -	2990.0	24.5	36.3	OIL
3000.0 -	3012.0			OIL
3092.0 -	3108.0	27.2	37.6	OIL
3548.0 -	3552.0			OIL
3705.0 -	3758.0	21.7	57.1	OIL
3968.0 -	3974.0	21.7	48.9	OIL
4040.0 -	4054.0			OIL
4218.0 -	4246.0	17.0	46.4	OIL
4256.0 -	4304.0			OIL
4330.0 -	4340.0			OIL
4350.0 -	4382.0	16.4	51.2	OIL
4392.0 -	4408.0			OIL
4512.0 -	4516.0			OIL
4544.0 -	4556.0			OIL
4573.0 -	4580.0			OIL
4604.0 -	4714.0	8.1	52.4	OIL
4788.0 -	5004.0			OIL

WELL NAME : TUKAU 29

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
2833.0 -	2836.0				OIL
2844.0 -	2866.0	10	25.5	46.2	OIL
2885.0 -	2892.0	4	25.3	41.4	OIL
2898.0 -	2906.0	2	25.6	36.0	OIL
2912.0 -	2960.0	2	22.2	52.9	OIL
2968.0 -	2980.0				OIL
3018.0 -	3028.0	6	26.4	48.9	OIL
3420.0 -	3426.0				TIGHT
3450.0 -	3458.0				OIL
3472.0 -	3498.0	4	27.1	50.3	OIL OWC 3498
3544.0 -	3554.0				OIL
3566.0 -	3614.0	2	27.8	46.9	OIL
3624.0 -	3682.0				OIL
3706.0 -	3882.0	2	29.6	55.8	OIL
3896.0 -	3948.0				OIL
4032.0 -	4044.0	6	19.3	50.0	GAS GOC 4044
4044.0 -	4106.0				OIL
4114.0 -	4122.0				OIL
4134.0 -	4140.0				OIL
4146.0 -	4258.0	6	21.1	49.6	OIL
4274.0 -	4280.0				OIL
4246.0 -	4348.0				OIL
4380.0 -	4520.0	6	21.0	42.8	OIL
5600.0 -	5614.0	8	16.4	46.4	OIL
5638.0 -	5674.0	8	19.4	53.1	OIL
5716.0 -	5726.0				OIL OWC 5726
5818.0 -	5844.0	22	20.0	37.8	GAS
5918.0 -	5942.0	12	17.6	44.0	OIL

WELL NAME : TUKAU 29

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6146.0 -	6158.0	14	20.0	36.8	GAS GDC 6158
6158.0 -	6164.0	4	23.6	45.8	OIL OWC 6164
6316.0 -	6324.0	4	19.8	37.4	OIL
6366.0 -	6372.0	6	19.6	43.0	GAS GDC 6372
6372.0 -	6418.0	18	18.0	53.7	
6508.0 -	6548.0	40	17.2	37.2	
6586.0 -	6594.0	6	18.3	44.3	OIL
6512.0 -	6522.0				OIL OWC 6522
6770.0 -	6738.0				GAS GDC 6738
6738.0 -	6748.0				OIL OWC 6748
6836.0 -	6852.0	10	12.6	50.2	GAS GDC 6852
6852.0 -	6918.0	16	16.6	45.5	OIL
6996.0 -	7020.0				OIL
7080.0 -	7100.0	8	13.0	52.1	OIL
7230.0 -	7266.0	18	10.1	47.4	

LOG INTERPRETATION RESULTS

- BETTY 1 -

INTERVAL	NET SAND	AVERAGE ϕ	AVERAGE S_w	REMARKS
7559 - 7668	94	21.39	40.33	Oil a ₁ 7668 O/W
7786 - 7892	0	-	-	Oil a ₂
7892 - 8008	42	18.49	50.84	Oil a ₃ 8008 O/W
8100 - 8245	16	17.84	47.58	G & C b ₁
8290 - 8375	10	14.89	44.53	Oil b ₂ 8375 O/W
8580 - 8670	66	17.63	36.80	G & C
8865 - 8915	4	18.86	39.80	

LOG INTERPRETATION RESULTS

- BETTY 3 -

INTERVAL	NET SAND	AVERAGE ϕ	AVERAGE Sw	REMARKS
8066 - 8098	10	16.17	74.18	
8205 - 8220	2	20.84	69.45	GWC 8220
8453 - 8490	36	20.54	64.79	GWC 8490
8556 - 8560	0	-	-	GOC 8560
8560 - 8570	8	13.01	68.55	
8590 - 8634	6	19.16	56.64	

WELL NAME : BOKOR - 2

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL		NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)				
2218.0	2232.0	8	22.3	47.2	
2272.0	2300.0	20	22.2	42.6	BOKOR - 2
2378.0	2420.0	20	23.7	66.8	BOKOR - 2
2510.0	2534.0	8	24.1	60.9	BOKOR - 2
2534.0	2566.0	28	30.1	40.5	BOKOR - 2
2854.0	2896.0	8	22.8	73.7	BOKOR - 2
3048.0	3054.0	2	20.5	67.4	
3080.0	3110.0	14	22.4	55.5	
3580.0	3600.0	6	21.7	57.2	
3608.0	3620.0	6	19.5	66.8	
3662.0	3693.0	4	18.6	62.8	
3702.0	3712.0	6	18.0	73.1	

WELL NAME : BOKOR03

CUT OFF OF SW : 80.00
CUT OFF OF POROSITY : 0.0
CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
2800.0	- 2814.0	10	25.9	70.2	BOKOR - 3
3306.0	- 3398.0	16	22.7	56.2	BOKOR - 3
3412.0	- 3474.0	34	23.9	62.4	BOKOR - 03
3528.0	- 3560.0	26	22.0	48.3	BOKOR - 03
3598.0	- 3702.0	40	20.6	58.1	BOKOR - 03
4220.0	- 4340.0	42	21.6	63.5	BOKOR - 03
4428.0	- 4476.0	12	23.7	57.2	BOKOR - 3
4724.0	- 4790.0	4	23.9	63.3	BOKOR - 3
5090.0	- 5132.0	6	24.9	51.4	BOKOR - 3

LOG INTERPRETATION RESULT TEMANA FIELD

WELL NAME : TEMANA 02

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5257.0	5277.0	18	20.9	58.1	

LOG INTERPRETATION RESULT TEMANA FIELD

WELL NAME : TEMANA 03

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)				
1900.0 -	1965.0			
2200.0 -	2216.0			

LOG INTERPRETATION RESULT TEMANA FIELD

WELL NAME : TEMANA_04

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
1991.0	- 2002.0	6	28.6	68.2	GAS
2023.0	- 2026.0				GAS
2096.0	- 2114.0	4	20.1	69.9	GAS
2168.0	- 2199.0	14	20.6	58.0	GAS
2218.0	- 2282.0	52	23.7	46.1	GAS
2286.0	- 2300.0	2	15.3	71.6	GAS
2383.0	- 2394.0				GAS
2448.0	- 2472.0	4	22.3	70.9	GAS
2597.0	- 2603.0				GAS
2638.0	- 2662.0	2	16.0	78.8	GAS
2680.0	- 2684.0	2	28.0	50.7	GAS
2770.0	- 2780.0	10	25.7	45.6	GAS
2793.0	- 2795.0				GAS
2862.0	- 2890.0	16	17.5	60.8	GAS
2904.0	- 2942.0	4	19.4	56.9	GAS
2969.0	- 2976.0	2	16.6	61.4	GAS
2993.0	- 3005.0	2	14.9	68.4	GAS
3032.0	- 3054.0				GAS
3084.0	- 3094.0	4	17.7	79.5	GAS
3120.0	- 3218.0	2	14.3	78.0	OIL
3301.0	- 3305.0				OIL
3374.0	- 3404.0				OIL
4716.0	- 4760.0	24	16.2	69.1	OIL

LOG INTERPRETATION RESULT TEMANA FIELD

WELL NAME : TEMANA 05

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)	BASE (FT)			
2022.0 -	2120.0	33.1	23.6	OIL
2138.0 -	2170.0			OIL
2677.0 -	2692.0	26.6	66.3	OIL
4050.0 -	4056.0			OIL
4576.0 -	4584.0	25.8	37.2	OIL
4846.0 -	4850.0			OIL
4962.0 -	4968.0			GAS
5158.0 -	5164.0			OIL
5508.0 -	5526.0			OIL
5584.0 -	5663.0			OIL
5822.0 -	5828.0	25.3	52.9	GAS
6180.0 -	6194.0	22.2	49.1	GAS
6216.0 -	6236.0	19.4	58.6	GAS
6350.0 -	6392.0			OIL

LOG INTERPRETATION RESULT TEMANA FIELD

WELL NAME : TEMANA 06

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
1883.0 -	1906.0	4	21.8	68.3	OIL
2158.0 -	2184.0				OIL

LOG INTERPRETATION RESULT TEMANA FIELD

WELL NAME : TEMANA 07

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
0.0 -	0.0				NO HYDROCARBON

LOG INTERPRETATION RESULT TEMANA FIELD

WELL NAME : TEMANA 08

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
0.0	-	0.0			NO HYDROCARBON

LOG INTERPRETATION RESULT TEMANA FIELD

WELL NAME : TEMANA 09

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
1807.0	- 1822.0	14	35.9	47.6	OIL
2087.0	- 2093.0	4	32.1	44.1	OIL
2126.0	- 2166.0	38	40.1	26.3	GAS
2174.0	- 2220.0	44	32.9	52.6	OIL

LOG INTERPRETATION RESULT TEMANA FIELD

WELL NAME : TEMANA 10

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
1770.0 -	1782.0	2	25.7	69.7	?
1790.0 -	1816.0	26	34.2	31.7	OIL
2126.0 -	2166.0	40	34.9	17.0	GAS
2287.0 -	2294.0				GAS
2298.0 -	2324.0	18	24.2	40.6	OIL
2424.0 -	2432.0	4	24.0	47.8	?
2632.0 -	2680.0	28	21.7	42.0	OIL
2692.0 -	2704.0	6	15.8	52.9	OIL
2978.0 -	2994.0	16	28.2	22.0	GAS GOC 2994
2994.0 -	3036.0	38	24.6	28.1	OIL
3092.0 -	3114.0	20	33.4	10.0	GAS
3298.0 -	3308.0	2	24.5	26.4	GAS
3311.0 -	3322.0	10	24.3	26.5	OIL
3558.0 -	3564.0	4	23.3	60.5	GAS
3584.0 -	3602.0	6	25.7	41.0	GAS
3618.0 -	3626.0	6	23.7	48.3	GAS
3636.0 -	3658.0	20	22.0	56.0	GAS
3672.0 -	3684.0	12	23.2	61.2	OIL
4024.0 -	4062.0	8	14.9	71.7	?
4404.0 -	4476.0	46	27.2	33.3	GAS
4496.0 -	4527.0	30	21.6	52.6	GAS

WELL NAME : SIWA 4

CUT OFF OF SW : 80.00
 CUT OFF OF POROSITY : 0.0
 CUT OFF OF SHALE : 50.00

TOP (FT)	INTERVAL BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
1388.0	- 1396.0	4	31.4	51.6	GAS
1404.0	- 1407.0				OIL?
1426.0	- 1440.0	6	21.9	69.3	OIL?
1892.0	- 1902.0	6	31.4	41.1	GAS
1914.0	- 1918.0	6	30.7	47.8	GAS
1927.0	- 1944.0	6	22.0	65.7	GAS
1950.0	- 1966.0	6	21.7	61.2	GAS
1988.0	- 1994.0	2	29.9	43.0	OIL
2918.0	- 1854.0				OIL
3059.0	- 3068.0				OIL
3758.0	- 3778.0	4	25.6	70.2	OIL
4011.0	- 4025.0				OIL
4310.0	- 4329.0				OIL
4383.0	- 4470.0				OIL
4546.0	- 4615.0				OIL
4662.0	- 4758.0				OIL
5391.0	- 5402.0				OIL
5406.0	- 5431.0				OIL
5460.0	- 5472.0				OIL
6681.0	- 6701.0				OIL
		32	22.9	46.5	GAS
		72	23.1	45.8	GAS
		12	19.3	49.1	GAS
		24	16.4	59.3	OIL
		2	18.4	61.1	OIL
		12	16.3	64.1	GAS

WELL NAME : CENTRAL LUCONIA B12-1X 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
10676.0 -	11375.0	248	13.6	11.4	GAS GWC 11375

WELL NAME : CENTRAL LUCONIA E6-1X 'CARBONATES' 01

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5375.0	5944.0	510	22.0	2.8	GAS
5944.0	6050.0	98	18.6	17.4	OIL
					GOC 5944
					OWC 6050

WELL NAME : CENTRAL LUCONIA E8-1X 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	GAS	REMARKS
4655.0	5734.0	862	20.0	6.0		GWC 5734.

WELL NAME : CENTRAL LUCONIA E8-2 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
TOP (FT)				
BASE (FT)				
4680.0 - 5734.0	776	19.6	5.7	GAS GWC 5734.

WELL NAME : CENTRAL LUCONIA E11-1X 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL	TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4856.0 - 6520.0			1214	21.1	4.1	GAS GWC 6520

WELL NAME : CENTRAL LUCONIA E11-2 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5590.0	6520.0	606	18.5	12.4	GAS GWC 6520

WELL NAME : CENTRAL LUCONIA : F4-1X 'CARBONATES'

CUT OFF OF SW : 60.00
CUT OFF OF POROSITY : 10.00
CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4305.0 -	4528.0	182	26.9	11.0	GAS GWC 4528

WELL NAME : CENTRAL LUCONIA F6-1X 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
3636.0 -	4448.0	706	25.1	10.6	GAS GWC 4448

WELL NAME : CENTRAL LUCONIA F6-2 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4149.0	4448.0	240	21.7	28.3	GAS GWC 4448

WELL NAME : CENTRAL LUCONIA F9-1X 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4416.0	4648.0	68	14.4	22.2	GAS GWC 4648

WELL NAME : CENTRAL LUCONIA F13-1X 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6339.0	6538.0	140	22.0	27.4	GAS GWC 6538

WELL NAME : CENTRAL LUCONIA F22-1X 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6439.0	7276.0	632	18.2	12.1	GAS GWC 7276

WELL NAME : CENTRAL LUCONIA F23-1 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
3941.0	5004.0	1008	25.4	7.7	GAS GWC 5004

WELL NAME : CENTRAL LUCONIA K4-1X 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4118.0 -	4356.0	236	28.3	3.2	GAS GWC 4356

WELL NAME : CENTRAL LUCONIA M1-IX 'CARBONATE'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
4806.0 -	5065.0	116	35.5	10.6	GAS GOC 5065
5065.0 -	5086.0	20	40.0	19.3	OIL OWC 5086

WELL NAME : CENTRAL LUCONIA M3-1X 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
5652.0	6044.0	230	18.4	2.0	

WELL NAME : CENTRAL LUCONIA #5-1X 'CARBONATES'

CUT OFF OF SW : 60.00
 CUT OFF OF POROSITY : 10.00
 CUT OFF OF SHALE : 60.00

INTERVAL TOP (FT)	BASE (FT)	NET THICKNESS (FT)	AVERAGE POROSITY (%)	AVERAGE SATURATION (%)	REMARKS
6468.0	6770.0	136	18.9	17.8	

