



Joshua R. Austin

Petroleum Geologist

report for
RAMA Operating CO., Inc



COMPANY: RAMA Operating Company, Inc.

LEASE: Knop #7-30

FIELD: Chase-Silica

LOCATION: Ne-Ne-SW (2310' & 2310')

SEC: 30 **TWSP:** 19s **RGE:** 10w

COUNTY: Rice **STATE:** Kansas

KB: 1778' **GL:** 1769'

API # 15-159-22775-00-00

CONTRACTOR: Sterling Drilling (rig #4)

Spud: 04/18/2014 **Comp:** 04/27/2014

RTD: 3700' **LTD:** 3695'

Mud Up: 2600' **Type Mud:** Chemical was displaced

Samples Saved From: 2700'-RTD

Drilling Time Kept From: 2700' - RTD

Samples Examined From: 2700' - RTD

Geological Supervision From: 2785' to RTD

Geologist on Well: Josh Austin

Surface Casing: 8 5/8" @ 372'

Production Casing: 5 1/2" @ 3394'

Electronic Surveys: By Pioneer Energy Services

NOTES

On the basis of the positive structural position, drill stem test and and after evaluating the electric logs it was recommended by all parties involved in the Knop #7-30 to run 5 1/2" casing to further test the Arbuckle and Lansing zones and converting the well to a saltwater disposal well if the zones are nonproductive.

RAMA Operating Co., Inc.
well comparison sheet

DRILLING WELL

COMPARISON WELL

COMPARISON WELL

Knop 7-30

Gatton 1-30

Roth 1

1778 KB					1780 KB				Structural Relationship		1769 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log		
Heebner	2871	-1093	2865	-1087	2879	-1099	6	12	2868	-1099	6	12		
Douglas	2904	-1126	2898	-1120	2911	-1131	5	11						
Brown Lime	2993	-1215	2986	-1208	2998	-1218	3	10	2989	-1220	5	12		
Lansing	3017	-1239	3010	-1232	3026	-1246	7	14	3013	-1244	5	12		
Arbuckle	3299	-1521	3291	-1513	3307	-1527	6	14	3319	-1550	29	37		
Total Depth	3700	-1922	3695	-1917	3410	-1630			3283	-1514				



DIAMOND TESTING
 P.O. Box 157
 HOISINGTON, KANSAS 67544
 (800) 542-7313
DRILL-STEM TEST TICKET
 FILE: STCKnop7-30dst1

TIME ON: 15:00:00 4/24/2014
 TIME OFF: 21:00:00 4/24/2014

Company RAMA OPER. CO. INC Lease & Well No. KNOP 7-30
 Contractor STERLING DRILLING RIG 4 Charge to RAMA OPER. CO. INC.
 Elevation 1778 K.B Formation LANSING "F" Effective Pay _____ Ft. Ticket No. J3224
 Date 4/24/14 Sec. 30 Twp. _____ 19 S Range 10 W County RICE State KANSAS
 Test Approved By JOSH AUSTIN Diamond Representative JOHN RIEDL

Formation Test No. 1 Interval Tested from 3092 ft. to 3113 ft. Total Depth 3113 ft.
 Packer Depth 3087 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
 Packer Depth 3092 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

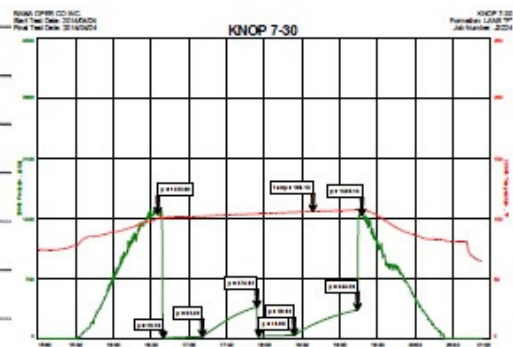
Depth of Selective Zone Set _____
 Top Recorder Depth (Inside) 3095 ft. Recorder Number 30046 Cap. 6000 P.S.I.
 Bottom Recorder Depth (Outside) 3110 ft. Recorder Number 13498 Cap. 4000 P.S.I.
 Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type CHEMICAL Viscosity 58 Drill Collar Length 210 ft. I.D. 2 1/4 in
 Weight 8.8 Water Loss 7.2 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in
 Chlorides 1,000 P.P.M. Drill Pipe Length 2862 ft. I.D. 3 1/2 in
 Jars: Make STERLING Serial Number NOT REQUESTED Test Tool Length 20 ft. Tool Size 3 1/2-IF in
 Did Well Flow? NO Reversed Out NO Anchor Length 21 ft. Size 4 1/2-FH in
 Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in

Blow: 1st Open: STRONG (B.O.B 9 MIN.) **NO BB**
 2nd Open: STRONG (B.O.B 25 MIN.) **NO BB**

Recovered 420 ft. of GIP
 Recovered 100 ft. of SLGCM WITHOIL SPECKS (10%GAS 90%MUD)
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____

Remarks: TOTAL FLUID REC:100' (100' IN DRILL COLLARS)
TOOLSAMPLE GRINDOUT: (100%MUD)



Time Set Packer(s) 4:40 P.M. A.M. Time Started Off Bottom 7:10 P.M. P.M. Maximum Temperature 106

Initial Hydrostatic Pressure..... (A) 1455 P.S.I.
 Initial Flow Period..... Minutes 30 (B) 19 P.S.I. to (C) 36 P.S.I.
 Initial Closed In Period..... Minutes 45 (D) 375 P.S.I.
 Final Flow Period..... Minutes 30 (E) 39 P.S.I. to (F) 51 P.S.I.
 Final Closed In Period..... Minutes 45 (G) 344 P.S.I.
 Final Hydrostatic Pressure..... (H) 1440 P.S.I.



DIAMOND TESTING
 P.O. Box 157
HOISINGTON, KANSAS 67544
 (800) 542-7313
DRILL-STEM TEST TICKET
 FILE: STCKnop7-30dst2

TIME ON: 14:30:00 4/25/2014
 TIME OFF: 20:50:00 4/25/2014

Company RAMA OPER. CO. INC Lease & Well No. KNOP 7-30
 Contractor STERLING DRILLING RIG 4 Charge to RAMA OPER. CO. INC.
 Elevation 1778 K.B Formation ARUCKLE" Effective Pay _____ Ft. Ticket No. J3225
 Date 4/25/14 Sec. 30 Twp. 19 S Range 10 W County RICE State KANSAS
 Test Approved By JOSH AUSTIN Diamond Representative JOHN RIEDL

Formation Test No. 2 Interval Tested from 3255 ft. to 3307 ft. Total Depth 3307 ft.
 Packer Depth 3250 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
 Packer Depth 3255 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

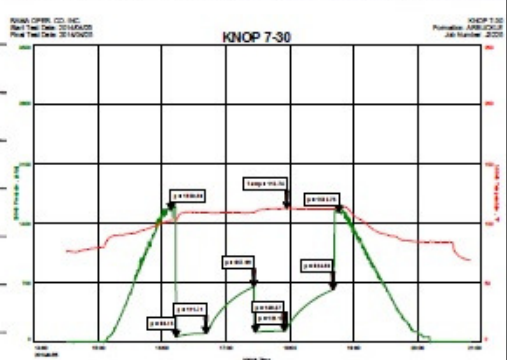
Depth of Selective Zone Set _____
 Top Recorder Depth (Inside) 3258 ft. Recorder Number 30046 Cap. 6000 P.S.I.
 Bottom Recorder Depth (Outside) 3304 ft. Recorder Number 13498 Cap. 4000 P.S.I.
 Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type CHEMICAL Viscosity 48 Drill Collar Length 210 ft. I.D. 2 1/4 in.
 Weight 9.5 Water Loss 9.1 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.
 Chlorides 3,000 P.P.M. Drill Pipe Length 3025 ft. I.D. 3 1/2 in.
 Jars: Make STERLING Serial Number NOT REQUESTED Test Tool Length 20 ft. Tool Size 3 1/2-IF in.
 Did Well Flow? NO Reversed Out NO Anchor Length 52 ft. Size 4 1/2-FH in.
 Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: STRONG (B.O.B 15 MIN.) WK BB (1")
 2nd Open: STRONG (B.O.B 20 MIN.) WK BB(1")

Recovered 250 ft. of GIP
 Recovered 50 ft. of GOM(30%GAS 35%OIL 35%MUD)
 Recovered 190 ft. of G+OCWM (10%GAS 25%OIL 30%WATER35%MUD)
 Recovered 120 ft. of SLO+GCW(%GAS 5%OIL 90%WATER)
 Recovered _____ ft. of CHLORIDES 12,000 pPM
 Recovered _____ ft. of _____


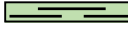



Remarks: TOTAL FLUID REC:360'
TOOLSAMPLE GRINDOUT: (5%OIL 95%)



Time Set Packer(s) 4:10 P.M. A.M. Time Started Off Bottom 6:40 P.M. P.M. Maximum Temperature 113





Initial Hydrostatic Pressure.....	(A)	1559	P.S.I.
Initial Flow Period.....	Minutes	30	(B) 69 P.S.I. to (C) 112 P.S.I.
Initial Closed In Period.....	Minutes	45	(D) 658 P.S.I.
Final Flow Period.....	Minutes	30	(E) 126 P.S.I. to (F) 141 P.S.I.
Final Closed In Period.....	Minutes	45	(G) 625 P.S.I.
Final Hydrostatic Pressure.....	(H)	1533	P.S.I.

ROCK TYPES

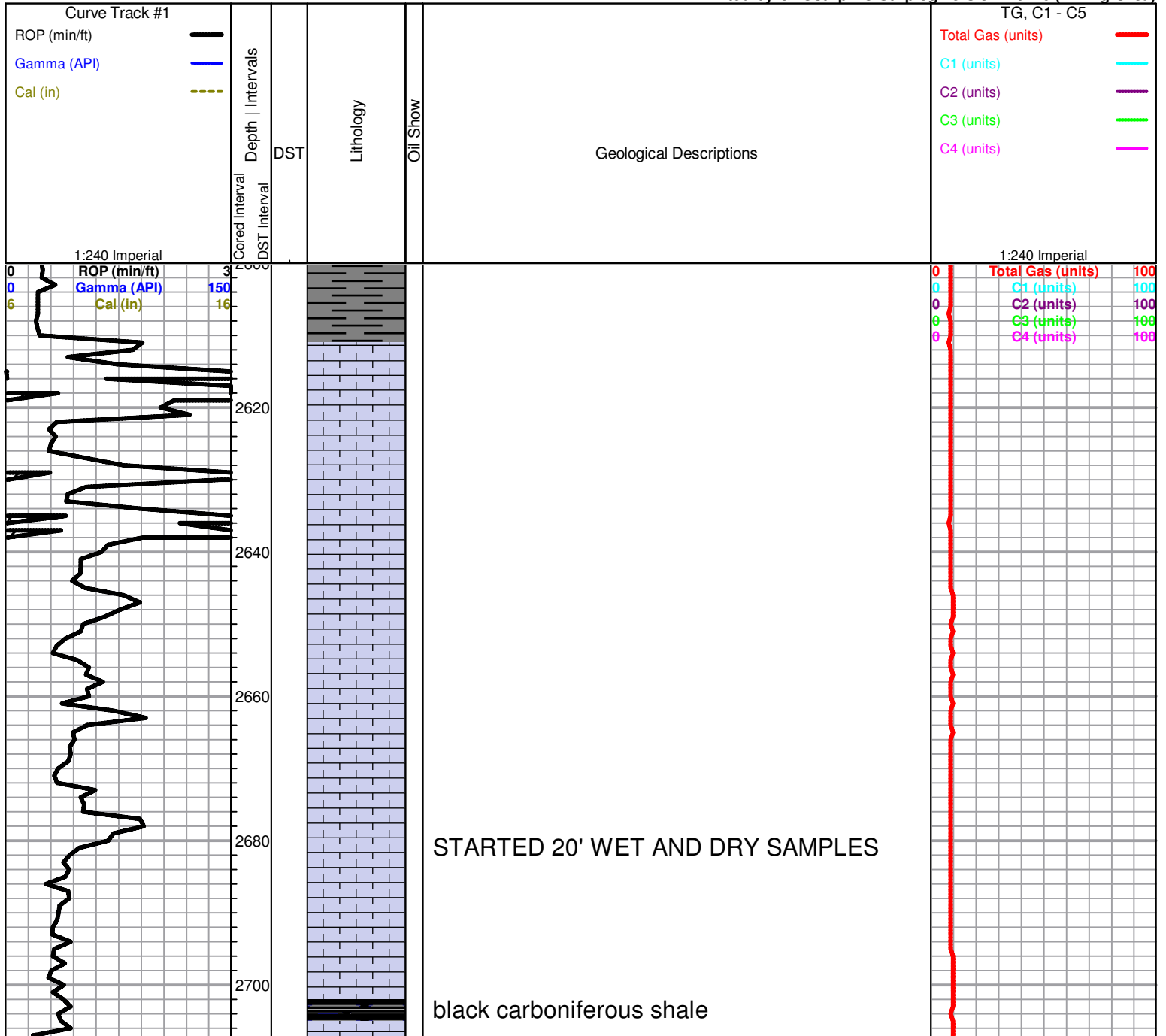
	Dolsec		shale, grn		Carbon Sh
	Lmst fw7>		shale, gry		

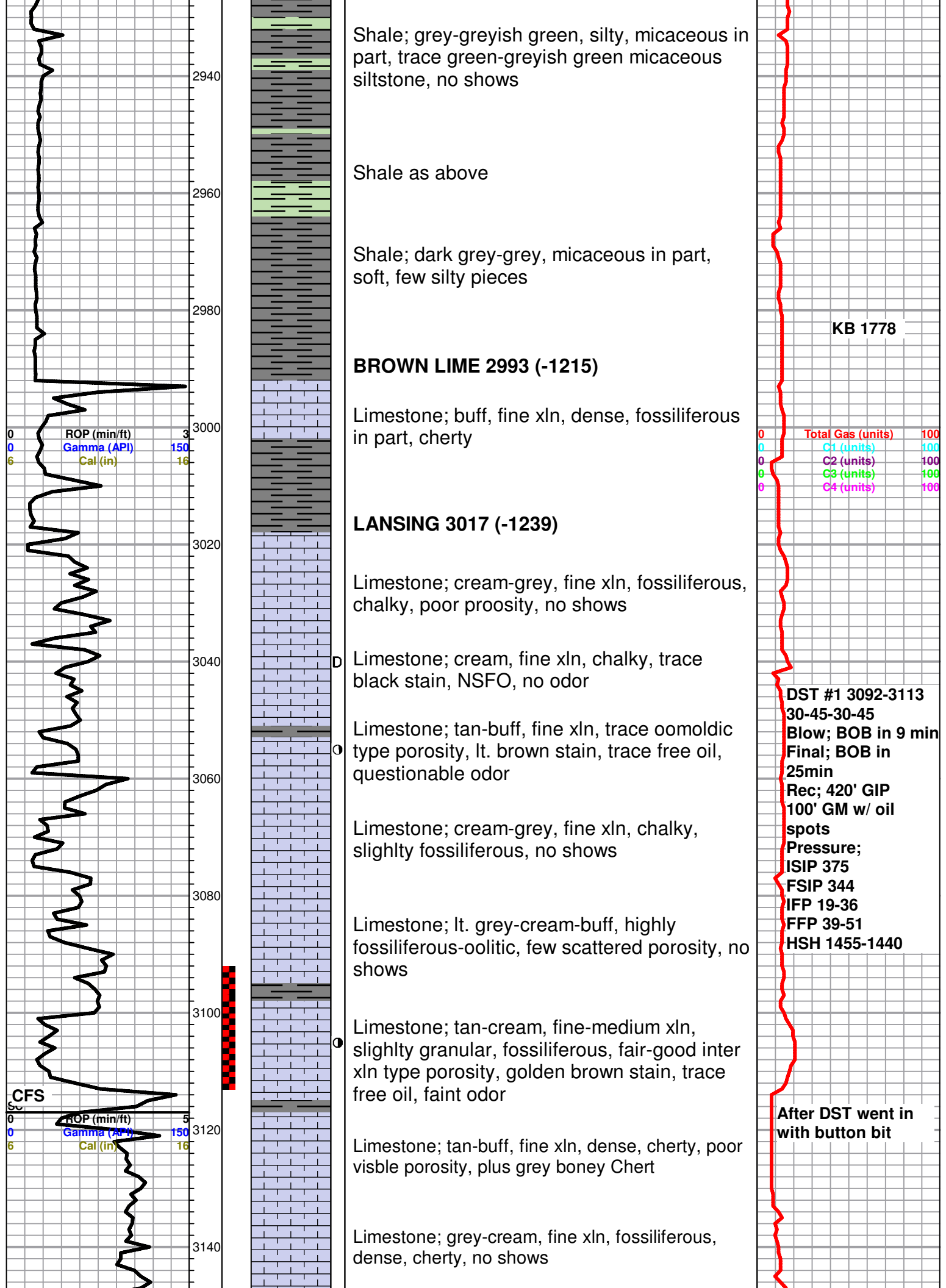
OTHER SYMBOLS

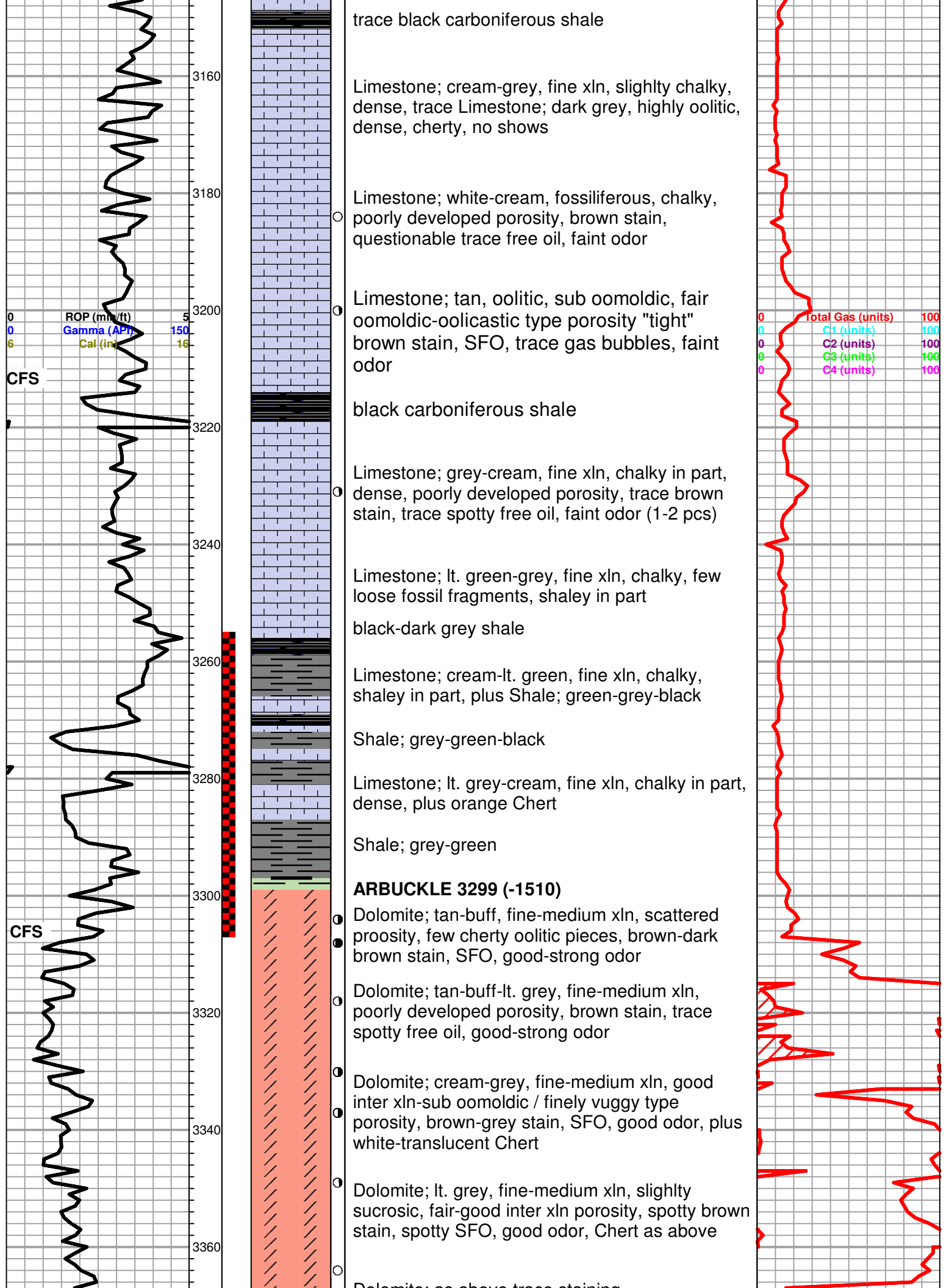
DST

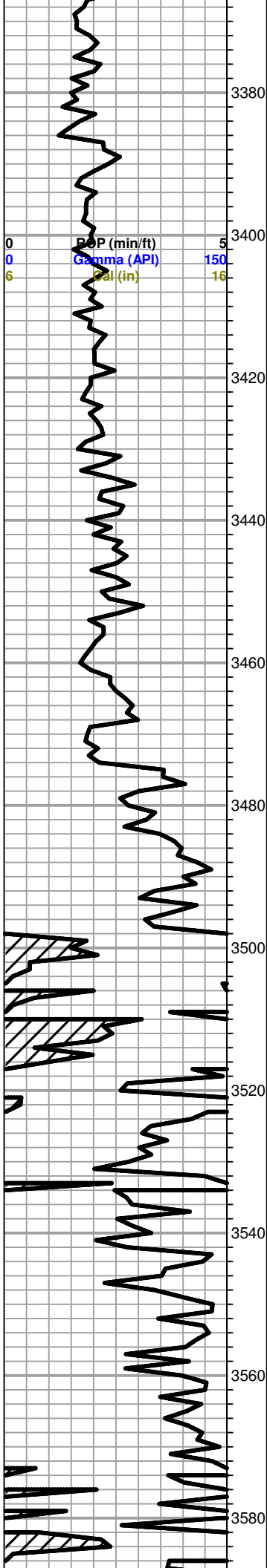
	DST Int
	DST alt
	Core
	tail pipe

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)

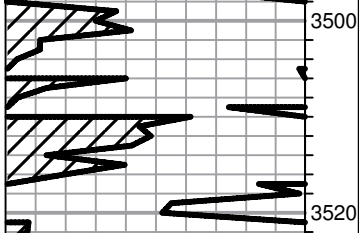








POP (min/ft) 5
 Gamma (API) 150
 Cal (in) 16



Dolomite; as above trace staining

Dolomite; tan-cream, fine xln, dense, cherty, poor visible porosity, trace brown-black stain, NSFO, fair-good odor, plus white boney Chert

Dolomite; cream-buff, fine xln, dense, cherty, few scattered porosity, no shows, faint-fair odor, plus white boney Chert

Dolomite; as above, tan-cream, cherty, poor-no porosity, no shows, faint odor
 plus white boney Chert

Dolomite; cream-lt. grey-white, fine-medium xln, few scattered porosity, cherty in part, no shows, no odor

Dolomite; grey-cream-buff, fine-medium xln, poorly developed porosity, cherty in part, Quartz, no shows, no odor, plus FeS₂

Dolomite and Quartz as above

Dolomite; cream-white, fine-medium xln, poor porosity, cherty, plus white boney Chert

as above

Dolomite; cream-grey, fine xln, few granular pieces, poor porosity, cherty

as above

Dolomite; cream-grey, fine-medium xln, few scattered inter xln porosity, cherty, dense

Dolomite; cream-lt grey, fine-medium xln, poorly developed porosity, cherty, dense

DST #2 3255-3307
 30-45-30-45
 Blow; BOB 15 min
 weak blow back
 Final; BOB 25 min
 weak blow back
 Recovery;
 250' GIP
 50' GOM
 (30%g, 35%o, 35%m)
 190' sIGcOWM
 (10%g, 25%o, 35%w,
 35%m)
 120' sIOGcW
 (5%g, 5%o, 90%w)
 Pressures;
 ISIP 658
 FSIP 625
 IFP 69-112
 FFP 126-141
 HSH 1559-1533

