

APPENDIX K

PERFORATION SHOT RECORDS



FIELD ACTIVITY REPORT (COMPLETION)

Date:	1/10/2015	Operator:	DCP MIDSTREAM, LP		Well Name:	LINAM RANCH AGI #2	
Field or Prospect:	AGI		County:	LEA	Contractor & Rig No.:		KEY ENERGY RIG #296
Pres Depth:		Ftg:		Rot. Hrs.:		Avg. ROP:	Phone No.: (432) 400-2416
Present Operation:		Perforating 7" Cemented Casing. (Made 6 of 7 gun runs)					
Last Casing (Size & Depth):				Shoe Test:		KB to GL:	
Spud Date:	10/7/2014	Days from Spud:		95	Consultant:		Michael Fourrier

From	To	Hrs	Repair Hours for day:		Repair Hours for Job:		BHA Hours:		
0700	0730	0.5	Arrived at location. Signed in. Held JSA / Safety Meeting with all hands.						
0730	0800	0.5	Checked well for pressure & H2S. No pressure or H2S.						
0800	1800	10.0	GIH w/Schlumberger wireline / perf guns to perf 7" casing. Made (6 out of 7) gun runs.						
1800	1830	0.5	POOH with perf gun #6. Secured well. Signed out and left location for the day.						
			Perforated Intervals (6 spf @ 60 deg phasing):						
			8995-9006						
			8956-8978						
			8925-8945						
			8840-8885						
			8817-8832						
			8795-8801						
Total	11.5		Diesel used (gals.):		Cumulative diesel used (gals.):		Diesel on hand (gals.):		

Safety Topics

[illegible]

PU Wt.		SO Wt.		Rot. Wt.		Daily Cost:	\$32,118
D.P.		Top D.C.		Btm. D.C.			
Weight of BHA						Cumulative Cost	\$7,124,609
Effective Bit Weight							
DP Quant., Size, Wt, Gr., Conn.							

MW	Vis	PV	YP	Gels		Water Loss		Cake 32nds	% Solids	% Sand	pH	Alkalinity		Ca	Chlorides	% OIL	OWR
				10 sec	10 min	cc.	HTHP				ES	Pf	Pm	Excess Lime			
Shaker Screen Size:				Date Last BOP Drill:				Date Last BOP Test:									

[illegible][illegible]

Depth:		Deviation:		Depth:		Deviation:		Depth:		Deviation:	
Depth:		Deviation:		Depth:		Deviation:		Depth:		Deviation:	

BG Gas:		Conn. Gas:		Trip Gas:		Remarks:	
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**PROPOSED LOWER ABO AND LOWER LEONARD
INJECTION PERFORATIONS, BASED ON
EVALUATION OF TRIPLE COMBO AND IFMI LOGS**

**DCP Midstream, LP Linam Ranch AGI #2
Section 30, Twp. 18S-37E
Lea County, New Mexico**

**PREPARED BY
Geolex, Inc.**

December 24, 2014

Comparison of Well Log Porosity Linam AGI#1 and #2

SW

130024212200



DCP MIDSTREAM LP
LINAM #2
1600 FSL - IN FTH
Crown LEA
ELEV NS 5.00

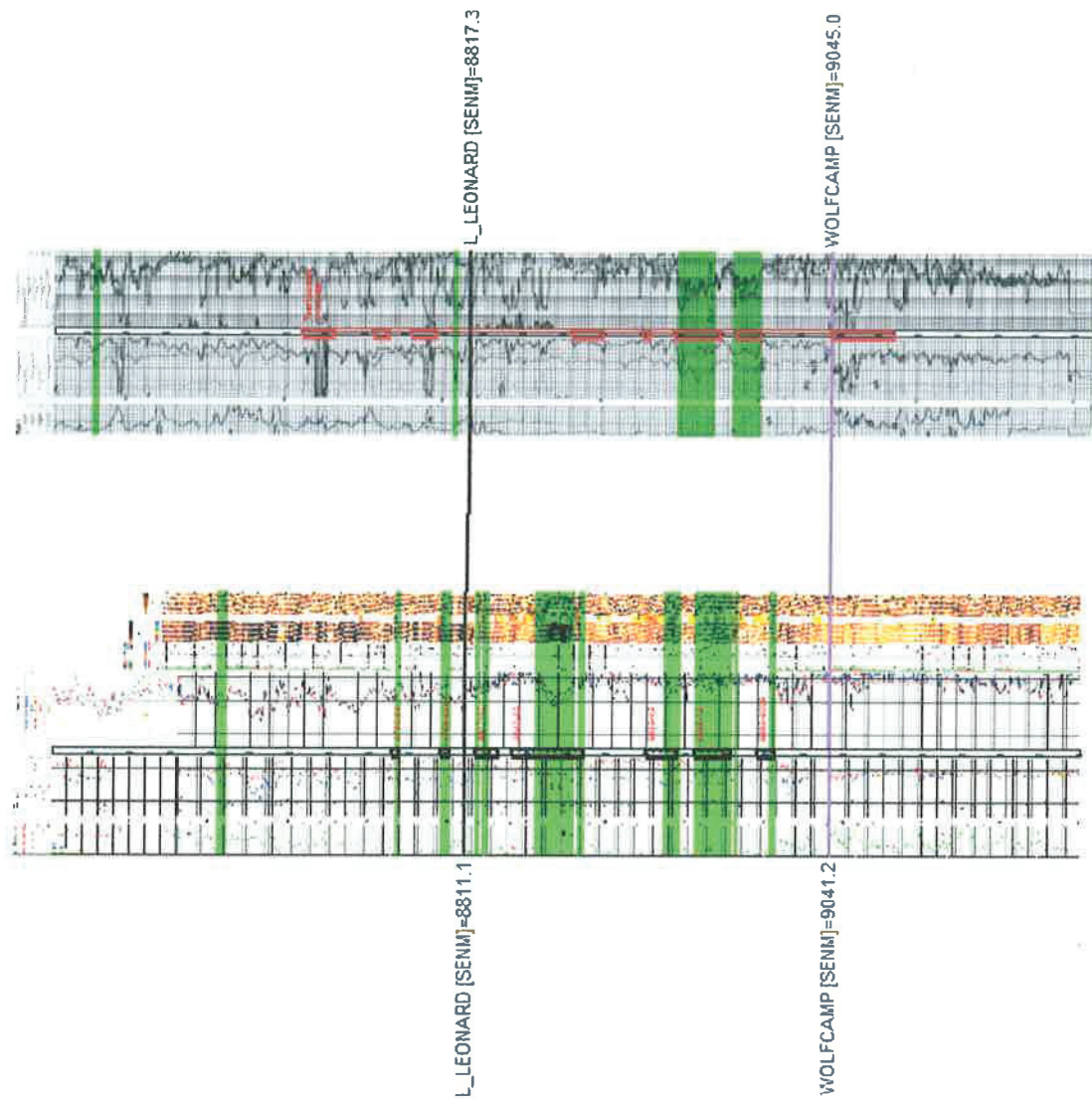
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DCP MIDSTREAM LP
LINAM AGI #1
1310 FSL - IN FTH
Crown LEA
ELEV NS 5.04

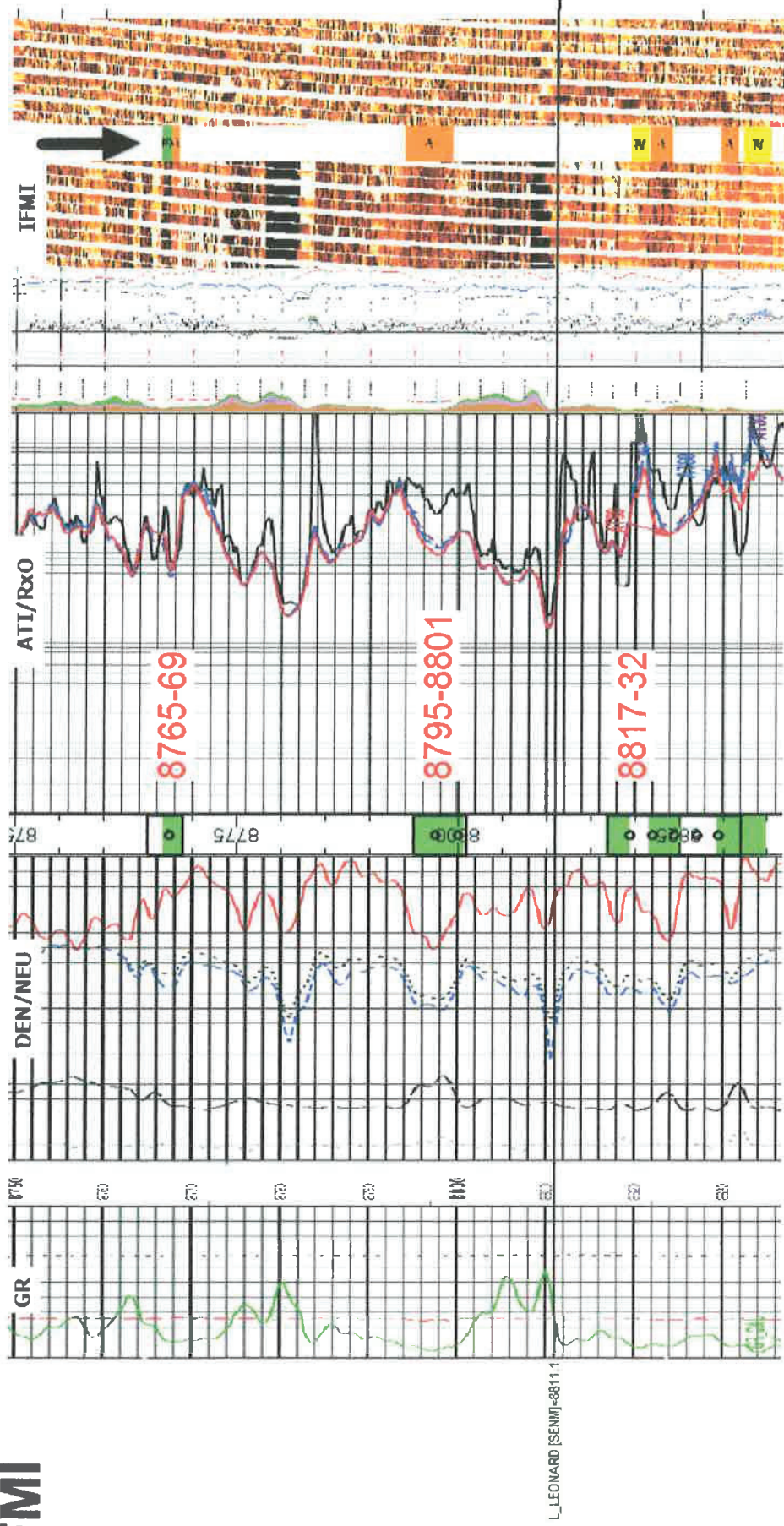
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COMPARISON OF WELL LOG POROSITY (GREEN SHADING) OF THE LINAM AGI #2 WITH THE LINAM AGI #1. THE LINAM AGI #2 HAS MORE OF A POROSITY BUDGET THAT CAN BE SEEN ON THE DENSITY NEUTRON AND FMI LOGS THAN THE LINAM AGI #1, PARTICULARLY IN THE UPPER HALF OF THE LOWER LEONARD, AND AT THE VERY BASE OF THE OVERLYING ABO. PROPOSED PERFORATIONS FOR THE LINAM AGI #2 ARE SHOWN IN BLACK ON THE DEPTH TRACK, AND THE INJECTION PERFS IN THE LINAM AGI #1 ARE SHOWN IN RED.



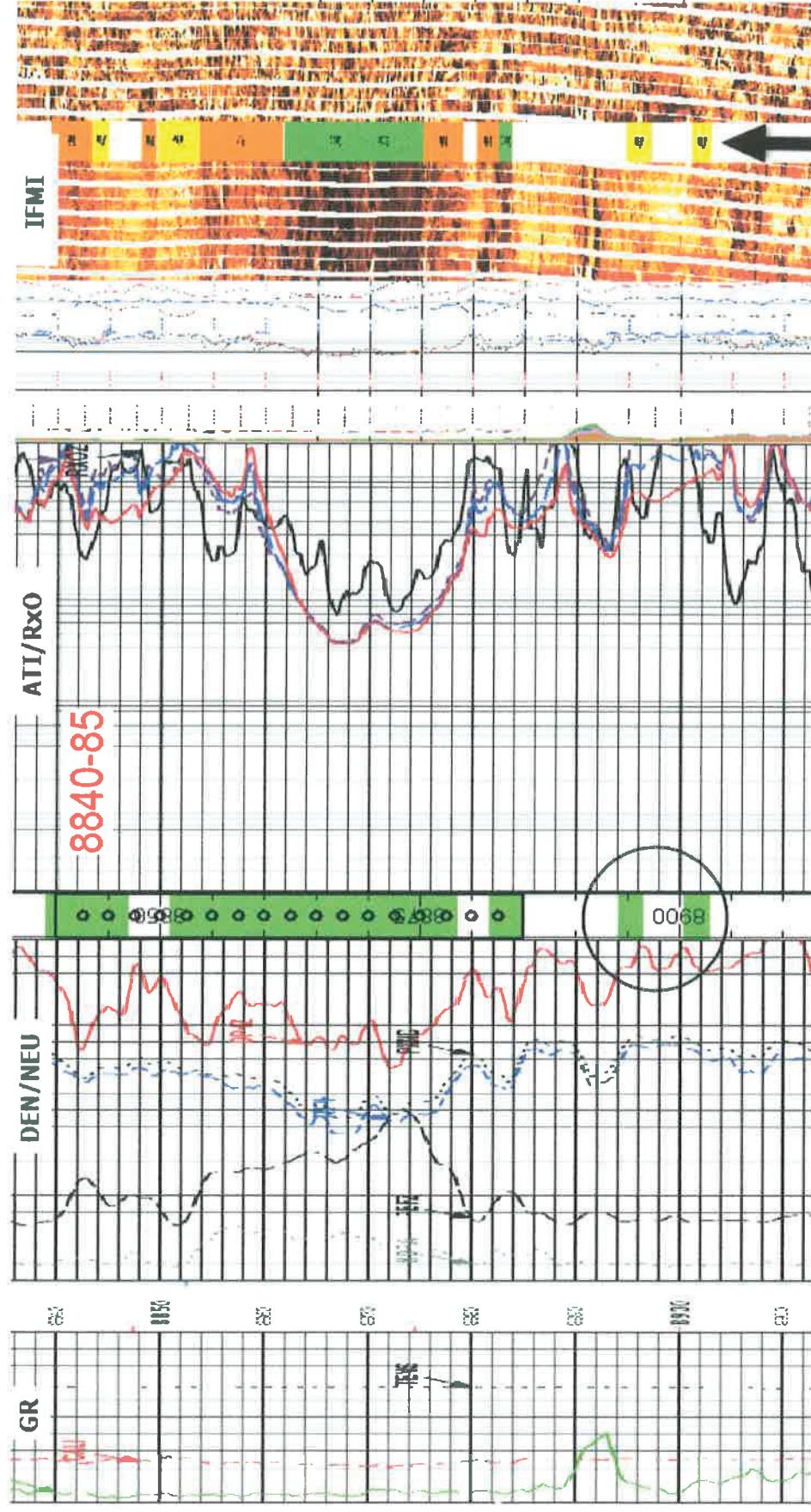
COMP DATE : 7/20/2009

PROPOSED PERFORATION INTERVALS BASED ON POROSITY AND IFMI



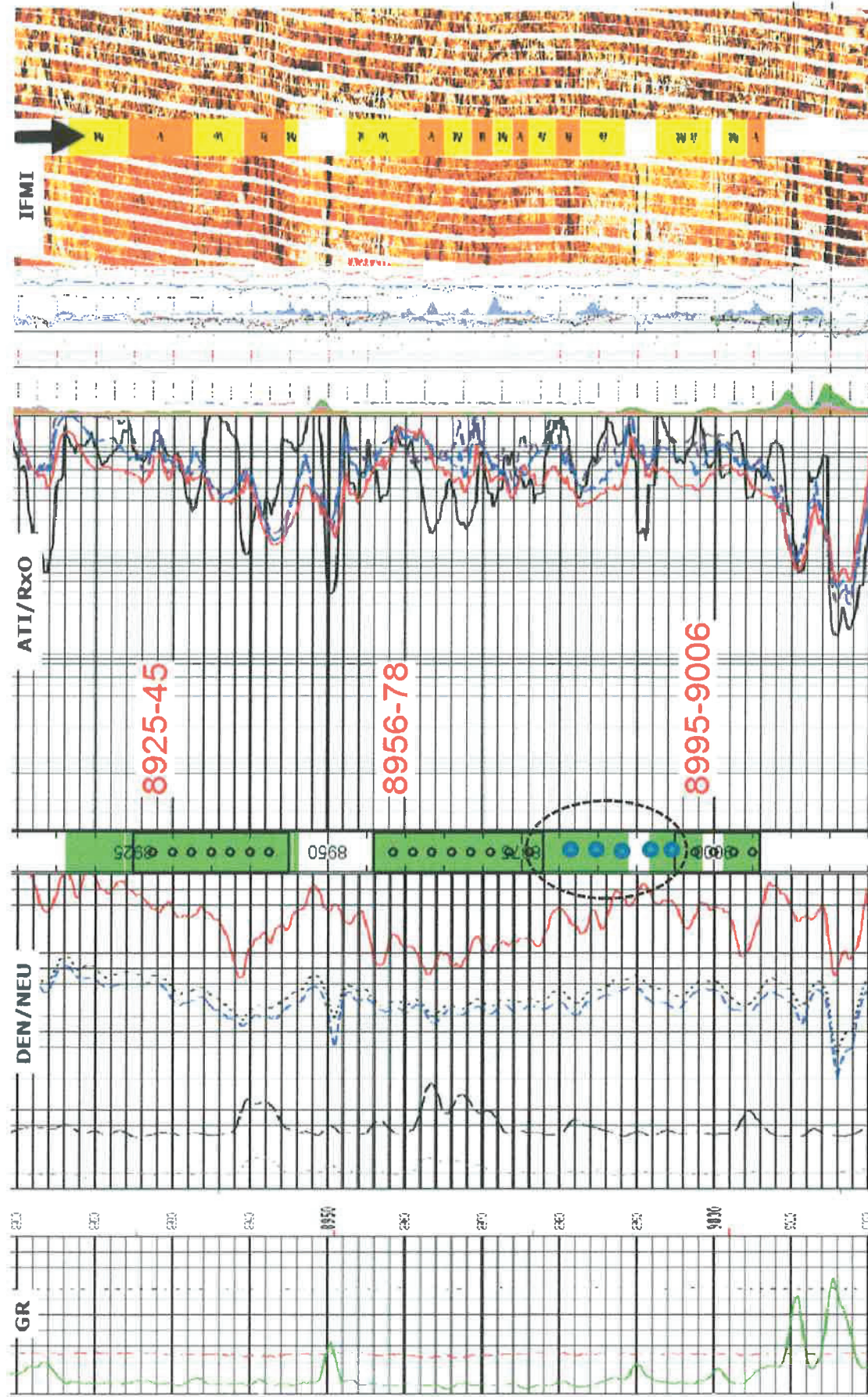
THERE IS A SLIGHT DEPTH LAG BETWEEN THE FMI LOG AND THE OTHER DOWNHOLE LOGS. ON THESE PRESENTATIONS, POROSITY FROM THE DENSITY NEUTRON + IFMI LOGS IS SHADED GREEN IN THE DEPTH TRACK. THE FMI ANALYST'S POROSITY FLAGS ARE SHOWN IN THE IFMI TRACK (ARROW), AND DON'T ALWAYS CORRESPOND TO MEASURED POROSITY ON THE DENSITY NEUTRON LOG THAT MEETS OUR 6% POROSITY CUTOFF. WE HAVE EXPANDED SOME OF OUR PICKS ACROSS SOME OF THE FLAGGED FMI POROSITY, ALTHOUGH NOT ALL OF THE ANALYST'S PICKS IF THE RESISTIVITY LOG INDICATES TIGHT ROCK. THE ZONE 8765-69 WAS ADDED AS A PERF INTERVAL, BUT THE ONLY OTHER INTERVAL HIGHER THAN THAT WAS THE ZONE THAT IS CLOSE TO THE INTERMEDIATE CASING SEAT, AND WE DO NOT INCLUDE IT AS A PROSPECTIVE INJECTION INTERVAL FOR THAT REASON.

OPTIMAL INJECTION ZONE IN LINAM AGI #2



THIS IS CLEARLY THE BEST ZONE WE HAVE IN THIS WELL, BASED ON GROSS POROSITY AND GOOD RESISTIVITY PERMEABILITY, WHICH ALSO SHOWS UP ON THE IFMI LOG. PLEASE NOTE THAT TWO THINNER POROSITY STREAKS BELOW THE MAIN ZONE (BLACK OUTLINE) ARE EXCLUDED, BECAUSE THEY LOOK TIGHT ON THE RESISTIVITY LOG (POORLY-CONNECTED BEDDING FRACTURES).

ADDITIONAL RECOMMENDED PERFORATIONS IN LINAM AGI #2



IN THIS INTERVAL, WE EXCLUDE A NUMBER OF INTERVALS FLAGGED ON THE IFMI LOG, BUT IF IT WAS MORE EFFICIENT TO SHOOT CONTINUOUSLY FROM 8956-9006, THEN IT WOULDN'T HURT ANYTHING TO DO SO AND MAY PROVIDE SOME ADDITIONAL RESERVOIR. ON BALANCE WE WOULD RECOMMEND PERFORATING THE ENTIRE ZONE (SHOWN IN BLUE PERFORATION SYMBOLS).

SUMMARY OF RECOMMENDED PERFORATIONS FOR COMPLETION OF LINAM AGI #2

L_LEONARD [SEMI]=8811.1

★ 8765	8769	Proposed
8795	8801	Proposed
★ 8817	8832	Proposed
★ 8840	8885	Proposed
★ 8925	8945	Proposed
8956	8978	Proposed
★ 8995	9006	Proposed

SUMMARY OF PROPOSED INJECTION PERFORATIONS FOR THE LINAM RANCH AGI #2. INTERVALS WITH NO STAR REMAIN UNCHANGED FROM INITIAL ANALYSIS AND INTERVALS WITH BLACK STARS ARE EXPANDED FROM THE OUR INITIAL ANALYSIS AFTER THE IMFI INTERPRETATION. THE INTERVAL WITH THE GREEN STAR WAS A NEW ADDITION.

THE CONFIGURATION OF THE PERFORATION GUNS MAY DICTATE FURTHER CHANGES IN SHOOTING SCHEMES AS HIGHLIGHTED IN GREEN ON THE DIAGRAM TO THE RIGHT.

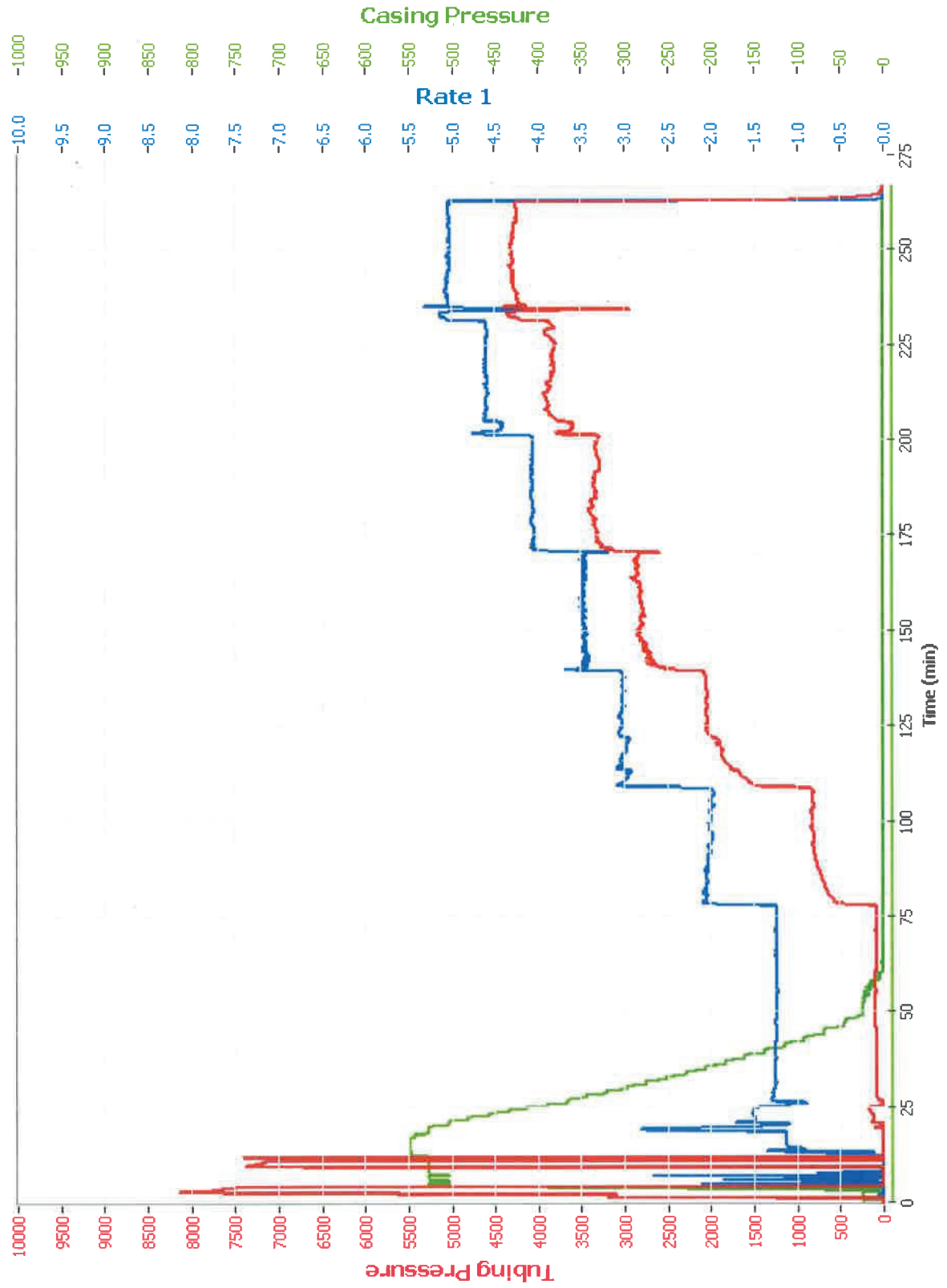
WOLFCAMP [SEMI]=9041.2

PB ENERGY

LINAM RANCH # 2

1-15-2015

Surface Conditions



PB ENERGY

LINAM RANCH AGI # 2

1-15-2015

Surface Conditions

