Attachments can contain viruses that may harm your computer. Attachments may not display correctly.

Young, John, NMENV

From: David E. Broxton [broxton@lanl.gov]
To: Young, John, NMENV; laramide@netzero.net; Cobrain, Dave, NMENV
Cc: Thomas J. Whitacre; mjohansen@doeal.gov; Mark Everett
Subject: R-10 Well Design
Sent: Sun 9/18/2005 2:57 PM
Attachments: R-10 Well Design (final).pdf(361KB) R-10 CMR Bottom.pdf(257KB) R-10 CMR Middle.pdf(567KB) R-10 CMR Top.pdf (339KB)

John and Dave,

Attached is the revised well design for well R-10 that incorporates borehole geophysical data collected by Schlumberger. Based on the new geophysical data, the two proposed well screens have been re-positioned relative to the preliminary well design sent to you Friday. Ned Clayton of Schlumberger evaluated the geophysical data, and he recommended that the screens be placed as shown on the attached figure. The attached Combined Magnetic Resonance (CMR) log best summarizes the relevant water-filled pore structure of these rocks. The CMR results that span the zones of interest are attached as three PDF files. The legend for these curves is at the bottom of the file labeled R-10 CMR Bottom.pdf.

Screen 1 (875-898 ft) is placed in the most productive zone near the top of the well screen interval in PM-1 and the Buckman well field, and it is the approximate mid-point between the R-10a screen and screen 2 in R-10. This position provides information about 1) potential mobile contaminants at elevations corresponding to the top of screens in nearby well fields, 2) vertical hydraulic gradients near the Rio Grande, and 3) groundwater responses to pumping at nearby water supply wells. Screen 2 was placed in the lowermost productive zone that corresponds to the upper Buckman pumping interval. This screen should provide information about potential mobile contaminants along deep groundwater pathways, vertical hydraulic gradients near the Rio Grande, and groundwater responses to pumping at PM-1 and the Buckman well field.

Both screens are 20 ft long, and the primary filter packs extend a maximum of 10 ft above and below the screens. The long screens should facilitate water production in rocks that are fairly poor water producers. Increased water production will facilitate well development, especially when the well is pumped to remove residual drilling fluids. Because of the mud rotary drilling methods, the sand filter pack must be displace the mud in the vicinity the well screen during construction. Extending the filter pack 10 ft above and below the screen provides greater confidence that the well screens can be properly isolated from the bentonite that will be placed as annular seals above and below the well screens.

Installation of R-10 will begin later today. If you have any comments or questions about this well design, you can reach me on my cell phone at 505-699-0950 or at home at 505-662-7819.

Best Regards,

Dave
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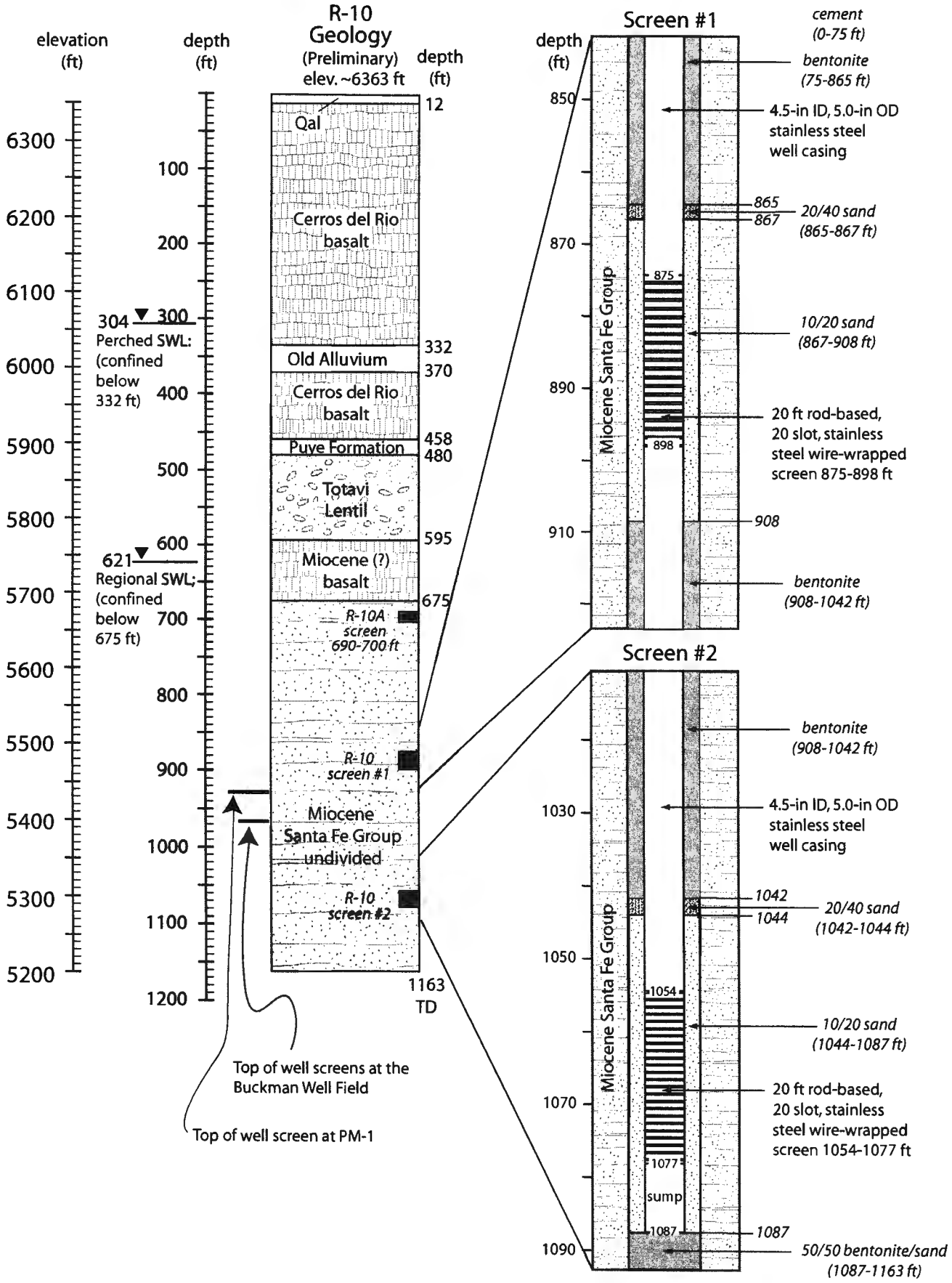
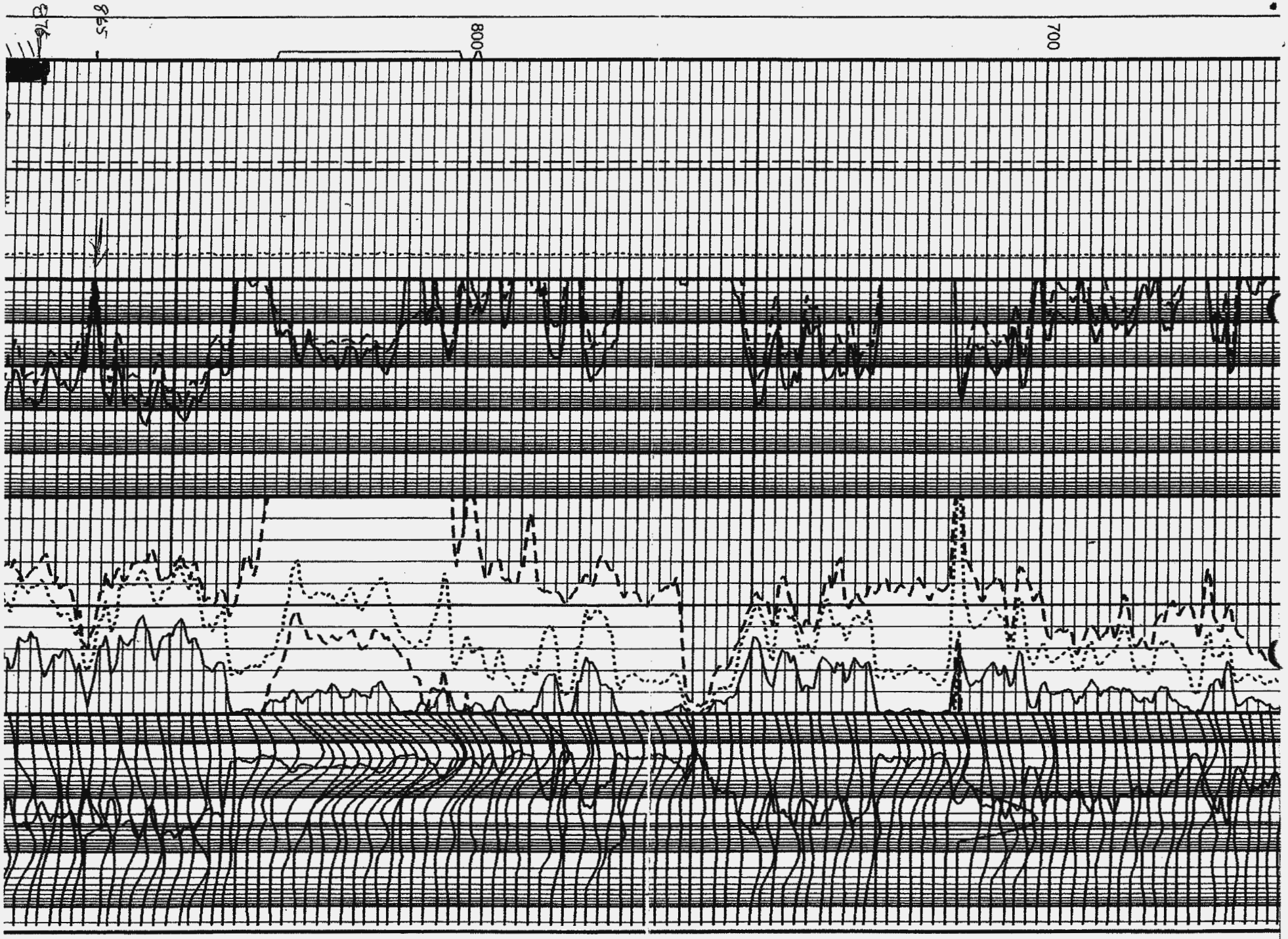
R-10 Well Design

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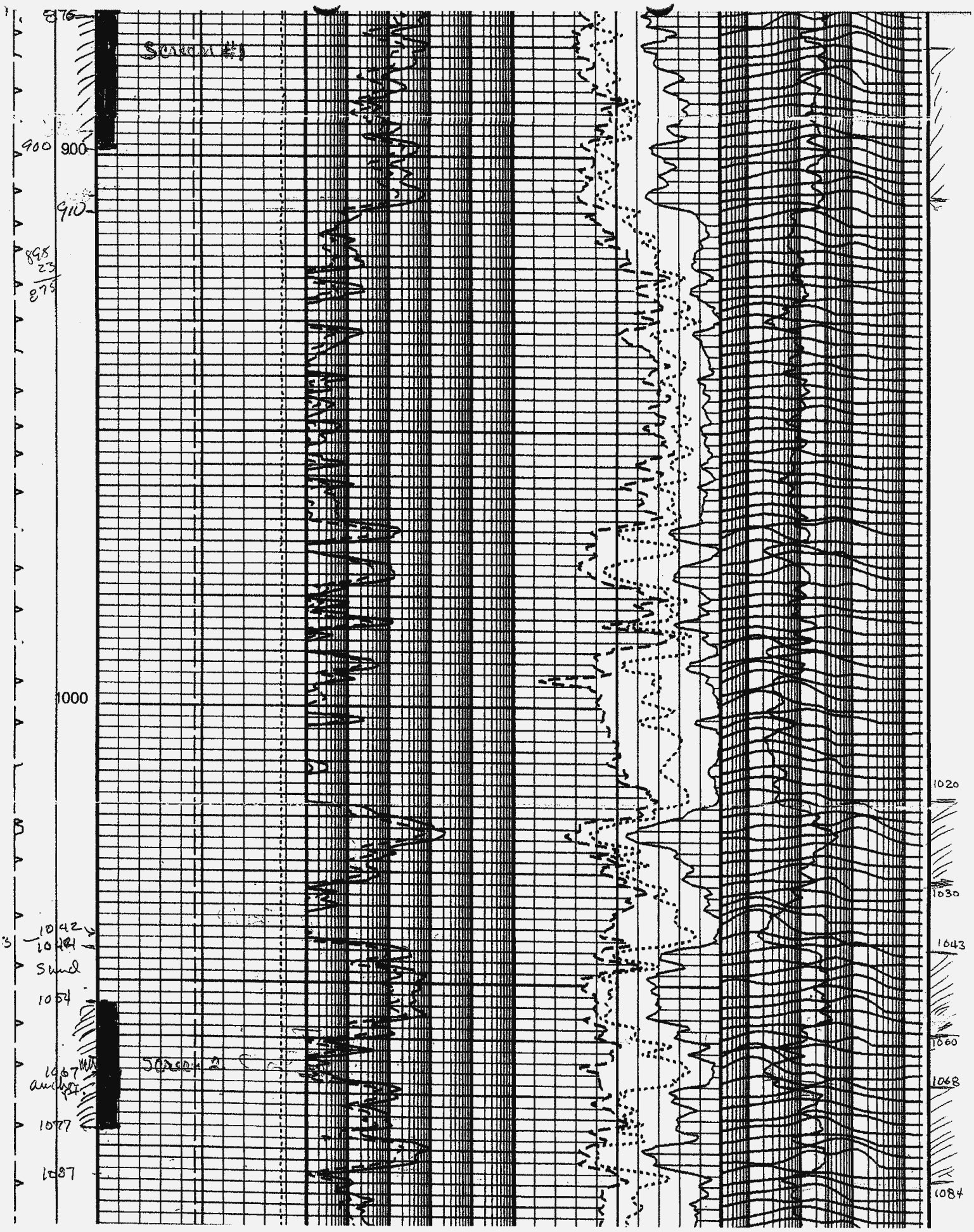
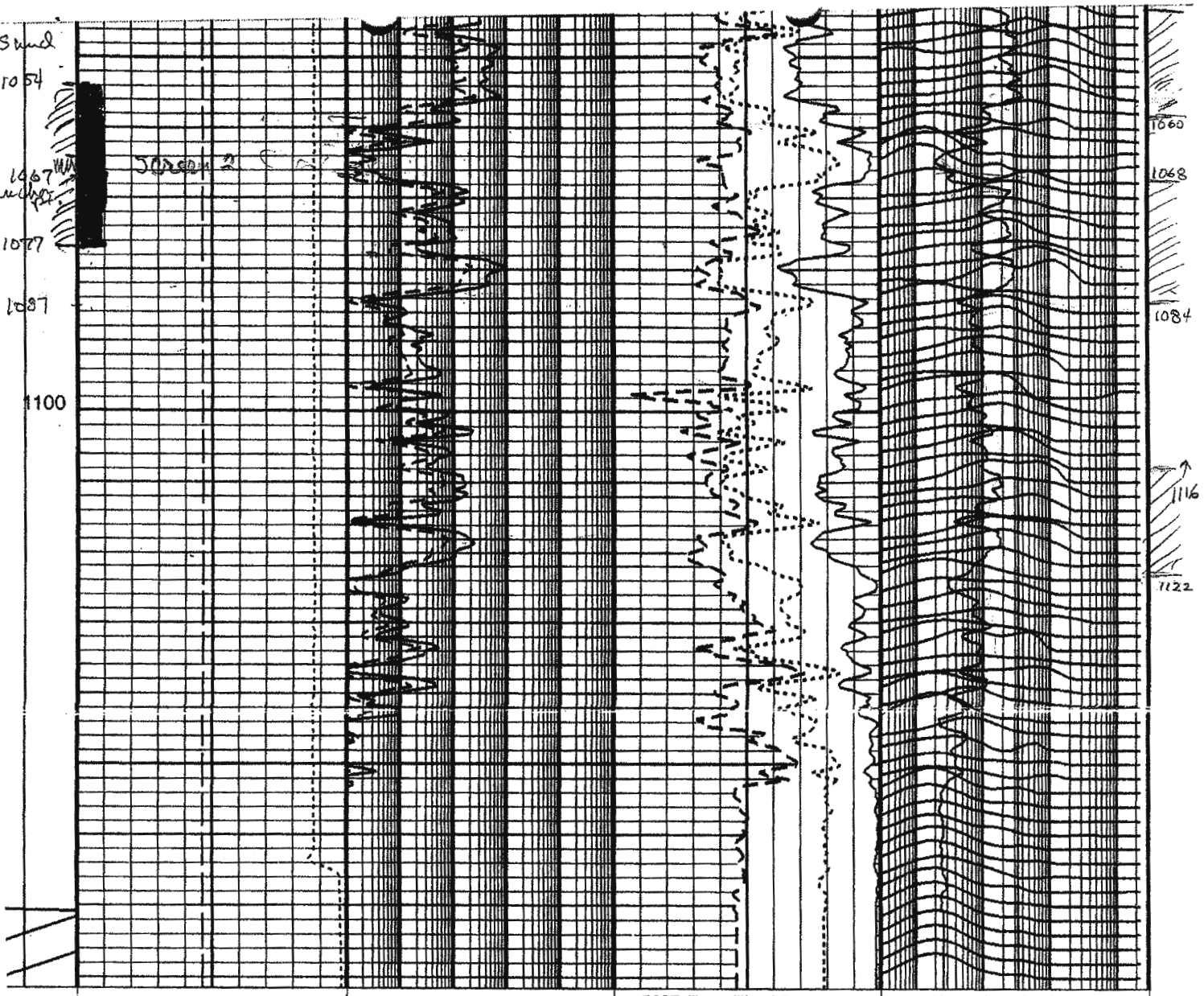
850
800
700



876
Screen #1
900
900
910
898
23
875
1000
1042
1044
Sand
1054
1067
1077
1087
Screen 2
1020
1030
1043
1060
1068
1084



d Hole Flag	Bit Size (BS) 6 (IN) 16	SDR Permeability (KSDR) 0.1 (MD) 10000	CMR Free Fluid Porosity (CMFF) 0.4 (V/V) 0	Bound Fluid Cutoff (T2CUTOFF) 0.3 (MS) 3000
uff. WT Flag	Tension (TENS) 10000 (LBF) 0	Timur/Coates Permeability (KTIM) 0.1 (MD) 10000	CMR 3ms Porosity (CMRP_3MS) 0.4 (V/V) 0	T2 Logarithmic Mean (T2LM) 0.3 (MS) 3000
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se Out of rance			Capillary Bound Fluid Porosity	
NO_ DATE_ UNT) ----) 10			Small Pore Porosity	

PIP SUMMARY

Time Mark Every 60 S

Parameters