

**adall Kilian Corporation**  
Geologist



**Certified Petroleum  
Geologist #3351  
License #224**

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SEP 12 2012

KCC WICHITA

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## GEOLOGIST'S WELL REPORT

COMPANY IA OPERATING, INC. (33335)

WELL Virginia K. #18-1

FIELD Pleasant SE (Wildcat per seismic)

LOCATION (legal) Ap. SE SE NW  
(2180' FNL & 2100' FWL)  
Section 18 TWP 14S RGE 19W

(Map) 6½ mi W & 1½ mi S of Hays Golf  
Coarse

COUNTY Ellis STATE Kansas

ELEVATION: 2223' K.B., 2215' G.L.

Depths measured from Kelly Bushing

A. P. I. NUMBER 15-051-26268

GEOLOGY BY Randall Kilian

# PERTINENT WELL DATA

CONTRACTOR DISCOVERY DRILLING CO., INC. (31548)

RIG #3 HYDRAULICS D-375 6x14x60  
(Galen Gaschler TP)

DRILL PIPE 4 1/2" X-H COLLARS 6 1/2 17 (526')

CASING: SURFACE 8 5/8" @ 221' w/ 150 sx Common

PRODUCTION 5 1/2" @ 3923' w/ 155 sx Common  
PC in Anhydrite

DRILLING FLUID: COMPANY Andy's Mud & Chemical Co.  
(Kirk Werth)

TYPE: Chemical & Drispac

REMARKS: Full service

DRILL STEM TESTS: COMPANY Trilobite Testing Inc.  
(Ray Schwager)

NUMBER OF TESTS Four (4)

ELECTIC LOGS: COMPANY Superior Well Services

DETAIL (5") 3150' - RTD

TYPE DI, Comp N-D, Micro

DRILLING TIME FROM 3150' TO RTD

SAMPLE TIME FROM 3150' TO RTD

SUPERVISION FROM 3150' TO RTD

VERTICAL DEVIATION 3/4° @ 221', 2 1/2° @ 3576',  
2 1/2° @ 3925'

PLUGGING REPORT 30 sx Rat, 15 sx Mouse

RESERVE PIT 400 bbls., Chl. 67,000 Ca. 2100



# DRILL STEM TESTS

| NO | INTERVAL                  | IFP/TIME           | ISIF/TIME   | FFP/TIME            | FSIF/TIME     | HP/FHP         | RECOVERY   |
|----|---------------------------|--------------------|-------------|---------------------|---------------|----------------|--|
| 1  | LKc G-D<br>3535-<br>3576' | 331#<br>329#<br>5" | 522#<br>60" | 374#<br>484#<br>30" | 496#<br>90"   | 1686#<br>1631# | GTS 10" 2nd Open<br>1280' Oil 40°<br>120' SI, O, C, M, Wtr |
| 2  | LKc F-G<br>3576-<br>3630' | 54#<br>133#<br>5"  | 745#<br>60" | 132#<br>393#<br>60" | 659#<br>90"   | 1689#<br>1664# | 520' GIP<br>75' Oil 40°<br>535' O&G, C, M, Wtr<br>190' Wtr |
| 3  | LKc H-L<br>3641-<br>3770' | 27#<br>41#<br>5"   | 768#<br>60" | 34#<br>60#<br>60"   | 904#<br>90"   | 1737#<br>1710# | 270' GIP<br>92' M, G, Oil                                  |
| 4  | Arb.<br>3820-<br>3856'    | -<br>5"            | -<br>60"    | 66#<br>259#<br>75"  | 1225#<br>105" | 1853#<br>1851# | 150' SI, O, C, M, Wtr<br>490' Wtr                          |
| 5  |                           |                    |             |                     |               |                |  |
| 6  |                           |                    |             |                     |               |                |  |
| 7  |                           |                    |             |                     |               |                |  |
| 8  |                           |                    |             |                     |               |                |  |

| MUD RECORD |       |     |     |     |      |    |
|------------|-------|-----|-----|-----|------|----|
| CHK        | DEPTH | WT  | VIS | FIL | CHL  | YP |
| 1          | 3038' |     |     |     |      |    |
| 2          | 3133' | 8.7 | 46  | 8.0 | 1.8k | 15 |
| 3          | 3170' | 8.7 | 44  |     |      |    |
| 4          | 3250' | 8.7 | 53  |     |      |    |
| 5          | 3330' | 8.7 | 52  |     |      |    |
| 6          | 3440' | 8.7 | 53  |     |      |    |
| 7          | 3576' | 8.9 | 48  | 7.8 | 3k   | 14 |
| 8          | 3630' | 9.1 | 56  | 7.8 | 3.2k | 12 |
| 9          | 3730' | 8.8 | 63  |     |      |    |
| 10         | 3793' | 9.2 | 60  | 8.8 | 8k   | 24 |
| 11         | 3880' | 8.8 | 67  |     |      |    |

Displaced

LCM 1#

LCM 1 3/4#

LCM 1#

LCM 1 1/2# \$76.01

LCM 3#

| BIT RECORD |        |      |         |       |        |
|------------|--------|------|---------|-------|--------|
| NO         | SIZE   | MAKE | TYPE    | DEPTH | HOURS  |
| 1          | 1 1/2" | TZ   | WA417GC | 221'  | 2 3/4  |
| 2          | 7 7/8" | HICO | GC20C   | 3925' | 77 1/2 |
| 3          |        |      |         |       |        |
| 4          |        |      |         |       |        |
| 5          |        |      |         |       |        |
| 6          |        |      |         |       |        |



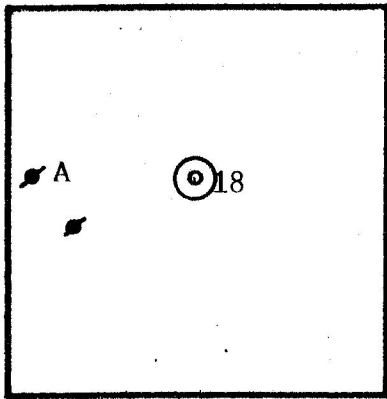
# FORMATION TOPS & STRUCTURAL GEOLOGY

R 19 W

**REFERRED TO:**

A: RAYMOND OIL CO.  
#2 W. Kraus SW SW NW 18  
 B: \_\_\_\_\_  
 C: \_\_\_\_\_  
 D: \_\_\_\_\_  
 E: \_\_\_\_\_

T  
14  
S



| STRATIGRAPHIC<br>MARKERS | SUBJECT WELL |        |       | STRUCTURAL POSITION |   |   |   |   |
|--------------------------|--------------|--------|-------|---------------------|---|---|---|---|
|                          | SAMPLE       | E. LOG | DATUM | A                   | B | C | D | E |
| Anhydrite                | 1486'        | 1488'  | + 735 | + 730               |   |   |   |   |
| Base                     | 1530'        | 1532'  | + 691 | + 693               |   |   |   |   |
| Topeka                   | 3227'        | 3231'  | -1008 | -1006               |   |   |   |   |
| Heeb. Sh.                | 3474'        | 3480'  | -1257 | -1254               |   |   |   |   |
| Toronto                  | 3498'        | 3501'  | -1278 | -1278               |   |   |   |   |
| Lansing                  | 3520'        | 3523'  | -1300 | -1300               |   |   |   |   |
| BKc.                     | 3768'        | 3774'  | -1551 | -1554               |   |   |   |   |
| Marmaton                 | 3802'        | 3808'  | -1585 | -1588               |   |   |   |   |
| Arbuckle                 | 3839'        | 3845'  | -1622 | -1619               |   |   |   |   |
| TD                       | 3925'        | 3924'  | -1701 | -1623               |   |   |   |   |

Note: The log tops were 3-6' deeper than the sample tops.  
 Discovery Drilling #3 is a top quality rig and  
 generally right on their measurements. Therefore, I  
 question the electric log tops.

\*Structural position of subject well as compared to referred well.

## SUMMARY

The Virginia K. #18-1 well was drilled by Discovery Drilling tools rig #3 beginning 3-1-12 and drilling was completed 3-8-12.

The drill site was located via a 3-D seismic survey. The well ran high structurally to nearby wells.

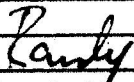
Oil shows were encountered in numerous zones. DST #1 LKc C-D was a positive test. DST #2 LKc F-G may contribute to ultimate reserves. DST #3 LKc H-L was also a positive test.

The Arbuckle was encountered a bit lower than expected therefore DST #4 was a negative test.

Based upon all data, casing was set and cemented to further test and produce the well.

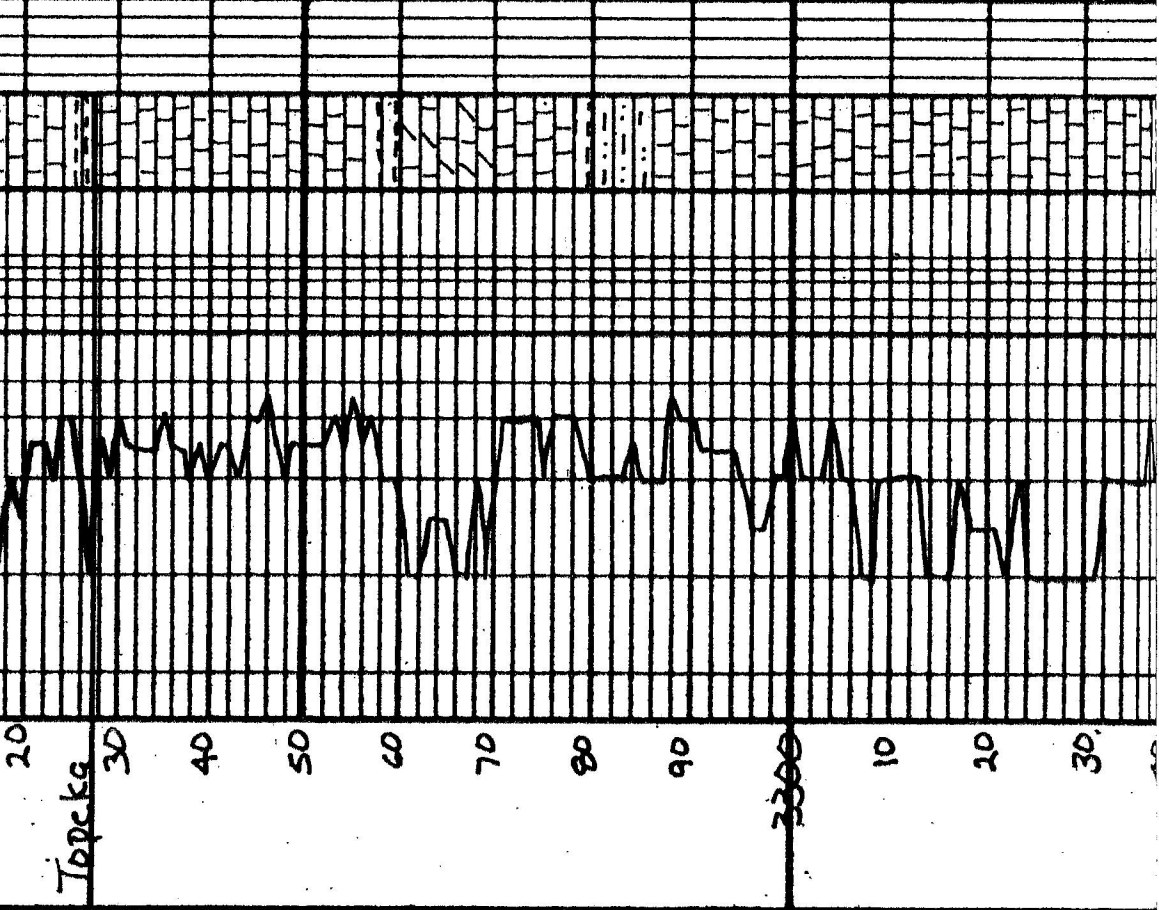
Recommended perfs: LKc K 3727-32', E 3591-95' & C 3550-55'.

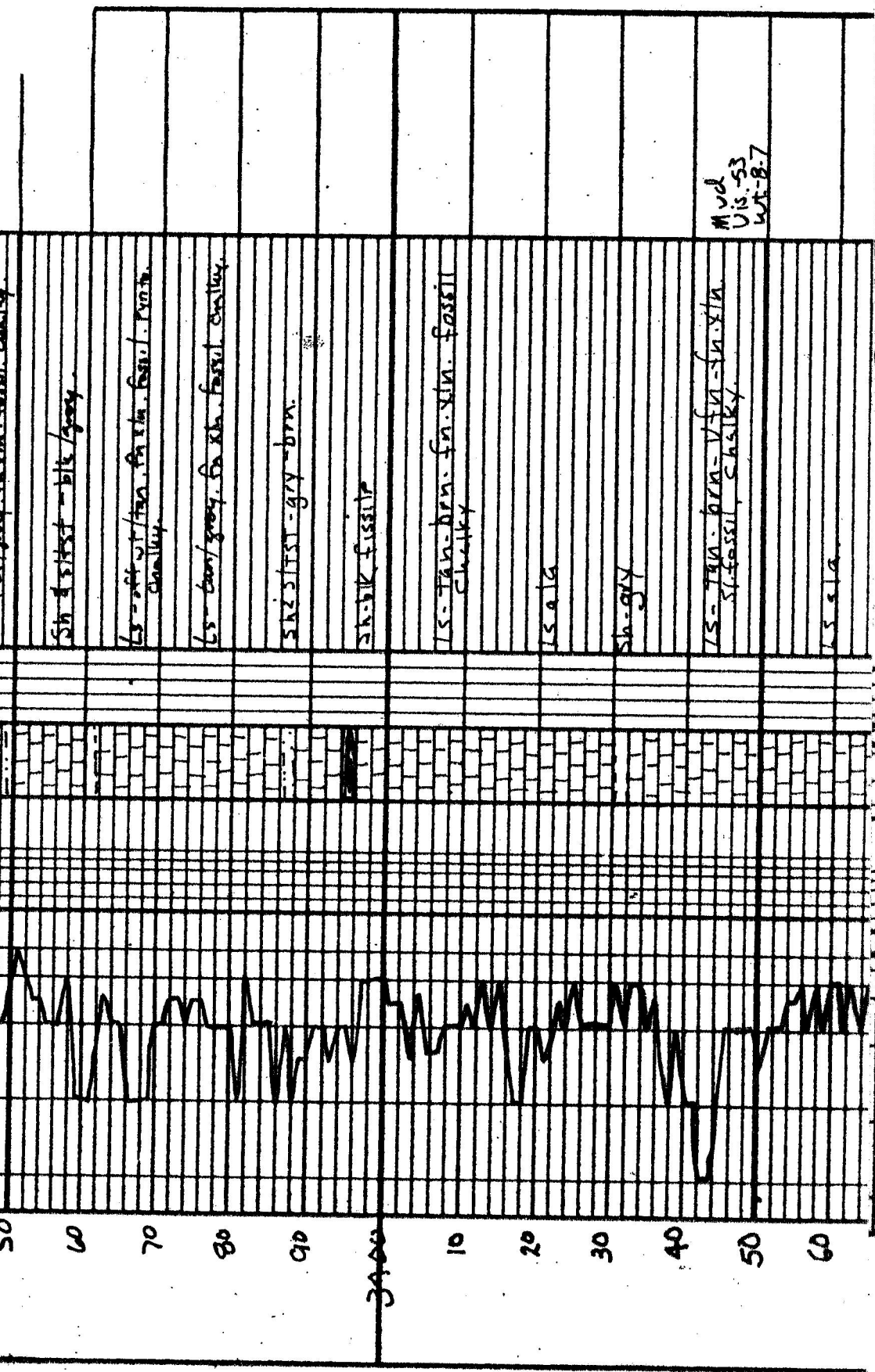
Respectfully,

  
Randall Kilian



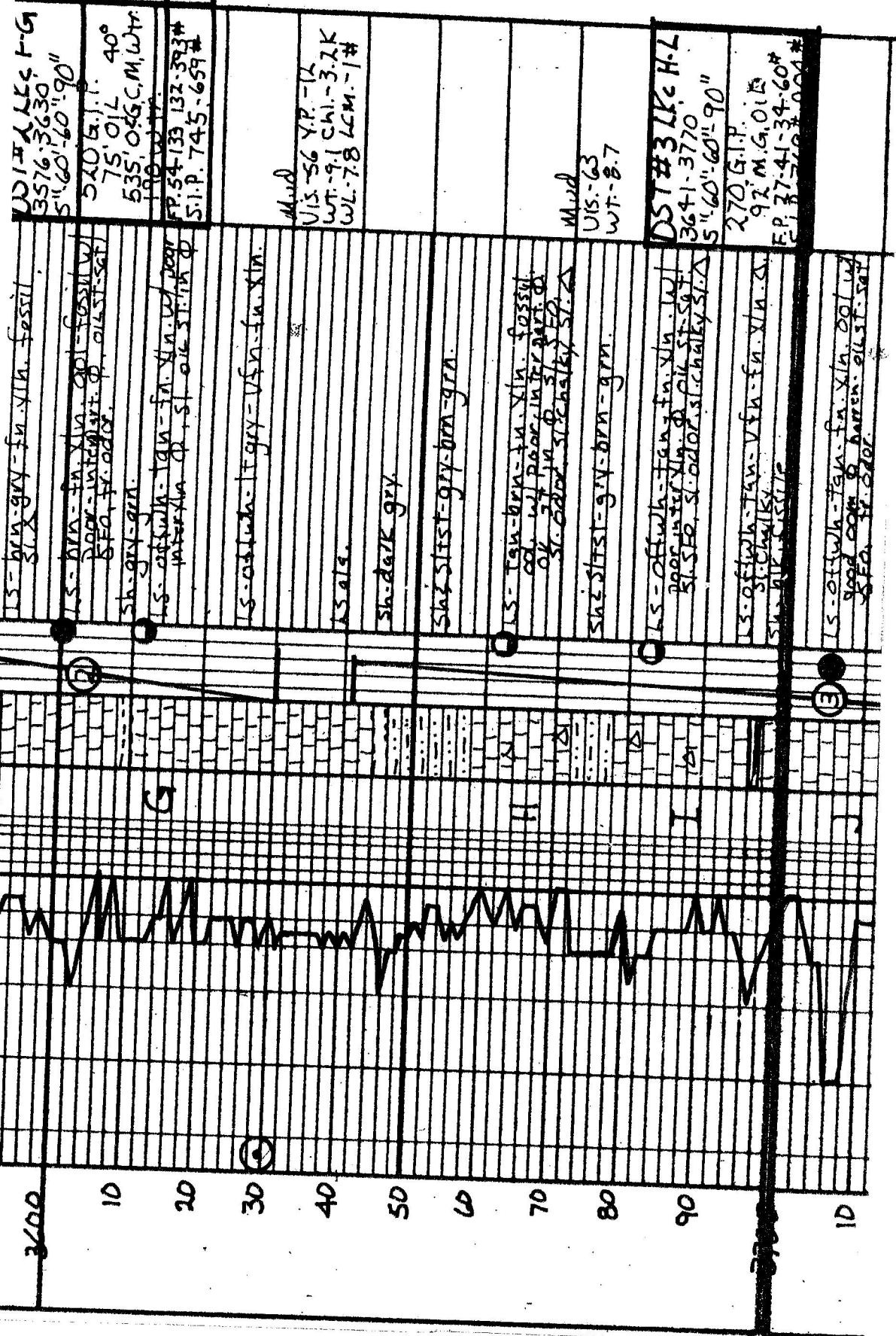
|        |  |                         |
|--------|--|-------------------------|
| sh-gry | LS - tan/grey, fm xln, fossil. cherty  |                         |
|        | ls - tan/grey, fm xln, fossil. cherty  |                         |
|        | Sh d st st - grey/brown                | Mud<br>VIS-53<br>wt-8.7 |
|        | LS - dolo - tan - fm xln               |                         |
|        | Sh d st st - grey/bk                   |                         |
|        | LS - tan/grey - fm xln, fossil. cherty |                         |
|        | LS - tan, fm xln, fossil. cherty       |                         |
|        | LS - tan/grey, fm xln, fossil. cherty  |                         |
|        | LS - tan, fm xln, fossil. cherty       |                         |
|        | LS - tan, fm xln, fossil. cherty       |                         |
|        |  | Mud<br>VIS-52           |











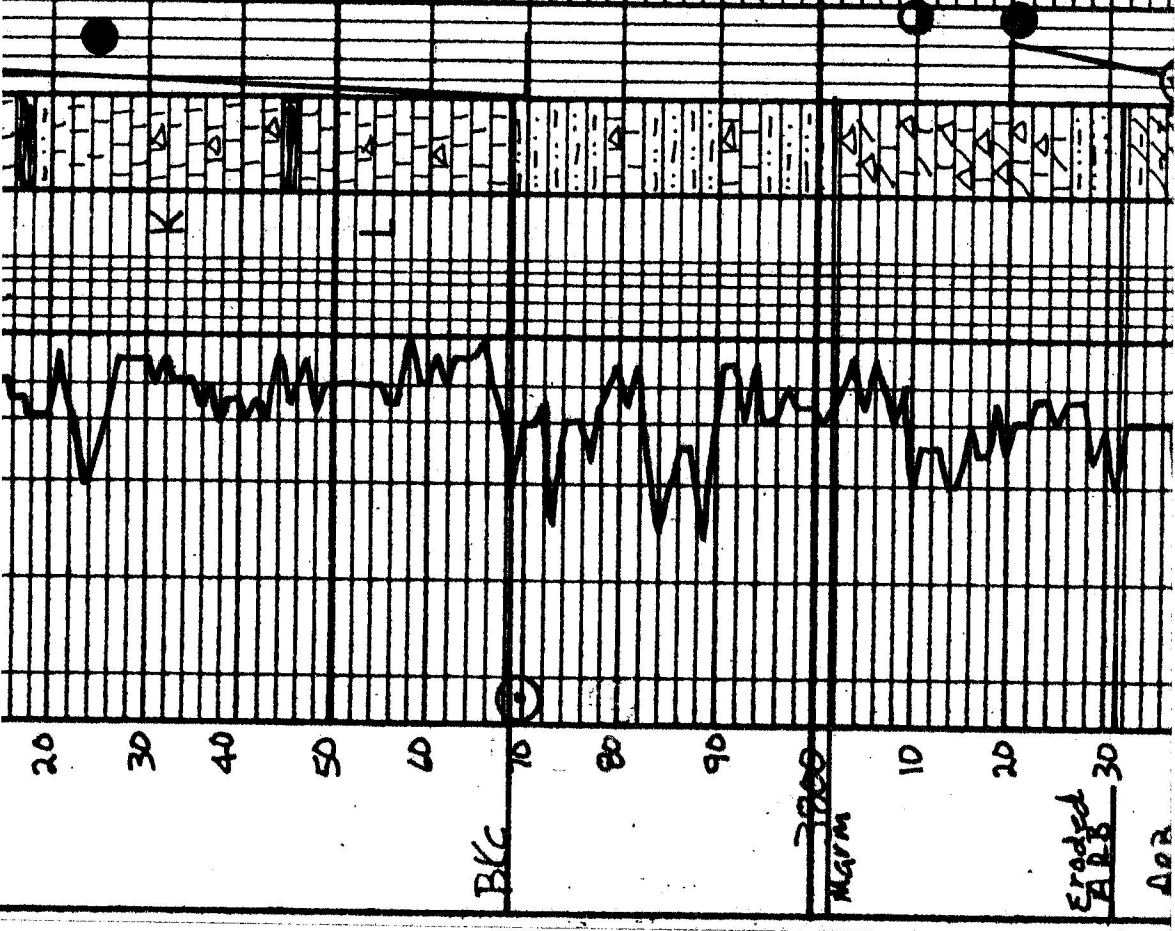
270 G.I.P.  
 92 M.G. 015  
 FP 77-41-34-60#  
 5.1.P. 745-659#

ls - brn - gry - fn. xln. fossil  
 ls - brn - fn. xln. opal - fossil w/  
 poor - interstr. of oilst - sat  
 sh - gry - gra.  
 ls - offwh - tan - fn. xln. w/ poor  
 interstr. of oilst - sat  
 ls - offwh - tan - fn. xln.  
 ls - offwh - tan - fn. xln. Δ  
 sh - gry - gra.

Mud  
 Vis - 56 Y.P. - 1X  
 WT - 9.1 CM. - 3.2K  
 WL - 7.8 LCM. - 1#  
 Mud  
 Vis - 63  
 WT - 8.7

DST #3 LKc H-L  
 3641-3770  
 5" 60" 60" 90"  
 270 G.I.P.  
 92 M.G. 015  
 FP 77-41-34-60#  
 5.1.P. 745-659#

sh-bk carb. fissile  
 sh. silty- gray-brn-grn  
 ls-tan-brn-fn. vln. carb. fossil.  
 1/4" poor to good in thin part. 1/2"  
 bedding - silty-sat, good  
 good odor.  
 ls-qlt- chalky, Δ  
 sh-bk fissile  
 ls-offwh-fn. vln. vln. fossil.  
 Δ, silty-chalky, silty  
 sh. silty- gray-grn.  
 ls-tan- gray-fn. vln. fossil. Δ  
 sh. silty- brn- gray-grn, maroon.  
 ls-tan- gray-fn. vln. fossil. Δ  
 sh. silty- brn- gray-grn  
 ls-tan- gray-fn. vln. fossil. Δ  
 sh. silty- brn- gray-grn  
 Δ, vln. vln. offwh. thin. silty  
 silty- tan. w/ silty. silty.  
 1/4" p.  
 ls-qlt- tan- vln. vln. oil sat. silty.  
 w/ Δ p.  
 sh. silty- brn- soft.  
 sh. gray- chalky  
 Data: dirty- shaly. reworked



Mud  
 Vis. -63  
 wt. -8.8

OST#4 Arb.  
 3820-56'  
 S-60-75-105"  
 150 ST. C.M. WTM.  
 490 WTR.  
 FP. - - 66.259#  
 S.I.P. - - 1225#

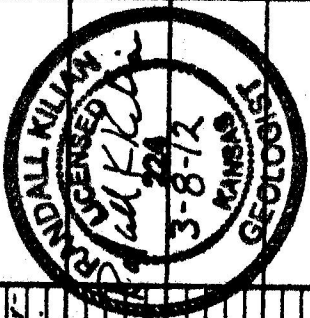
BKC

MGRM

Eroded Arb

Arb





Mud.  
Uls.-67  
WT-8.8  
Lem 3#

Doorkor interkalin &  
perekam di ST. Sat. SFO,  
Fr. adar.

Dato atg

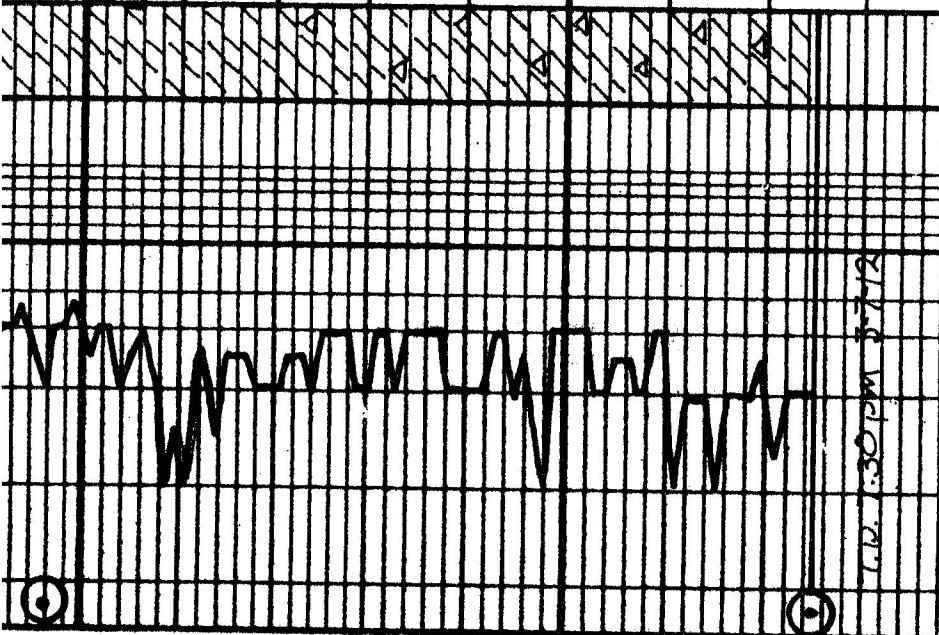
Dato - Tan - It - grx - fa - med & lin  
w/ poor - fr. in ter. lin. &  
bakeren - ois - st. SFO. SFO. adar  
SFA

Dato atg

Dato - Tan - In - med & lin. w/ poor  
fr. interkalin & mostly barren.

Dato atg

deo 2 1/2



T.D. 1:30 PM 3-7-12

T.D.

3900

50 60 70 80 90 100 20 30