



**GEOLOGIST'S REPORT**  
**DRILLING TIME AND SAMPLE LOG**

Geologist on Well: **Cristina Goodrich**  
 LEASE: **Jacobs Trust A Unit 1-8**  
 FIELD: **15<sup>th</sup> FSL & 33<sup>rd</sup> TEL**  
 LOCATION: **15<sup>th</sup> FSL & 33<sup>rd</sup> TEL**  
 SEC: **8** TWP: **14S** R: **27W**  
 COUNTY: **Grove** STATE: **Kansas**  
 CONTRACTOR: **Duke Drilling Rig #4**  
 SPUD: **7/19/2012** D: **Compl**  
 Measurements are All From Kelly Bushing

ELEVATIONS  
 KB: **2548**  
 DF: \_\_\_\_\_  
 GL: **2359**

CONDUCTOR: \_\_\_\_\_  
 CASING: \_\_\_\_\_  
 RTD: **4400'** LTD: **4403'**

MUD UP: \_\_\_\_\_ TYPE MUD: \_\_\_\_\_ CHEMICAL: \_\_\_\_\_  
 SURFACE: **8.58" @ 214'**  
 PRODUCTION: \_\_\_\_\_

SAMPLES SAVED FROM: **3650** TO: **TD**  
 DRILLING TIME KEPT FROM: **3650** TO: **TD**  
 SAMPLES EXAMINED FROM: **3650** TO: **TD**  
 ELECTRICAL SURVEYS: \_\_\_\_\_

REFERENCE WELL: **Rocky 'A' #2-9 Trans Pacific Oil**  
 Superior Logger  
 Diamond Test Log

Formation: \_\_\_\_\_ Sample Tops: \_\_\_\_\_ E-log Tops: \_\_\_\_\_  
 Strat: \_\_\_\_\_  
 Anhydrite: **1989 (-4589)** **1987 (-4561)**  
 Base Anhydrite: **2027 (-4521)**  
 Heebner: **3709 (-1161)** **3744 (-1159)**  
 Lansing: **3748 (-1200)**  
 Stark Shale: **3985 (-1438)** **3985 (-1437)**

Pleasanton: **4024 (-1494)** **4053 (-1485)**  
 Marmaton: **4058 (-1510)** **4248 (-1700)**  
 Fort Scott: **4248 (-1698)** **4248 (-1700)**  
 Mississippi: **4338 (-1790)** **4338 (-1790)**

Anhydrite	Sandstone	Limestone	Shale	Carb Sh	Cherty LS	Chert	Dolomite
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REMARKS: Based on log examination and negative DST results, it was decided to plug and abandon this well.

Respectfully Submitted,  
 Cristina Goodrich, Geologist

LEGEND

Anhydrite	Sandstone	Limestone	Shale	Carb Sh	Cherty LS	Chert	Dolomite
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DEPTH: \_\_\_\_\_

DRILLING TIME IN MINUTES PER FOOT: \_\_\_\_\_

SAMPLE DESCRIPTION: \_\_\_\_\_

REMARKS: \_\_\_\_\_

70' Anhydrite

1989 (+559)

Base/Anhydrite

2027 (+521)

3500' Daily Penetration

7/10/2012: Move in. Spud

7/11/2012: Drig @ 510'

7/12/2012: Drig @ 2390'

7/13/2012: Drig @ 3065'

7/14/2012: Drig @ 3615'

7/15/2012: Testfing @ 3835'

7/16/2012: Drig @ 3930'

7/17/2012: Testfing @ 4005'

7/18/2012: Drig @ 4225'

7/19/2012: Testfing @ 4345'

7/20/2012: Testfing @ 4360'

7/21/2012: RTD @ 4400'

60' Ls-fhn, crm, semi dense, foss ip

Ls-fhn, waxy, some gm and fss

Ls-fhn, crm, mostly dense, foss, sil chalky ip

Ls-AA, Sh-gry soft

Ls-fhn, foss, crm, Few pc fsh gry ch, foss ip, few pc lt gm sh

Ls-fhn, crm, foss, Chl-fsh, wht, foss, Sh-gm, gry

Ls-fhn, crm, sil silty ip, mostly foss, semi dense, 3ml pc of chl AA

Ls-fhn, crm, silty, mostly dense, Chl-whit, fsh

Sh-dk gm, silty ls and chl AA

Heebner

3709 (-1161)

Sh-bk, carb

Ls-fhn, gry, dense, gm silstone, few pc wht, fgm, easily friable sd clusters

Ls-ll crm, f-mxn, semi dense, sil foss, few pc w/ chl incl, sil succinic, abs-pr scat, fsh in tray, chl-fsh wht, opa, foss.

Chl-fsh, why opa, foss, Ls-fhn, crm, silty

Lansing

3748 (-1200)

Ls-fhn, crm, mostly dense, foss ip, chl incl ip, no vis por, Chl-chl opa, foss, Sh-gm, gry, Few pc ool.

Ls-vln-fhn, crm, foss ip Chl-AA, Sh-ll gm

Ls-crm, fhn, dense, 2nd cal repl, no vis por

Ls-gry, fhn, dense, silty, no vis por

Ls-crm, fhn, mostly dense, ool, 2nd cal repl, few pc pyrite, gm soft silstone

Ls-crm, fhn, dense, no vis por, Sh-gm, gry

Ls-crm, fhn, mostly dense, 2nd cal repl, no vis por, few pc wht chalk, Sh-gry, few pc pyrite

Sh-gry, lt gm, few pc pyrite

Kansas City

3822 (-1274)

Ls-crm, fhn, pr scatt int xln por, slight show of dk brn FO, uneven stn, no odor, v dull floor, some dk brn/bk dead on on break

Sh-gm, gry

Sh-gry

Ls-crm, f-mxn, mostly dense, no vis por

Chl-wht, fsh, opa

Ls-crm, fhn, mostly dense, chalky, no vis por, Few pc wht chalk

Ls-crm, fhn, dense, ool, pr ooc, porosity, NS

Ls-crm, f-mxn, semi dense, ool ip, pr scatt vul por, pc wht chalk

Ls-gry, vln, v, dense, no vis por.

Ls-crm-gry, f-mxn, mostly dense, NS

Ls-crm, fhn, mostly dense, absent to scat pr vis por, NS, no odor

Ls-crm, mxn, granular, foss ip, mottled bx, pr int xln por, SFO in tray, FO on break, slight odor, gd floor.

Sh-gry

Ls-crm/fhn, ool, 2nd cal repl, v dense, no vis por, pr scat vul por, pr scatt int xln por on break, gd floor, slight odor, pr scatt int xln por

Ls-crm/gry, fhn, dense, sil chalky ip, Chl-gry, opa, fresh, Sh-gry

Ls-gry vf-fhn, no vis por, wht chalk, few pc pyrite

Sh-gry

Ls-crm, fhn, mostly dense, ool, P5 dk brn FO, blk edge stn, some pc w/brn stn, pr scat vul por, SFO in tray, FO on break, gd floor, slight odor, pr scatt int xln por

Ls-crm, fhn, mostly dense, silty, no vis por

Ls-crm, fhn, mostly dense, silty, no vis por

Ls-crm, fhn, mostly dense, silty, no vis por

Stark Shale

3986 (-1438)

Sh-bk, carb

Ls-crm/off wht, fhn, ool, gd odor & fluor, F5 of lt, brn FO in tray, FO on break, pr ool-vug por.

Ls-gry/vln, mostly dense, foss, silty

Sh-bk, gm

Ls-crm-brn, mostly dense, foss, 2nd xln, VPSFO in tray, few pc's with FO on break, brn uneven stn, fluor, slight odor, v, vis por.

Ls-gry, vln, dense

Pleasanton

4042 (-1494)

Sh-bk, carb

Ls-gry, vln, dense, Ls-gry, silty

Siltstone-gry, gm, Few pc pyrite

Siltstone AA, plus waxy blk and gm shales

Ls-crm, fhn, mostly dense, silty, no vis por, pr scat vul por, no odor, no FO in tray, v, pr scat int xln por on break, no odor, no FO in tray, v, pr scat int xln por

Ls-crm-brn, f-mxn, dense, 2nd xln, mottled, pc wht chalk.

Sh-gm, blk

Ls-crm, fhn, dense, Sh-gm, pc wht chalk

Ls-crm-brn, fhn, ool, foss, 2nd xln, dense

Ls-crm, vln, dense 2nd xln; Ls-crm fhn chalky ip

Marmaton

4058 (-1510)

Sh-gry

Ls-crm, vln, dense, 2nd cal repl

Ls-crm-ll brn, fhn, dense, mottled, 2nd cal repl

Ls-crm-gry, fhn, mostly dense, chalky ip

Sh-gm

Ls-crm, fhn, mostly dense, 2nd cal repl ip, pc wht chalk

Ls-AA, Sh-gm

Ls-gry, fhn, mostly dense, silty ip, pc wht chalk

Ls-crm, fhn, mostly dense, silty ip, chalky ip

Ls-crm-gry, vf-fhn, mostly dense, chalky ip

Siltstone gry

Ls-ll brn, fhn, dense, 2nd cal repl

Ls-brn, fhn, dense, foss, Sh-gry, gm, blk

Ls-ll brn, fhn, v, dense, foss, few pc wht chk

Siltstone-gry, Sh-gm

Gry silstone AA

Sh-gm, brn, blk

Gry and crm silty LS

Sh-bk carb

Sh-dk gm, gry

Labette Shale

3240 (-1692)

Sh-bk carb

Ls-crm-brn, vln, dense, 2nd cal repl, foss

Ls-crm, fhn, mostly dense, silty, no vis por, pr scat vul por, occ vug por, no odor, gd floor Only 2 pc's with show.

Ls-crm-brn, fhn, ool, 2nd xln, v, dense, Sh-gry

Ls-crm-brn, f-mxn, mostly dense, 2nd xln, foss ip, ool ip, 2 pc Ls-crm-brn, fhn, dense, ool ip, pr scat vul por, slight show of FO in tray, gd floor and/or several pc's of crm fhn, mostly friable, with dead oil stn. Few pc with brn oil stn & brn FO on break

Ls-crm, vln, foss ip, dense, NS

Cherokee Sh

4276 (-1728)

Sh-bk carb

Ls-gry/crm, vf-fhn, foss ip, 2nd cal repl ip, dense

Ls-crm, fhn, mostly dense, foss ip, some 2nd cal repl, found 3 pc w/SFO, gd floor.

Sh-gm, blk

Ls-crm, fhn, mostly dense

Sh-gm

Ls-crm, vf-fhn, mostly dense, 2nd xln, few pc oil stn w/ P5FO

Ls-crm-gry, fhn, mostly dense

Sh-purple, gm, red

Dolomite most pc fully saturated, mostly dense-dense, suboxic, pr f vug por, few pc breeding oil, G5FO on break, gd show of dk brn FO in tray, gd odor and fluor

Dol-AA plus wht, fhn, mostly dense, pr f vug por, few pc w, foss cast por, few pc mostly saturated, most pc partly gd w/ uneven stn, and many pc with suboxiation, suboxic, G5FO in tray, FO on break, gd odor

Dol-crm, fhn, mostly dense, pr f vug por, many w/vr-abs por, ool & foss ip, few pc brn FO on break, wht chk, few pc lt brn silty, NSO

Dol-crm, fhn, suc, mostly dense-dense, pr f vug por, lt brn silty, NSO

Dol-f-mxn, crm, mostly dense, blk vug por, some foss cast por, SFO on break, slight odor, P5FO in tray, SGM, brn stn pc's with show.

Dol-crm, mostly dense, fhn, lm, foss ip, no odor, lt brn uneven stn, few pc FO on break, scat vul por, wht chalk

Dol-AA, wht chalk, chl-wht opa

DST #1: 3820-3835'

30'-75'-60'-90'

1st Op: Built to 1 1/2"

2nd Op: Built to 3 1/2"

Rec: 55 OS MCWV (15% O, 85%W) SIP: 892-744#

DST #2: 3886-3920'

30'-75'-60'-90'

1st Op: Weak No build

2nd Op: NB

Rec: 78 OS VM (15% O, 85%W) SIP: 863-834#

DST #3: 3954-4005'

30'-30'-30'-30'

1st Op: Weak No build

2nd Op: NB

Rec: 110 OCM (15% O, 85%W) SIP: 899-44#

DST #4: 4294-4345'

30'-75'-60'-90'

Rec: 8 SOS Mud

SIP: 47-25#

DST #5: 4296-4355'

30'-30'-30'-30'

Rec: 10 SOS Mud

SIP: 104-909#

DST #6: 4292-4360'

30'-75'-60'-90'

Rec: 5' CO, 51' OM (51%OI)

SIP: 1014-909#

DST #7: 4359-4365'

30'-75'-30'-30'

Rec: 1' CO, 19' OS MW (25%O, 83%W)

SIP: 1193-1064#

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