KOLAR Document ID: 1364935

| Confiden | tiality Requ | ested: |
|----------|--------------|--------|
| Yes | No | |

KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION Form ACO-1 January 2018 Form must be Typed Form must be Signed All blanks must be Filled

WELL COMPLETION FORM

| WELL | HISTORY - | DESCRIPTION | OF WELL | & LEASE |
|------|-----------|-------------|---------|---------|
| | | | | U LLAGE |

| OPERATOR: License # | API No.: |
|---|--|
| Name: | Spot Description: |
| Address 1: | |
| Address 2: | Feet from Dorth / South Line of Section |
| City: State: Zip:+ | Feet from East / West Line of Section |
| Contact Person: | Footages Calculated from Nearest Outside Section Corner: |
| Phone: () | |
| CONTRACTOR: License # | GPS Location: Lat:, Long: |
| Name: | (e.g. xx.xxxx) (e.gxxx.xxxxx) |
| Wellsite Geologist: | Datum: NAD27 NAD83 WGS84 |
| Purchaser: | County: |
| Designate Type of Completion: | Lease Name: Well #: |
| New Well Re-Entry Workover | Field Name: |
| | Producing Formation: |
| | Elevation: Ground: Kelly Bushing: |
| | Total Vertical Depth: Plug Back Total Depth: |
| CM (Coal Bed Methane) | Amount of Surface Pipe Set and Cemented at: Feet |
| Cathodic Other (Core, Expl., etc.): | Multiple Stage Cementing Collar Used? |
| If Workover/Re-entry: Old Well Info as follows: | If yes, show depth set: Feet |
| Operator: | If Alternate II completion, cement circulated from: |
| Well Name: | feet depth to:w/sx cmt. |
| Original Comp. Date: Original Total Depth: | |
| Deepening Re-perf. Conv. to EOR Conv. to SWD | Drilling Fluid Management Plan |
| Plug Back Liner Conv. to GSW Conv. to Producer | (Data must be collected from the Reserve Pit) |
| | Chloride content: ppm Fluid volume: bbls |
| Commingled Permit #: Dual Completion Permit #: | Dewatering method used: |
| Dual Completion Permit #: SWD Permit #: | |
| EOR Permit #: | Location of fluid disposal if hauled offsite: |
| GSW Permit #: | Operator Name: |
| | Lease Name: License #: |
| Spud Date or Date Reached TD Completion Date or | Quarter Sec TwpS. R East West |
| Recompletion Date Recompletion Date Recompletion Date | County: Permit #: |

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

| KCC Office Use ONLY | | | | | | |
|---|--|--|--|--|--|--|
| Confidentiality Requested | | | | | | |
| Date: | | | | | | |
| Confidential Release Date: | | | | | | |
| Wireline Log Received Drill Stem Tests Received | | | | | | |
| Geologist Report / Mud Logs Received | | | | | | |
| UIC Distribution | | | | | | |
| ALT I II III Approved by: Date: | | | | | | |

KOLAR Document ID: 1364935

| Operator Nam | ne: | | | Lease Name: | Well #: |
|--------------|-----|------|-----------|-------------|---------|
| Sec | Twp | S. R | East West | County: | |

Page Two

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

| Drill Stem Tests Taken | Vrill Stem Tests Taken Yes No (Attach Additional Sheets) | | | Log Formation (Top), Depth and Datum Sample | | | Sample | | |
|---|--|-----------------------|----------------------------------|---|------------------------------------|--------------------------------------|-----------------------|---|-------------------------------|
| Samples Sent to Geolo | | | ⁄es 🗌 No | 1 | Name | Э | | Тор | Datum |
| Cores Taken Electric Log Run Geologist Report / Mud List All E. Logs Run: | | □ Y □ Y | Yes ☐ No Yes ☐ No Yes ☐ No | | | | | | |
| | | Rep | CASING ort all strings set-c | |] Ne | w Used rmediate, productio | on. etc. | | |
| Purpose of String | Size Hole Drilled | Siz | ze Casing et (In O.D.) | Weight Lbs. / Ft. | | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
| | | | | | | | | | |
| | | | | | | | | | |
| [| | | ADDITIONAL | CEMENTING / | SQU | EEZE RECORD | | | |
| Purpose: | Depth Top Bottom | Туре | e of Cement | # Sacks Use | ts Used Type and Percent Additives | | | | |
| Protect Casing Plug Back TD Plug Off Zone | | | | | | | | | |
| Did you perform a hydra Does the volume of the Was the hydraulic fracture | total base fluid of the | hydraulic fr | acturing treatment | | - | ☐ Yes ns? ☐ Yes ☐ Yes | No (If No, s | kip questions 2 ar kip question 3) ill out Page Three | |
| Date of first Production/Inj Injection: | jection or Resumed Pr | oduction/ | Producing Meth | iod: | | Gas Lift 🗌 O | ther <i>(Explain)</i> | | |
| Estimated Production Per 24 Hours | Oil | Bbls. | Gas | Mcf | Wate | er Bb | ls. | Gas-Oil Ratio | Gravity |
| DISPOSITIO | N OF GAS: | | Ν | IETHOD OF COM | MPLE | TION: | | PRODUCTIC Top | DN INTERVAL: Bottom |
| Vented Sold Used on Lease Open Hole Perf. [(If vented, Submit ACO-18.) | | | - | · | nit ACO-4) | юр | Bollom | | |
| Shots Per Perforation Perforation Bridge Plug Bridge Plug Foot Top Bottom Type Set At | | Bridge Plug Set At | | Acid, | | ementing Squeezend of Material Used) | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| TUBING RECORD: | Size: | Set At: | | Packer At: | | | | | |

| Form | ACO1 - Well Completion |
|-----------|---|
| Operator | Larson Engineering, Inc. dba Larson Operating Company |
| Well Name | TDM 1-15 |
| Doc ID | 1364935 |

Tops

| Name | Тор | Datum |
|----------------|------|-------|
| Anhydrite | 2175 | +670 |
| Base Anhydrite | 2201 | +644 |
| Heebner | 3965 | -1120 |
| Lansing | 4007 | -1162 |
| Stark Sh | 4297 | -1452 |
| Pawnee | 4488 | -1643 |
| Ft Scott | 4536 | -1691 |
| Cherokee Sh | 4557 | -1712 |

| Form | ACO1 - Well Completion |
|-----------|---|
| Operator | Larson Engineering, Inc. dba Larson Operating Company |
| Well Name | TDM 1-15 |
| Doc ID | 1364935 |

Perforations

| Shots Per Foot | Perforation Top | Perforation Bottom | BridgePlugTyp e | BridgePlugSet At | Material Record |
|-------------------|--------------------|-----------------------|--------------------|---------------------|--|
| 4 | 4450 | 4453 | CIBP | 4432 | |
| 4 | 4350 | 4353 | | | 150 gal 15% MCA, re-Ac 150 gal 15% MCA SQZ: w/ 50 sx Class A |
| 4 | 4344 | 4346 | | | 4344-46, 4338-41 w/ 250 gal 15%MCA |
| 4 | 4338 | 4341 | | | SQZ: 4344-46, 4338-41, 4291-95 w/ 50 sx Class A |
| 4 | 4291 | 4295 | | | |
| 4 | 4291 | 4295 | | | 250 gal 15% MCA |
| 4 | 4246 | 4252 | | | 250 gal 15% MCA |

| Form | ACO1 - Well Completion |
|-----------|---|
| Operator | Larson Engineering, Inc. dba Larson Operating Company |
| Well Name | TDM 1-15 |
| Doc ID | 1364935 |

Casing

| Purpose Of String | Size Hole Drilled | Size Casing Set | Weight | Setting Depth | Type Of Cement | Number of Sacks Used | Type and Percent Additives |
|----------------------|----------------------|-----------------------|--------|------------------|-------------------|----------------------------|---|
| Surface | 12.25 | 8.625 | 20 | 263 | Class A | | 2% gel, 3% CC 1/4#/sk flocele |
| Production | 7.875 | 5.5 | 15.5 | 4596 | EA-2 | 125 | 7#/sk gilsonite, 1/4#/sk flocele |
| | | | | | | | |
| | | | | | | | |

| S | NIFT | | CHARGE TO: | ARSON E | WOTNEERING INC | |] | | | | TICKET | 300 | 69 |
|----------------------|---|---------------------|-----------------------|-------------------------------------|--------------------------------|---|-----------------|--------------|--------------------|---------------|--------------------|--------------|-----------------------|
| | vices, Inc. | C | CITY, STATE, ZIP CO | DDE | | | | | | | PAGE 1 | OF | |
| SERVICE LOCATIONS | Ks WELL/PROJE | | LEASE | ~~~~ | COUNTY/PARISH | STATE | СПТҮ | | | DA | | NER | |
| 2. | TICKET TYPE | I-IS | ror | IDM | RIG NAME/NO. | | DELIVERED TO | 5 | | | 6-2-17 RDER NO. | SAME | * |
| 3. | | " <u> </u> So | WELL CA | | JOB PURPOSE | VIACT | WELL PERMIT | ເພັງ | BN | | LL LOCATION | <u> </u> | |
| <u>4.</u> | | Jel | | ELOPMENT | | SURFACE | MELL PERMIT | HU. | | | DEGHTON, | le-he | 2. |
| REFERRAL LOCATION | INVOICE INS | TRUCTIONS | <u></u> | | | | | | | | | 140,1 | <u>దాల</u> ఎ 7.ఎగా |
| PRICE REFERENCE | SECONDARY REFERENCE PART NUMBER | E/ LOC | ACCOUNTING ACCT DF | | DESCRIPTION | | QTY. | U/M | ΩΤΥ. | UM | UNIT | AMOUN | <u>π</u> |
| | | 1 | | | 4 | | 40 | | | | 500 | 200 | 200 |
| 5765 | | 1 | | | DEGE- SHALLOW SI | DREACE | | ana | 263 | Fr | 800100 | | 0100 |
| | | | | | | _ | | | | | | | |
| 325 | | 1 | | STANDARD | COMOT | | 165 | 545 | | | 12,25 | 202 | 1.25 |
| 276 | | | | FLOCELE | | | 50 | Ś | | | 2125 | | 2150 |
| 278 | | 1 | | CAICOUM (| HIDRODE | | 7 | sias | | | 4000 | | 00.00 |
| 279 | | <u> </u> | | BETTONETE | GEL | | 3 | <u> ৬</u> ১৯ | | | 25.00 | | 500 |
| | ···· • | -1 | | D-ADR | | | 2 | GAL | | | 42,00 | | 400 |
| <u></u> | | 1 | | SERVICE C | HARGE CEMENT | | 165 | دلاح | | | 1 150 | 24' | 2150 |
| <u></u> | | 1 | | MENDMUM | DRAYAGE CHARGE | | 16210 | uss. | 324.2 | m | 25000 | 250 | 200 |
| | | | | | <u> </u> | | | | | | | | <u>i</u> |
| the terms and cond | Customer hereby acknow litions on the reverse side to, PAYMENT, RELEAS | hereof whic | h include, | REMIT | PAYMENT TO: | SUR OUR EQUIPMENT WITHOUT BREAK WE UNDERSTOO | PERFORMED | AGI | REE UN- DECIDED | DIS- AGREE | PAGE TOTAL | <u>40</u> 70 | 225 |
| LIMITED WARR/ | | 7 2 , 110210 | siri, anu | | | MET YOUR NEED | S? | | | | LAN & | - 407 | 103 |
| MUST BE SIGNED BY CU | STOMER OR CUSTOMER'S AGEN | IT BRIOR TO | | | ERVICES, INC. | PERFORMED WIT | HOUT DELAY? | | | | TUNIC | 3663 | 1 |
| L. L. | A DHal | e | | | . BOX 466 | WE OPERATED TI AND PERFORMED CALCULATIONS |) JOB | | | | TAX | 172 | 1/2 |
| X PUT GUE | | | 0 | NESS CITY, KS 67560 SATISFACTORILY? | | | | ERVICE | | | | | |
| | 17 2 | 200 | 25С.Р.М. | m 785-798-2300 | | | TOMER DID NOT | WISH | | TOTAL | 3836 | 88 | |
| SWIFT OPERATOR | LAYNE WILL | · · | APPROVA | | VICES The customer hereby ackr | nowledges receipt of (| ne materials an | d servio | es listed on th | is ticket | I | Thank | You! |

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| JOBLO | DG | | | | | SWIF | T Seri | uices. Inc. DATE PAGE NO. 6-2-17 1 |
|--------------|------|---------------|----------------------|----|----------|----------|---------------------|--|
| CUSTOM | | EDTNG | WELL NO. | 15 | | LEASE | 'om | JOB TYPE TICKET NO. 85/8" SURFACE 30069 |
| CHART NO. | TIME | RATE (BPM) | VOLUME (BBL) SAL) | | MPS C | | JRE (PSI) CASING | DESCRIPTION OF OPERATION AND MATERIALS |
| | 2200 | | | | | | | ON LOCATEON (RUNNENG CASENG) |
| | | | | | | | | TD-264 SET = 263 TP-263 85/8 # 20 15' CEMWY LEFY IN CASING |
| | 2315 | | | | | | | CORCULATE WELL |
| | 2340 | 6 | 40 | | > | | /১০ | MEX CEMENT- 165 STANDARD, 2% GEL, 3% CC 1/4 * FLOCELE P/SK |
| | 2347 | Ь | 0 | | ~ | | | DISPLACE COMENT |
| | 2350 | | 16.2 | | | | | CEMENT DISPLACED - SHUT IN |
| | | | | | | | | CIRCULATES 20 SKS CEMPIT TO PIT |
| | | | | | | | | WASH TRUCK |
| | 0100 | | | | | | | JOB COMPLETE |
| | | | | | | 1 | | |
| | · | | | | | <u>.</u> | | WAXNE DUSTY, ISAAC |
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| Non-time Dirit and and the approximation of the | S | WIFT | | CHARGE TO: | | rson Engineering | |] | | | | TICI | KET | 3058 | 4 |
|--|-------------------------------|----------------------------------|-------------|--------------|----------------|--|--------------------------------|-----------------|-----------|-----------------|---------------|-----------|------|-----------|----------|
| 1 A José City, KS 1 ST TD_M Lonc INS Disk hen 6-7-17 Owner 2 Instance INS Disk hen 6-7-17 Owner Owner 3 Instance INS Disk hen 6-7-17 Owner Owner 3 Instance Instance INS Disk hen 6-7-17 Owner 4 Server of the former control of the former contro of the former control of the | Seri | vices, Inc. | | ADDRESS | ZIP CO | J J J | | - | | | | PAG | 1 | 」え | |
| Image: Second and the constrained of the constrained | | | 5 DNTRAC | | ASE | IDM Lane | 145 SHIPPED | Digh | ion | | 6 | -9-17 | | | |
| REFERENCE PART NUMBER LOC ACCT OF DESCRIPTION OTY UM MMC AMOUNT S75 1 MILEAGE Trk. # II2 VI VI VI VI VI VI VI MILEAGE Trk. # II2 VI VI </th <th>3. 4. REFERRAL LOCATION</th> <th>WELL TYPE</th> <th></th> <th></th> <th>_</th> <th>TEGORY JOB PURPOSE</th> <th>1.</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>, גי</th> <th>~, 14~, W</th> <th>- Joh</th> | 3. 4. REFERRAL LOCATION | WELL TYPE | | | _ | TEGORY JOB PURPOSE | 1. | | | | | | , גי | ~, 14~, W | - Joh |
| 578 I Pump Charge - Longetring 5% in I isb 10 ml 1250 | REFERENCE | | | | | DESCRIPTION | | QTY. | UM | QTY. | U/M | | | AMOUNT | |
| 4119 1 Rotating Head Repted 5/4 in 1/36 1200 / | | | 1 | | L | | | | | 40 | mí | <u> </u> | | | <u> </u> |
| LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAVMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions. REMIT PAYMENT TO: NUT ESCONDER OR CUSTOMER ACCUSTOMER BACKTONER ACCUSTOMER | | | | | | Rotating Head Rental | <u>`g</u> | | + • • • | | ∇ | _12201 | | | |
| LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions. REMIT PAYMENT TO: | | | | | | <u> </u> | | | | | | | | | i |
| LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions. REMIT PAYMENT TO: VIEW AGREE DURING PAGE PAGE TOTAL WINTOUT BESIGNED AGREE PAGE TOTAL DATE SIGNED CUSTOMER OR CUSTOMER'S AGENT PRIOR TO SAMPTON WOM ON BLIVERY OF GOODS No Additional control of the signed Control of the signe | | | | | - | | | | | | | | _ | | ļ |
| the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions. REMIT PAYMENT TO: OUR EQUIPMENT PERFORMED PAGE TOTAL 69.09 75 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS SWIFT SERVICES, INC. DUR SERVICE WAS 90.4 7103 77 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS FO. BOX 466 NESS CITY, KS 67560 785-798-2300 WE OPERATED THE COURMENT AND SERVICE? AUX 0 440,40 DATE SIGNED CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES THE CUSTOMER DID NOT WISH TO RESPOND TOTAL 814,6 17 | | Υ. | - | | | | | | | | | Ì | | | <u> </u> |
| the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions. REMIT PAYMENT TO: OUR EQUIPMENT PERFORMED PAGE TOTAL 69.09 75 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS SWIFT SERVICES, INC. DUR SERVICE WAS 90.4 7103 77 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS FO. BOX 466 NESS CITY, KS 67560 785-798-2300 WE OPERATED THE COURMENT AND SERVICE? AUX 0 440,40 DATE SIGNED CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES THE CUSTOMER DID NOT WISH TO RESPOND TOTAL 814,6 17 | | | \vdash | | | | | | | | | | | | ! |
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| the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions. REMIT PAYMENT TO: OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN? PAGE TOTAL 2 6909 75 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS SWIFT SERVICES, INC. P.O. BOX 466 NESS CITY, KS 67560 785-798-2300 OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN? Image: Page 100 - 100 | | | + | | <u> </u> | | | | <u> </u> | | | | | | |
| LIMITED WARRANTY provisions. MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS X DATE SIGNED G-9-17 TIME SIGNED D CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES MUST BE SIGNED BY CUSTOMER'S AGENT PRIOR TO SWIFT SERVICES, INC. P.O. BOX 466 NESS CITY, KS 67560 785-798-2300 Image: Customer Acceptance of Materials and Services Instead on this ticket. | the terms and cond | ditions on the reverse side here | of whi | ch include | .] | REMIT PAYMENT TO: | OUR EQUIPMENT WITHOUT BREAK | DOWN? | AGR | | DIS. AGREE | PAGE TOTA | 2 | | 175 |
| START OF WORK OR DELIVERY OF GOODS P.O. BOX 466 X MD PERFORME JOB Date signed IMM SIGNED G-9-17 ISCO CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket. | LIMITED WARR | ANTY provisions. | | | | SWIFT SERVICES, INC. | OUR SERVICE W | AS | | | | - Sn# | | 7703 | 18 |
| DATE SIGNED TIME SIGNED TAME ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket. | | | | | | WE OPERATED T AND PERFORME CALCULATIONS SATISFACTORIL | HE EQUIPMENT D JOB (? | | | | l'are l' |) | 442 | 4D | |
| CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket. | | | | 785-798-2300 | | | | T WISH T | | | | | 8146 | 11 | |
| swift OPERATOR David Kuchn APPROVAL Thank You! | | | R ACC | | DF MA PROVA | TERIALS AND SERVICES The customer hereby ackno u | ov ledges receipt of t | he materials ar | nd servic | es listed on th | ns ticket. | | (| | ou! |

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TICKET CONTINUATION

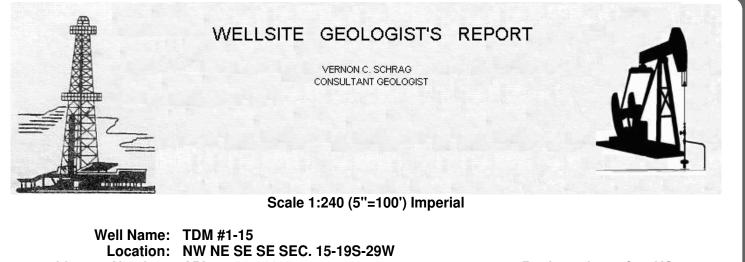
| SW | FT | | ox 466 | | | TICKET CONTINUATION | No. #30584 | | | | | | |
|--------------------|----------------------|-----------------|--------|------------|------|-------------------------------------|--|----------|---|--------------------------|----------|--|--|
| Service | Nes Off | s City : 785 | KS 675 | 560 100 | | Customen Engineering | WELL | m." | 1-15 | DATE 6-9-17 | PAGE OF2 | | |
| PRICE REFERENCE | SECONDARY REFERENCE/ | LOC | ACCT | G DF | TIME | DESCRIPTION | QTY | U/M | QTY UIN | | AMOUNT | | |
| 3)5 | | | | | | Stundard Cement (EA. | 2) | | 175 sh | | | | |
| 284 | | 1 | | | | Culsen | 5 | 1% | 8 4 | 30100 | 2701 | | |
| 283 | : | 1 | | | | Salt | 10 | 1% | 900116 | 00 120 | 1 100 | | |
| 292 | | | | | | Halad 322 | | % | 150.16 | | 1100 | | |
| 276 | | | | | | Flocele | <u> </u> | 116 | 2516 | <u>λ</u> 2 ²⁵ | | | |
| 277 | | 1 | | | | Coul Scul (Gilsonite) | 7 | 116 | 1200116 | 00 75 | 1 100 | | |
| 240 | | | | | | D-Air | | | 219-1 | 42 | 87 | | |
| 280 | | 1 | | | | Flocheck 21 | | | 500 jac | 3 00 | | | |
| 221 | | | | | | Lignid KCL | | | 2lac | 1 25 100 | 50 00 | | |
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| 581 | | 1 | | | | SERVICE CHARGE | CUBIC FEE | | 175 | 152 | 202 | | |
| <i>5</i> 83 | | 11 | | | | MILEAGE TOTAL WEIGHT LOADED MILES 2 | D TON MILES | | 391 | 00 75 | 293 25 | | |
| · . | | | | | | | ······································ | | | | 6909,75 | | |

| JOB LC | | | 1 | | 1 | T Seri | uices. Inc. | DATE PAGE NO |
|----------|---------|-------|-----------------------|-------|--------|--------------------------|------------------------|---------------------------------------|
| CUSTOM | Engine | | WELL NO. | 5 | | DM | JOB TYPE Longstring | TICKET NO. # 30584 |
| CHART | TIME | RATE | VOLUME (BBL) (G.L) | PUMPS | PRESSL | JRE (PSI) | DESCRIPTION OF OPER | ATION AND MATERIALS |
| NO. | 1400 | (BPM) | (BBL) (CAL) | T C | TUBING | CASING | 1 | 51/2" 15.51 |
| | 1400 | | | | | | On location | |
| | | | | | | | RTD-4600' | LTD-4597' |
| | | | | | | | TP- 4599 | SJ - 42,44' |
| | | | | | | | P.C 2142 | |
| | | | | | | | | |
| - | | | | | | | Rig Running Pipe | |
| | | | | | | | <u>y</u> 114 y 1.p- | |
| | 1520 | | | | | | Drop Ball Circulate | Rotale |
| | | | | | | | | · · · · · · · · · · · · · · · · · · · |
| | 1530 | 61/2 | 15 | 1 | | 350 | Pump 15 bbl 14CL | Flush |
| | | 61/2 | 12 | 1 | | 350 | Pump 500gal Flo | check 21 |
| | | 61/2 | 5 | V | | 350 | Pump 5 bbl KCL | Flush |
| | | | | | | | | |
| | | | 7.5 | | _ | | Plug RH-MH | (30-20) |
| | | 1.14 | | | | | | |
| | 1645 | 41/2 | 32 | | | 200 | mix 125 shs EA.2 | ω/7º Gilsonile @ 15 |
| <u>.</u> | | | | | | | | 1 |
| | | | | | | | wash out Pump/1 | Lines |
| | | | | | | | Release Latch Down | <u>rlug</u> |
| | 1705 | 61/2 | Ø | | | 100 | Start Displacement | ····· |
| | 1/0-2 | 61/2 | 90 | | | 300 | Lift Pressure | |
| | | 61/2 | 108 | | | $\overline{\mathcal{T}}$ | Max Lift Pressure | |
| | 1725 | 61/2 | 108.5 | | | $\frac{2}{15\pi}$ | Land Latch Down | Plus |
| | | | | | | | Fancy Farm NOWN | I Ing |
| | | | | | | | Release Pressure | * Plug Hold * |
| | | | | | | | | ing india. |
| | | | | | | | wash up truck | |
| | | | | | | | | |
| | | | | | | | | |
| | 1800 | | | | | | Job Complete | |
| | | | | | | | | |
| | | | | | | | Th | Preshon Wayne |
| | | | - | | | | Dave Dave | Prashon Wayne |
| | | | | | | | | |
| | | | | | | | <u> </u> | |

| SWIF Services, 1 | ADDRESS | D: LARSON EN | g:neeting | | | | r | PAGE | 3039 | 91 |
|--|---|---|---|-------|--|------|--|----------------|---|----------|
| service Locations 1. / LAD Way, KS 2. 3. 4. | WELLIPROJECT NO. | EASE TDM Chrosene Vell Category Deuelopment | COUNTY/PARISH LANL RIG NAME/NO. JOB PURPOSE CEMENT PUT COLLAR | - MOT | City Dighter Dighter Ibcatio Well Permit NO. | | DATE ID () J. A (ORDER NO. WELL LOCATION | 7 | NER | |
| | REFERENCE/ ACCOUNT UMBER LOC ACCT { 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | DF MILEAGE PUND (IND.12 | neit | | 017. UM 40 Min 160 Sk 40 15 2 gel 240 Sk 33882 16 | 0TV. | Ľ | 50 | ANOUNT 200 1250 2520 90 84 360 358 | 60 00 |
| LEGAL TERMS: Customer herel the terms and conditions on the re- but are not limited to, PAYMENT LIMITED WARRANTY provision MUST BE SIGNED BY CUSTOMER OR CUSTO START OF WORK OF DELIVERY OF GOODS X DATE SIGNED | Verse side hereof which includ, , RELEASE, INDEMNITY, an s. MER'S AGENT PRIOR TO AE SIGNED A.M. CUSTOMER ACCEPTANCE | e, REMIT SWIFT S P.O NESS C 785 | PAYMENT TO: ERVICES, INC. BOX 466 ITY, KS 67560 5-798-2300 | | PERFORMED NOWN? AND ? S OUT DELAY? E EQUIPMENT JOB D WITH OUR SERVICE L] YES OMER DID NOT WISH 1 | | 1070 1070 1070 1070 1070 | Drzc y ł | 411,2 - 4376 - 4376 - 181. - 4557 | 20000 |

HC. JOB TYPE CEMULT POIL COLLAR TICKET NO. 30391 PAGE NO. SWIFT Services. Inc. JOBLOG CUSTOMER Engineering WELL NO. LEASE DM Rate (BPM) CHART NO. Volume (BBL) (GAL) PUMPS PRESSURE (PSI) DESCRIPTION OF OPERATION AND MATERIALS TIME ΤC TUBING CASING T 240 sh SAD count of 9t flocale. 23 × 53 2140 portcollar onloc TPX114 0830 Jest-to 1000 psi ~ held open part collar 0647 (000) 1000 thj rote 32 0858 400 2 Mix SIND const @ 11,2000 crec fluid to surface 0903 3Ł 400 35 12 400 + cement to surprise 32 Ëb 500 gus Displace w/ #20 7 shut in 23 close port co Mae test to 1000ps; - kelde RUN 5 jonts Reverse hole clean OGUT 20 Wash terck Pull tool Rock up Job complete fluts Black & server 1030 ŝ

1



Licence Number: API: 15-101-22594 Spud Date: June 02, 2017 Surface Coordinates: 1153' FSL & 439' FEL

Region: Lane Co., KS Drilling Completed: June 09, 2017

Bottom Hole Coordinates: Ground Elevation (ft): 2835' K.B. Elevation (ft): 2845' Total Depth (ft): 4600' Logged Interval (ft): 3800' To: Formation: Cherokee Lime To: RTD Type of Drilling Fluid: Chemical Premix (Displaced) Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR:

Company: Larson Engineering Inc. Address: 562 West State Road 4 Olmitz, KS 67564-8561

DRILLING CONTRACTOR:

Southwind Drilling Co., Rig #1

DP 4.5" XH (16.6#); DC 6-1/4" x 2-3/8" x 461.93', Kelly 40.00', Tool Joint 5.5"; Bit: JZ-ENP0121, 7-7/8", standard jets 14-14-14; rpm 80, WOB 35k; Kelly Bushing 10' above ground level; Larry Beavers (tool pusher).

CASING:

Ran 6 jts new 8-5/8" 20# R3 STC 8rd csg. Tallied 253', set @ 263' KB.

Ran 109 jts new MWP 5-1/2" 15.5# R3 LTC 8rd csg. Tallied 4600.90', set @ 4596' KB.

CIRCULATION SYSTEM:

Pump: BH-800, triplex, 6 x 8.5, 110 spm, Chemical, premix, displaced, earth pits, MudCo/Service Mud, Inc., Jason Whiting

OPEN HOLE LOGS:

Stack: DN, DI (SP), ML (Run-1); Guard (Run-2) due to tool problems; No Sonic; 5" detail LTD-3600; 2" DI to suface casing; Pioneer Wireline Services, Hays, KS, Dan Schmidt, LTD 4597, RTD 4600. Difference probably due to fill on bottom.

DRILL STEM TESTS:

| ROP (min/ft) Five Ten | DST | Lithology | Porosity and Show | Depth | Geological Descriptions | Fi | G (ur ifty ne | nits) | Т | otal | Gas | 5 | | |
|-----------------------------|-----|-----------|-------------------|-------|-------------------------|----|---------------------|-------|---|------|------|---|--|---|
| ROP 15 | | | | | | 0 | | | | Hot- | Wire | | | 1 |

| START DIGITAL ROP | | | | | PLES E NOT | | | | IESTE | D BY | THE S | TATE | AND |
|------------------------------|---------------------------------------|------|---|--------------|-----------------------------------|---------------|----------------|--------|------------------|----------|--------|-------|-------|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | 3850 | LS: It grayish-brown; mic-vf xtal; dense, platey; no visible porosity; N.S., 3870. | | | | | | | | | | |
| | ø | | LS: It grayish brown; mic-vf xtal; soft chalk in part; v-finely oolitic; fine oom por., dull fluor., N.S., 3880. | | | | | | | | | | |
| | | | LS: It-brown to gray-brn; mic-vf xtal; chalky in part; trc. opaq. chert; no visible porosity; N.S. | | | | | | | | | | |
| | | | LS: md-dk grayish brown; vf-xtal; shaley; poor porosity; N.S. | | | | | | | | | | |
| | | 3900 | Shale: dk gray; trace 3910. | | | | | | | | | | |
| | | | LS: md grayish brown; vf-xtal, dense, platey; no visible poroisty; N.S. | | | | | | | | | | |
| | | | LS: It-md grayish brown; mic-vf xtal; chalky in part; no visible porosity; N.S. | | | | | | | | | | |
| | | | LS: as above. LS: It grayish brown; vf-xtal; sli cherty; chalky in part; no visible porosity; N.S. | | | | | | | | | | |
| | | 3950 | Samples in this interval thru to 3960 are not trustworthy. Sample catcher is slack and no shaley | | | | | | | | | | |
| | | | lime from Oread is found. HEEBNER 3965 (-1120) | | | | | | | | | | |
| | - | | Shale: black; carbonaceous; few chips 3980. LS: dense; indistinct; Shale: gray, green; calcareous; poorly expressed. | | | | | | | | | | |
| F Toronto | | | LS: It brown w/white soft chalk; mic-vf xtal; no visible porosity; weak mineral fluor., N.S., 4005. | | | | | | | | | | |
| | | 4000 | LS: It brown w/white chalky portions; mic-vf; no visible porosity; dull mineral fluor; N.S. | 0 | | | | Hot- | Wire | | | | 100 |
| | - | | Shale: green, gray, calc. in part; LANSING 4007 (-1162) LS: It brown; vf-xtal; sli granular in part; trc peletal; dense; no visible porosity; N.S. | | | | | | | | | | |
| | | | LS: It brown; vf-xtal; dense, platey; much opaq. chert; no visible porosity; N.S., 4030. | | | | | | | | | | |
| | | | LS: as above. Shale: green to dk gray; | | | | | | | | | | |
| | | 4050 | Shale: green, gray; LS: It brown; vf-xtal; finely granular; tight int grain porosity: dull fluor : N.S. 4060, 4070 | | | | | | | | | | |
| | | 4 | porosity; dull fluor.; N.S., 4060, 4070. Shale: gray, greenish gray; | | | | | | | | | | |
| | | | LS: It brown; vf-xtal; trc white, opaq. chert; trc. soft chalk; dense; no visible porosity; N.S. LS: as above. | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | 4100 | Shale: gray, dk gray; LS: gray to brown; vf-xtal; dense; no visible porosity; N.S. LS: It brown; vf-xtal; granular, fos-frag, trc oolitic; | | | | | | | | | | |
| | | 4 | tight int grain & fine vug porosity; only dull fluor.; few chips spotted dry stain; no visible oil; <1% 4210 & 4220. | | | | | | | | | | |
| | | | LS: It brown; mic-vf xtal; chalky parts; poor porosity; dull fluor.; N.S. | | | | | | | | | | |
| G-zone | ø | | LS: It brown; vf-xtal; med ~ coarse oomoldic porosity; N.S., trc 4150, much 4160. | | | | | | | | | | |
| | ø | 4150 | LS: oomoldic as above. | | | | | | | | | | |
| | | 41 | LS: It grayish brown; vf-xtal; dense; chalky in part; no visible porosity; N.S. LS: It brn to It gray-brn; mic-vf xtal; chalky; no visible | | | | | | | | | | |
| | | | porosity; N.S. LS; It brown to grayish brown; vf-xtal; dense; no visible porosity; N. S. | | | | | | | | | | |
| | | | LS: It brown & It gray mixed; vf-xtal; dense; no visible porosity; N.S. | | | | | | | | | | |
| | • | 4200 | MUNCIE CREEK 4191 (-1346) Shale: black; carbonaceous; much 4210. LS: md-dk brown; vf-xtal; sli fos-frag; dense; <1% fine drusy vug por. w/spotted dry stain; dull fluor.; no | | | | | | | | | | |
| 0 ROP 15 | • | 42 | visible oil; 4210. LS: It brown; vf-xtal; fine, sli drusy vug por., dull fluor; <% dry stain; no visible oil; 4220. | 0 | | | | Hot- | Wire | | | | 100 |
| | • | | LS: v-lt brown; vf-f xtal; tight int xtal porosity, dull fluor., sli wet stain; VSSO after crushing; 1% spotted dry stains; 4230. | | | | | | | | | | |
| | | | Shale: dk gray, black; 4250. LS: md-dk brown; vf-xtal; dense, platey; N.S. | | | | | | | | | | |
| | • | 4250 | LS: It brown to gray; vf-xtal; few chips drusy vug porosity; dull fluor.; spotted dry stain; no visible oil; 4250. LS: It brown to gray; vf-xtal; <1% fine, drusy vug | | | | | | | | | | |
| | | 42 | porosity w/spotted dry stains; no visible oil; 4260, 4270. | | | | | | | | | | |
| J-zone | 111. I 1211 15 | | LS: It brown; vf-xtal; fine to med oolitic to oomoldic por., trc fos-moldic & vug por., weak spotted fluor., str odor, SSO, 5-10% of por. is spotted to sat. dry | | | | | | | | | | |
| | | | stains; trc 4290, much 4300. LS: It gray; mic-vf xtal; dense to chalky in part; no | | | | | | | | | | |
| • Stark | | 00 | visible porosity; N.S. STARK SH 4297 (-1452) Shale: black; carbon., only few chips 4310. | | SAMF Ked. | PLEIS | MOS | TLY J- | оомс | DLDIC | . SO J | 12 MA | Y BE- |
| | | 4300 | LS: It grayish brown; vf xtal; dense; N.S. Shale: green, gray; calcareous in part; ? | -OON -App | WS 43 IOLDIC EARS IE NOT | C FLO THAT | AT. HO THER | OWEV | ER, Al Y BE K | FTER | LOGS | п – | |
| | | | LS: It brown to gray; mic-vf xtal; much gray to white, opaq chert; minor chalk; no visible porosity; N.S., 4320, 4330. LS: It brown to gray; vf-xtal; dense; minor cherts; no | | | | | | | | | | |
| | | | visible porosity; N.S.; trc stains 4230, 4340 are probably float. HUSHPUCKNEY 4337 (-1492) | | ws 433 | 0, 434 | 0 are | trace. | | | | | |
| | • | 4350 | Shale: black; carbonaceous; 4350. LS: It-md grayish brown; vf-xtal; drusy vug porosity, trc coarse calcites; spotted stains; VSSO; weak fluor., 1% spotted dry stains; 4350. LS: It-md grayish brown; vf-xtal; sli. fos; coarse | | | | | | | | | | |
| | ₩ | 45 | calcites w/stains; weak fluor.; drusy vug porosity; 2-5% spotted dry stains; S.S.O., 4360, decr 4370. Shale: gray; calcareous; | | | | | | | | | | |
| | | | LS: It brown to grayish-brn; vf-xtal; sli granular in part; mostly dense; trc coarse sphalerite; no visible porosity; dull fluor.; N.S. (trc stains 4380 are prob. float). | | | | | | | | | | |
| | | | LS: It brown to grayish-brown; vf-xtal; dense to sli. chalky; semi-opaq. cherts; no visible porosity; N.S. | | | | | | | | | | |
| | | 1400 | LS: dk grayish brown; shaley, peletal 4410. SiltSt: green-gray; marly in part; trc 4410, incr 4420. | | | | | | | | | | |
| | · · · · · · · · · · · · · · · · · · · | 4 | | | | | | | Wire | | | | 100 |
| | • | | LS: md-dk brown; vf-xtal; trc drusy vug porosity w/med-coarse rhombics; heavy, dk brn wet stain; weak fluor., VSSO at best; 1% 4430, decr to trace 4440. | | | | | | | | | | |
| | | | LS/Shale: dk grayish brown; drab; mixed lime & shales; N.S. | | | | | | | | | | |
| | | 4450 | LS: It brown; vf-xtal; <1% drusy vug porosity, | ריים | NOTS | |) | 67- | VEr | | (FP | | |
| | | 4 | weak fluor., spotted to sat. dry stains; no visible oil; nothing at 4460, shows in 4470. LS: It brown; vf-xtal; dense to sli chalky; trc pink chert; no visible porosity; N.S. | | NOT S 460 ?- | | . aviiN | | n (| וטי. | -n A | | -UA |
| | | | LS: md - dk grayish brown; vf-xtal; dense; no visible | | | | _ | | | | | | |
| | | | porosity; N.S. Shale: dk grav. green: PAWNEE 4488 (-1643) | | | | | | | | | | |
| | • | 4500 | LS: v-lt brown; mic-vf xtal; chalky in part; gray, semi-opac. chert; trc coarse vug porosity w/spotted black stain; no visible oil; 4500, 4510. | | | | | | | | | | |
| | | 4 | LS: chalky as above. Shale: black; 4520. LS: md-dk grayish brown; vf-xtal; dense; N.S. | | | | | | | | | | |
| | | | LS: Ind-dk grayish brown; vi-xtal; dense; N.S. Shale: greens; LS: It grayish brown; mic-vf xtal; dense to chalky in part; no visible poroisty; N.S. | | | | | | | | | | |
| Ft. Scott | 1 | | Shale: black; carbonaceous; 4550. FT. SCOTT 4536 (-1691) LS: grayish brown; f-m xtal; various granular chert; | | | | | | | | | | |
| | | 4550 | med oomoldic porosity; trc stain at best; 4550. LS: dk gray; vf-xtal; coarse granular in part; tight int grain por., black sat. stain & scattered vug por with dk brn stain, weak fluor., S.S.O. trace 4550-30 min, 4560. | | | | | | | | | | |
| | | 4 | CHEROKEE SH 4557 (-1712) LS: It-md grayish brown; vf-xtal; dense; chalky in | | | | | | | | | | |
| | | | part; no visible porosity; N.S. LS: as above. | | | | | | | | | | |
| | | | LS: md brown; mic-xtal; dense; N.S., w/gray green shales; LS/Shale as above. | -WIP | PULL Er Tri Tom, (| РТО | COLL | ARS. / | ALMO | ST ST | UCK. | | |
| | | 00 | LS: gray; vf-xtal; dense; no visible porosity; N.S. | | JEERL | | | | | | | | |
| 0 ROP 4600 15 RTD 3:16 PM | | 4600 | ROTARY TOTAL DEPTH 4600 (-1755) | 0 | | | | Hot- | Wire | | | | 100 |