

DAKOTA RESOURCES  
UNIVERSITY EMILIE #4  
1980' FEL & 660' FNL, SEC. 35, BLK. 4  
ULS, ANDREWS CO., TX  
API 42-003-044064  
TD: 11,200  
AFE: 378 PROP: 000307  
PERMIT: 734685

02/28/2012: Surveying the University Emilie #4 well to be drilled.

DWC: \$2,336.83

CTD: \$2,336.83

04/01/2012: Texas Railroad Commission permit for the University Emilie #4.

DWC: \$309.00

CTD: \$2,645.83

05/07/2012: Dirt work.

DWC: \$3,750.00

CTD: \$6,395.83

05/22/2012: Damages for the University Lands for the drilling of the University Emilie #4.

DWC: \$15,000.00

CTD: \$21,395.83

06/30/2012: Clearing off and building approximately one mile of road w/base and 6" caliche from the University Emilie #4 location to the University Emilie #4 lease site.

DWC: \$8,000.

CTD: \$29,395.83

07/31/2012: Started building location.

DWC: \$935.00

CTD: \$30,330.83

09/24-26/2012: Building location.

DWC: \$2,162.50

CTD: \$33,428.330

9/26/2012: Building reserve pits.

DWC: \$935.00

CTD: \$31,265.83

09/27/2012-10/02/2012: Escondido Dirt Works clearing off and building University Emilie #4 location at 260' X 175' as well as 120' X 145' horseshoe shaped reserve pit.

DWC: \$25,000.00

CTD: \$58,428.33

10/08/2012: Shot grade of the University Emilie #4 location.

DWC: \$935.00

CTD: \$59,363.33

11/16/12: Butch's Rat Hole Service lining the 120' X 145' reserve pit with 8mm plastic. Building fence around the reserve pit;

DWC: \$5,700.00

CTD: \$65,063.33

Butch's Rat Hole Service drilling and setting 14" X 40' conductor pipe:

DWC: \$5,750.00

CTD: \$70,813.33

11/16/2012: 360 bbls. of fresh water hauled in to reserve pit after lining had been put down. This is to make sure the plastic lining remains in good shape.

DWC: \$738.00

CTD: \$71,551.33

11/16/2012: 700 bbls. of brine water hauled to the reserve pit to make sure plastic lining isn't damaged by the wind

DWC: \$2,065.00

CTD: \$71,616.33

11/28/2012: 300 bbls. of brine water and 360 bbls. of fresh water hauled to the reserve pit in preparation for spudding in sometime next week.

DWC: \$1,623.00

CTD: \$73,239.33

12/01/12: 1,200 bbls. of fresh water hauled to reserve pit(was informed to only bring three loads).

DWC: \$2,460.00

CTD: \$75,699.33

12/01/12: 1,800 bbls. of brine hauled to reserve pit(was informed to only bring three loads until further directive).

DWC: \$5,310.00

CTD: \$81,009.33

12/20/12: Finish rigging up J B Hunt #2. Mixing spud mud. Welding flowline; RU trash pump; Spudded in at 2:00 am; Drilling 0-183'; cleaning flowline/fixing pump; drilling 183-208';

DWC: \$64,180.00

CTD: \$145,189.00

12/21/12: Drilling to 1,863'; Circulate and condition hole; POH & LD 8" DC; RU and Run CSG; now running 8 5/8' CSG.

DWC: \$95,144.00

CTD: \$240,333.00

12/22/12: Finish running 8 5/8" CSG as follows: float shoe; 1 jt. 8 5/8" 24# K-55 ST & C w/float collar; run 44 jts. 24# K-55 ST & C with 10 Centralizers spaced every 3rd jt.; OAL 1,863' set @ 1,859'; RU cementers and circulate bottoms up cement w/500 sks. Class "C" lite w/2% CACL mixed @ 13.0 lb/gal. followed by 400 sks. class "C" w/2% CACL mixed @ 14.8 lb/gal., full returns throughout job; circulate 189 sks. to pit; bump plug @ 11:30 am; 12/21/12 w/1100 psi.; float held; cut off 8 5/8" CSG; weld on wellhead; NU BOP's; PU BHA and TIH;

DWC: \$3,050.00

CTD: \$243,383.00

12/23/12: Drilling to 2,011'; POH w/5 jts. and repair pump; Drilling to 3,121';

DWC: \$61,434.00

CTD: \$304,817.00

12/24/12: Drilling to 4,444';

DWC: \$64,554.00

CTD: \$369,371.00

12/25/12: Drilling to 6,622';

DWC: \$107,364.00

CTD: \$476,735.00

12/26/12: Drilling to 8,175';

DWC: \$75,594.00

CTD: \$552,329.00

12/27/12: Drilling from 8,175' to 9,100'.

DWC: \$45,450.00

CTD: \$597,779.00

12/28/12: Drilling from 9,100'-10,166'.

DWC: \$55,754.00

CTD: \$653,533.00

12/29/12: Drilling from 10,166' - 10,509'; Rig Service; Drilling from 10,509'-10,722'; Rig repair-Tighten swivel packing and bonnet; swap light plants; mudding up: MW: 10.1, Vis. 40, PH 10; Currently Drilling 11,005'.

DWC: \$43,540.00

CTD: \$698,073.00

12/30/12: Drilling from 10,891' to 11,149'; Service Rig; Drilling from 11,149'-11,200'; TD well; Conditioning mud and circulating; Short trip from 11,200-8,972'; TIH to 11,200; Circulate on bottom; spot pill; TOH to run open-hole logs. MW. 10, Visc. 54, Water loss 9.2, PH 10.

DWC: \$15,746.00

CTD: \$713,819.00

12/31/12: TOH; Tear down tree; PJSM & rig up loggers; run open hole logs; RD Halliburton; RU Permain Power Tongs and Halliburton cementers; Run casing w/Permain Power Tongs;

DWC: \$31,966.00

CTD: \$745,785.00

01/01/13: Finish running 5 1/2" CSG as follows: 5 1/2" float shoe, 2 jts. 5 1/2" 17# L-80 LT&C; 5 1/2" float collar, 93 jts. 5 1/2" 17# CSG(L-80); LT&C CSG; 5 1/2" DV tool; 166 jts. 5 1/2" 17# L-80, LT&C; OAL-11,208'; DV tool @ 7,169'; RD CSG crew; CLT 3 hrs.; RU Howco, CMT 1st stage w/860 sks. VersaCem-H w/.4% halad 344; .3% SuperCBL, .3% HR-800; mixed 14.4lb/gal., Displace w/100 bbl. FW & 158 bbls. mud; Bump plug to over 500 psi; floats held; Open DV tool, CRL 4 1/2 hrs.; RU HOWCO to cement 2nd stage w/600 sks. VersaCem H w/8% bentonite; .25% DAIR and .2% HR-601; Mixed at 11.9 lb/gal., tailed in w/200 sks. HalCem-H w/.1% HR-800; mixed at 15.6 lbs/gal; Bump plug w/1500# over to close DV tool; RD Howco, ND BOP's; set slips with 40m wt. on slips; jet pits, release rig

DWC: \$299,227.00

CTD: \$1,045,012.00

01/02/13: Rigging down JB Hunt Rig #2; waiting on trucks;

DWC: \$0

CTD: \$1,045,012.00

01/03/13: Finish rigging down JB Hunt Rig #2; moving rig to University Emilie #3 location;

DWC: \$0

CTD: \$1,045,012.00

3/14/13: 10:00 am – Big D backhoe to clean up location

DWC:\$1750.00

CTD: \$1,046,762.00

3/21/13: 9:00 am – MIRU, wait on forklift to move pipe and pipe racks for 2 7/8" tbg. 5:30 pm – 120 jts tbg in the hole, PSI test csg @ 1000# and held. 6:00 pm – SDFN. T. Bob Amthor: \$35000.00. United Trucking: \$250.00

DWC: \$35250.00

CTD: \$1,082,012.00

3/22/13: 7:00 am – RIH w tbg to tag and DO DV tool. 9:00 am – Tagged cmt @ 7080', RU power swivel and DO cmt to DV tool @ 7169'. 10:20 am – Tag DV tool @ 7169'. 11:00 am – Finished DO DV tool, RIH to tag bottom. 2:30 pm – Tagged bottom @ 11119', PSI test csg @ 1000# for 30 min and held, TOO. 6:30 pm – 120 jts in hole, SDFN. Lucky Services Reverse Unit: \$3488.00

DWC:\$3488.00

CTD: \$1,085,500.00

3/23/13: 7:00 am – Finish TOO. 9:00 am – United vacuum truck on location to jet RU pit. 10:00 am – SDFW

DWC: \$500.00

CTD: \$1,086,000.00

3/27/13: 3:00 pm – Musslewhite kill truck loaded csg w fresh water and hold PSI 1000# on csg for CBL log, HES WL on location to run GR/CBL. 8:00 pm – HES WL log complete, kill truck released. Lucky Services Rig Time: \$14622.00, Lucky Services Trucking: \$420.00, Bit: \$550.00, HES WL: \$7000, Supervision: \$4000, Musslewhite: \$1000.00

DWC: \$32592.00

CTD: \$1,113,592.00

6/3/13: Currently working on frac date and design, anticipating 6/13 & 6/14.

6/10/13: Currently working on frac design, no date for frac yet.

7/22 – 7/26/13: Set and installed 500 BBL steel tank and 4'x20' heater treater. 4'x20': \$16203.00  
500 BBL: \$13100.00. Plumbing: \$ 13,200.00 Labor: \$9,000.00  
DWC: \$ 51,503.00 CTD: \$ 1,165,095.00

**9/19/13:** Move in and set up 11 frac tanks and 1 acid tank. MIRU water transfer. NU slingshot frac valve and goathead. MIRU HES WL. RIH with CCL and 3- 1/8" guns loaded with 21 gram Max Force Charge, 6 spf and 60° phasing to perf lower zone for frac job in AM.

Strawn (10,997'-10,972')

12 holes @ 10,994'-10,997'

10 holes @ 10,990'-10,993'

8 holes @ 10,976'-10,978'

6 holes @ 10,972'-10,974'

POOH w/ WL and RIH with dump bailer and dump bail 15% HCL @ 10,977'.

MIRU Propetro Frac crew. Rentals: Nabors frac tanks: \$2005. Stallion acid tank: \$560.

DWC: \$2565.00

CTD: \$1,167,660.00

**9/20/13:** 6:00 am: Ran water and sand tests. 7:15 am: Tested high pressure iron to 7000 psi.

**Stage 1:** 8:25 am: Opened well (122 psi), Formation broke @ 3183 psi. Frac Strawn with 4032 gals 15% HCL, 12# PROBOR XL, 2558 BBLs slurry, 76034 lb 30/50 MG Lite, ISIP: 4319 psi, 5 min: 3433 psi, 10 min: 3265 psi, 15 min: 3190 psi, Avg Rate: 50 BPM, Max Rate: 56 BPM, Avg PSI: 4767, MaxPSI: 5203, F.G.: .83 psi/ft, LTR: 2476 BBLs.

**Stage 2:** Lower Cline (10,927-10,824)

RIH with HES WL to set 5 1/2" Obsidian CBP and perf interval with 6 spf and 60° phasing.

Plug @ 10,943'

12 holes @ 10,924'-10,927'

12 holes @ 10,886'-10,889'

10 holes @ 10,853'-10,856'

8 holes @ 10,824'-10,826'

12:25 pm: Formation broke @ 3661 psi. Frac Lower Cline with 3024 gals 15% HCL, 4566 BBLs slurry, 104135 lb 30/50 MG Lite, ISIP: 4356 psi, Avg Rate: 72 BPM, Max Rate: 75 BPM, Avg PSI: 5216, MaxPSI: 5815, F.G.: .84 psi/ft, LTR: 4454 BBL. Job treated as designed, no issues. Increased rate to test formation response.

**Stage 3:** Upper Cline (10,681'-10,586')

RIH with HES WL to set 5 1/2" Obsidian CBP and perf interval with 6 spf and 60° phasing.

Plug @ 10,700'

12 holes @ 10,678'-10,681'

12 holes @ 10,648'-10,651'

10 holes @ 10,614'-10,617'

8 holes @ 10,586'-10,589'

6:40 pm: Formation broke @ 3043 psi. Frac Upper Cline with 3024 gals 15% HCL, 5060 BBLs slurry, 69,804 lb 30/50 MG Lite, ISIP: 3698 psi, Avg Rate: 68 BPM, Max Rate: 76 BPM, Avg PSI: 5078, MaxPSI: 6000, F.G.: .78 psi/ft, LTR: 4985 BBL. Job pumped to design until we reached .90 ppg, pressure began to increase and we switched from sand to wellbore sweep. Dropped rate to 65 BPM and maintained this rate,

continued frac to 1.25 ppg. Pressure increased again and we had to drop rate to 55 BPM, ran wellbore sweep and spotted acid. Abandoned remaining proppant for zone.

**Stage 4: Wolfcamp-C (10,497'-10,248')**

RIH with HES WL to set 5 1/2" Obsidian CBP and perf interval with 6 spf and 60° phasing.

Plug @ 10,508'

12 holes @ 10,494'-10,497'

10 holes @ 10,340'-10,343'

8 holes @ 10,248'-10,250'

9:50 pm: Formation broke @ 2121 psi. Frac Wolfcamp-C with 2016 gals 15% HCL, 5197 BBls slurry, 35,500 lb 30/50 MG Lite and 79,592 lb 30/50 Premium, ISIP: 2282 psi, Avg Rate: 59 BPM, Max Rate: 61 BPM, Avg PSI: 3347, MaxPSI: 3530, F.G.: .66 psi/ft, LTR: 5073 BBl. Job pumped as designed, replaced 1.5 ppg with 30/50 MG Lite and 2 ppg with 30/50 MG Lite.

**9/21/13:**

**Stage 5: Wolfcamp-B (10,172'-10,086')**

RIH with HES WL to set 5 1/2" Obsidian CBP and perf interval with 6 spf and 60° phasing.

Plug @ 10,196'

12 holes @ 10,170'-10,172'

12 holes @ 10,086'-10,088'

12:50 am: Formation broke @ 5987 psi. Frac Wolfcamp-B with 3024 gals 15% HCL, 3948 BBls slurry, 35,400 lb 30/50 Premium, 111,361 20/40 Premium, 24,073 20/40 Garnett, ISIP: 3847 psi, Avg Rate: 50 BPM, Max Rate: 51 BPM, Avg PSI: 4072, MaxPSI: 6251, F.G.: .82 psi/ft, LTR: 4764 BBl. Pressured up on well twice to 6200 psi. Finally established injection @ 2 BPM.

**Stage 6: Wolfcamp-B-2 (9,989'-9,888')**

RIH with HES WL to set 5 1/2" Obsidian CBP and perf interval with 6 spf and 60° phasing.

Plug @ 10,020'

10 holes @ 9,987'-9,989'

8 holes @ 9,965'-9,967'

8 holes @ 9,916'-9,918'

8 holes @ 9,888'-9,890'

3:45 am: Formation broke @ 6158 psi. Frac Wolfcamp-B-2 with 3024 gals 15% HCL, 2933 BBls slurry, 82,865 lb 20/40 Premium, ISIP: 3966 psi, Avg Rate: 50 BPM, Max Rate: 53 BPM, Avg PSI: 4279, Max PSI: 6158, F.G.: .84 psi/ft, LTR: 2844 BBl. Cut sand at 2 ppg because of pressure, spotted acid and flushed well.

**Stage 7: Wolfcamp – A (9,905'-9,756')**

RIH with HES WL to set 5 1/2" Obsidian CBP and perf interval with 6 spf and 60° phasing.

Plug @ 9,840'

12 holes @ 9,803'-9,805'

12 holes @ 9,756'-9,758'

6:30 am: Formation broke @ 2757 psi. Frac Wolfcamp-A with 3024 gals 15% HCL, 4329 BBls slurry, 146,954 lb 20/40 Premium, 73,773 lb 20/40 Garnett, ISIP: 2067 psi, Avg Rate: 41 BPM, Max Rate: 42 BPM, Avg PSI: 2716, Max PSI: 3318, F.G.: .65 psi/ft, LTR: 4091 BBl. Job pumped as designed. Pumped 30k # of left over 20/40 Garnett from previous stage.

**Stage 8: JoMill (9,585'-9,516')**

RIH with HES WL to set 5 ½” Obsidian CBP and perf interval with 6 spf and 60° phasing.

Plug @ 9,630’

12 holes @ 9,583’-9,585’

12 holes @ 9,516’-9,518’

9:25 am: Formation broke @ 4113 psi. Frac JoMill with 2016 gals 15% HCL, 2384 BBls slurry, 97,247 lb 20/40 Premium, 31,294 lb 20/40 Garnett, ISIP: 2396 psi, Avg Rate: 36 BPM, Max Rate: 37 BPM, Avg PSI: 2225, Max PSI: 6394, F.G.: .69 psi/ft, LTR: 2245 BBl. Job pumped as designed, maintained good gel and XL throughout.

**Stage 9:** Leonard Lime/Lower Spraberry (9,393’-9,297’)

RIH with HES WL to set 5 ½” Obsidian CBP and perf interval with 6 spf and 60° phasing.

Plug @ 9,416’

12 holes @ 9,390’-9,393’

12 holes @ 9,297’-9,300’

11:55 am: Formation broke @ 3265 psi. Frac Leonard Lime/Lower Spraberry with 2016 gals 15% HCL, 2418 BBls slurry, 93,868 lb 20/40 Premium, 35,989 lb 20/40 Garnett, ISIP: 1355 psi, Avg Rate: 36 BPM, Max Rate: 36 BPM, Avg PSI: 2007, Max PSI: 3265, F.G.: .58 psi/ft, LTR: 2278 BBl. Job pumped as designed, maintained good gel and XL throughout.

**Stage 10:** Lower Spraberry (9,137’-9,103’)

RIH with HES WL to set 5 ½” Obsidian CBP and perf interval with 6 spf and 60° phasing.

Plug @ 9,160’

12 holes @ 9,134’-9,137’

12 holes @ 9,103’-9,106’

2:15 pm: Formation broke @ 3583 psi. Frac Lower Spraberry with 2016 gals 15% HCL, 2327 BBls slurry, 96,141 lb 20/40 Premium, 24,040 lb 20/40 Garnett, ISIP: 1609 psi, Avg Rate: 35 BPM, Max Rate: 36 BPM, Avg PSI: 1797, Max PSI: 4377, F.G.: .61 psi/ft, LTR: 2197 BBl. Job pumped as designed, maintained good gel and XL throughout.

**Stage 11:** Upper Spraberry (8,974’-8,820’)

RIH with HES WL to set 5 ½” Obsidian CBP and perf interval with 6 spf and 60° phasing.

Plug @ 8,995’

12 holes @ 8,972-8,974’

10 holes @ 8,932’-8,934’

8 holes @ 8,860’-8,862’

6 holes @ 8,820’-8,822’

4:30 pm: Formation broke @ 1903 psi. Frac Upper Spraberry with 1008 gals 15% HCL, 2243 BBls slurry, 96,460 lb 20/40 Premium, 21,695 lb 20/40 Garnett, ISIP: 1835 psi, Avg Rate: 35 BPM, Max Rate: 36 BPM, Avg PSI: 1634, Max PSI: 2145, F.G.: .64 psi/ft, LTR: 2115 BBl. Job pumped as designed, maintained good gel and XL throughout.

8:30 pm: RIH with HES WL to set 5 ½” Obsidian CBP.

Plug @ 8622’.

HES WL/Perforating/CBP: \$76,006.00, Propetro Frac: \$631,708.00, Supervision: \$3000.00, WH/Frac valve: \$15,000.00, Frac Tanks: \$770.00, Acid tank: \$600.00, Water Transfer: \$35,310.00, Light plant/Port-a-John/Manlift: \$1660.00, Chemical: \$40000

DWC: \$804,054.00

CTD: \$1,971,714.00

**9/24/13:** Daily Rentals: \$1000.00  
DWC: \$1000.00

CTD: \$1,972,714.00