

2000  
5/17/99  
County/State: Andrews County, Texas. Field: Block 2 (Grayburg)

Objective: 4,900', (San Andres/Grayburg).

G.L. Elevation: 3,082' / K.B. Elevation: 3,097'. Contractor: Key Energy Drilling, Inc. Rig #12

42.003.38468

04/09/99: First Report: The Water Board Letter & Drilling Permit are back & approved. The location was bid & let to M & P Construction Co., Inc. out of Kermit, TX. Have the road, location, & pits 90% complete. Scheduled to drill after the University #5. (NW)

04/10-12/99: The road, location, & pits complete. Scheduled to drill after the University #5. (NW)

04/13/99: The road, location, & pits complete. Scheduled to drill after the University #5. (NW)

04/14/99: The road, location, & pits complete. Scheduled to drill after the University #5. (NW)

04/15/99: The road, location, & pits complete. Will MIRURT & spud tomorrow. (NW)

04/16/99: Plan to MIRURT & spud today. (NW)

04/17/99: Day #1, Drilling @ 1,370', Red Bed, Made 1,370'/13 1/4 hrs, Avg-103.4' hr, MW-8.8, Vis-31, PH-9.5, Pump #1-5 1/2 x 14 x 67, 324-GPM, PP-800#, Surveys @ 437'-1/4, & @ 904'-1/4, Bit #1-12 1/4" Varel ER-5074 (RR), 14/14/14, In @ 0', Has Cut 1,370'/13 1/4 hrs, Avg-103.4' hr, WOB-55M, RPM-110, BHA-Bit, XO, BS, 6-8" DC's, XO, & 21-6 1/2" DC's, (840.90'). Had 13 1/4 hrs-Drilling, & 1/2 hr-SHT. Spudded w/ Key Energy Drilling, Inc's., Rig #12 @ 4:15 p.m., 04/16/99. Presently drilling ahead w/ full returns @ 1-2 min/ft. Hauled 21 loads of FW & 4 loads of BW. Mixed 35-gel, 5-paper, & 4-Lime. DMC-\$198, AMC-\$198, DC-\$26,453, AT-\$26,453, AFE-\$245,116. (NW)

04/18/99: Day #2, NUBOP @ 1,652', Anhydrite, Made 282'/5 hrs, Avg-56.4' hr, MW-8.8, Vis-31, PH-9.5, Pump #1-5 1/2 x 14 x 68, 328-GPM, PP-800#, Surveys @ 1,394'-1/4, & @ 1,652'-1/2. Bit #1-12 1/4" Varel ER-5074 (RR), 14/14/14, In @ 0', Out @ 1,652', Cut 1,652'/18 1/4 hrs, Avg-90.5' hr, WOB-55M, RPM-110, BHA-Bit, XO, BS, 6-8" DC's, XO, & 21-6 1/2" DC's, (840.90'). Had 5 hrs-Drilling, 2 3/4 hr-Trip, 3/4 hr-SHT, 3/4 hr-Circulate, 2 hrs-Running 8 5/8" Casing, 1 1/4 hrs-Cementing, 6 hrs-WOC, & 5 1/2 hrs NUBOP. Ran a total of 38 jts of 8 5/8" J-55 24# ST&C R-3 casing (Includes rig's landing jt), totaling 1,651', set casing @ 1,650'. RU BJ Services & cemented w/ 70 BFW ahead, 550 sacks of Class "C" w/ 4% gel, 2% CaCl2, & 1/4# /sack of Cello Flake w/ a yield of 1.75', mixed @ 13.5 ppg. Tailed w/ 150 sacks of Class "C" w/ 2% CaCl2, w/ 1/4# /sack of Cello Flake w/ a yield of 1.35 mixed @ 14.8 ppg. The total of both slurries was 1,165 cu. ft. Had good circulation throughout the job, the plug was down w/ 950# @ 6:30 p.m., 04/17/99, the float held good, circulated 128 sacks of cement to the reserve pit. Presently NUBOP. Hauled 1 load of FW & 18 loads of BW. Mixed no mud. DMC-\$0, AMC-\$198, DC-\$15,768, AT-\$42,221, AFE-\$245,116. (NW)

04/19/99: Day #3, Drilling @ 2,582', Salt/Anhydrite, Made 930'/12 3/4 hrs, Avg-72.9' hr, MW-10.0, Vis-29, PH-11, Pump #1-5 1/2 x 14 x 67, 324-GPM, PP-925#, Surveys @ 2,088'-1 1/4, @ 2,334'-3/4, Bit #2-7 7/8" Reed HP-53, 14/14/14, In @ 1,652', Has Cut 930'/12 3/4 hrs, Avg-72.9' hr, WOB-50M, RPM-60-75, BHA-Bit, BS, & 21-6 1/2" DC's, (656.03'). Had 12 3/4 hrs-Drilling, 3/4 hr-Trip, 1/2 hr-SHT, 1/2 hr-NUBOP, 8 hrs-Fishing, 1 hr-Test BOP & Casing, 1/2 hr-Drilling Cement, Plug, FC, & Shoe. Tested the blind rams, choke manifold & casing to 1,000#, OK. Drilled the plugs, FC, & 15' of cement out of the shoe jt, & tested the pipe rams, choke manifold & casing to 1,000#, OK. Dropped a BOP nut in the hole while NUBOP, made 2 magnet runs & recovered the fish. Presently drilling ahead w/ full returns @ 1-2 min/ft. Hauled 3 loads of FW. Mixed 15-Lime & 3 Paper. DMC-\$78, AMC-\$276, DC-\$7,711, AT-\$49,932, AFE-\$245,116. (NW)

## Ring University #4

04/21/99: Day #5, Drilling @ 4,648', Dolomite, Made 628'/22 3/4 hrs, Avg-27.6' hr, MW-10.0, Vis-29, PH-9.5, Solids-0.3, Chlorides-188M, Pump #2-5 1/2 x 14 x 64, 309-GPM, PP-1,000#, Surveys @ 3,990'-1 1/2, & @ 4,455'-1/2, Bit #2-7 7/8" Reed HP-53, 14/14/14, In @ 1,652', Has Cut 2,996'/58 3/4 hrs, Avg-51.0' hr, WOB-50M, RPM-60, BHA-Bit, BS, & 21-6 1/2" DC's, (656.03'). Had 22 3/4 hrs-Drilling, 1 hr-SHT, & 1/4 hr-SR. Presently drilling ahead w/ full returns @ 2-3 min/ft. Hauled no water. Mixed 12-Lime, 53-Starch, & 10 Magma Fiber. DMC-\$1,004, AMC-\$1,293, DC-\$7,861, AT-\$68,784, AFE-\$245,116. (NW)

04/22/99: Day #6, Logging @ 4,940', Dolomite, Made 292'/12 1/4 hrs, Avg-23.8' hr, MW-10.0, Vis-29, WL-6.4, PH-10.0, Solids-0.3, Chlorides-188M, Pump #2-5 1/2 x 14 x 64, 309-GPM, PP-1,000#, Survey @ 4,940'-1 1/4, Bit #2-7 7/8" Reed HP-53, 14/14/14, In @ 1,652', Out @ 4,940', Cut 3,288'/71 hrs, Avg-46.3' hr, T-4, B-4, 1/8 out, WOB-50M, RPM-62, BHA-Bit, BS, & 21-6 1/2" DC's, (656.03'). Had 12 1/4 hrs-Drilling, 2 hrs-Trip, 1/4 hr-SHT, 1/4 hr-SR, 2 hrs-Circulate, & 7 1/4 hrs-Logging. Lost complete returns while C&C the hole to log. Pumped 1-12 ppb Magma Fiber pill & regained full returns, (Lost approx 160 bbls). Finished circulating & spotted a 40 bbl pill on bottom. Ran Schlumberger's "Platform Express" log from the Logger's TD of 4,940' back up to 3,952', ran the GR to surface. Took 10 Side-wall cores, Presently POOH w/ the coring tool. Hauled 2 loads FW. Mixed 2-Lime, 14-Starch, 10 Magma Fiber, & 14 Gel. DMC-\$451, AMC-\$1,744, DC-\$5,870, AT-\$74,654, AFE-\$245,116. (NW)

04/23/99: Day #7, RDRT @ 4,940', MW-10.0, Vis-29, WL-8.5, PH-9.5, Solids-1.0, Chlorides-188M, Had 1 1/2 hrs-Trip, 2 1/4 hrs-Circulate, 1 hr-Logging, 3 1/4 hrs-LDDP & DC's, 3 3/4 hrs-Running 5 1/2" casing, 1 1/4 hrs-Cementing, & 3 hrs NDBOP, set slips, & ruff-cut the 5 1/2" casing. Mixed 7-Starch, 10 Magma Fiber, & 14 Gel. Lost approx 30 bbls while circulating to LDDP. Spotted a 10 ppb Magma-Fiber pill on bottom prior to coming out to run casing. Ran a total of 111 jts of 5 1/2" J-55 15.50# LT&C R-3 casing, totaling 4,947', set @ 4,942'. The casing was sandblasted up to 4,403' & centralized up to 4,295'. RU BJ Services & pumped 20 BFW, 500 gallons of "Surebond", & 20 BFW as a pre-flush. Cemented w/ 475 sacks of 50/50 "Poz C" cement w/ 10% gel, 5% salt, 0.5% FL-52, 5# Gilsonite, & 1/4# Cello Flake w/ a yield of 2.48 mixed @ 11.8 ppg. Tailed w/ 225 sacks of 50/50 "Poz C" cement w/ 5% salt, 0.6% FL-62, 0.5% CD-32, 0.2% SMS, & 1/4# Cello Flake w/ a yield of 1.27 mixed @ 14.2 ppg. The total of both "Batch-Mixed" slurries was 1,464 cu. ft. Reciprocated the casing throughout the circulation & during cementing. Had good returns throughout the job, the plug was down w/ 1,650# @ 6:45 p.m., 04/22/99. The floats held good, circulated 81 sacks of cement to the reserve pit. Released Key Energy's Rig #12 @ 9:45 p.m., 04/22/99. DMC-\$373, AMC-\$2,117, DC-\$38,582, AT-\$118,977, AFE-\$245,116. (NW)

04/24/99: RU Baker Atlas WL on their mast trailer & ran a CNL/GR/CCL from the WL PBTD of 4,888' up to 2,880', ran the GR back to the surface. Ran a CBL/GR/CCL from 4,888' up to 2,880' & across the top 300' of the casing, TOC is @ 46'. Have good bond across the intervals to be perforated, RDWL. DC-\$1,312, AT-\$120,289, AFE-\$245,116. (NW)

04/25/99: Back drug & cleaned the location, welded on a 5 1/2" bell nipple, & set anchors w/ markers. Will MIRPU for completion after the University #5. DC-\$849, AT-\$121,138, AFE-\$245,116. (NW)

04/26/99: Will move on for completion after the University #5. AT-\$121,138, AFE-\$245,116. (NW)

## **Ring University #4**

04/27/99: Will move on for completion late this afternoon or tomorrow a.m.  
AT-\$121,138, AFE-\$245,116. (NW)

04/28/99: Unloaded & racked 158 jts of 2 7/8" J-55 6.5# EUE 8rd R-2 tubing. MIRUPU, installed the tubing head, & NUBOP. SION, will RIH w/ bit & scraper this a.m.  
DC-\$782, AT-\$121,920, AFE-\$245,116. (NW)

04/29/99: PU & RIH w a 4 3/4" tooth bit, a 5 1/2" casing scraper, XO, 2 7/8" SN, & 157 jts of 2 7/8" J-55 6.5# EUE 8rd R-2 tubing. Reciprocated each jt of tubing in the hole, (In/out/in), rotating 1/3 to 1/2 round between lowerings. Tagged up @ 4,892', RU BJ Services, & circulated bottoms up w/ 60 BF, (Recovered 3.0 bbls of cement-colored water). Pressured the casing to 3M#, for 5 minutes, held good. RU & pumped 500 gallons of 15% HCl acid, 10 BFW, 500 gallons of Xylene, followed by 130 bbls of filtered, (2 microns), 2% KCL water @ 1.5 BPM, (Rotating the tubing @ 5 RPM throughout the entire clean-up process). RD BJ Services, POOH w/ 157 jts of tubing, SN, XO, scraper, & bit. SION, will perforate & acidize this a.m.  
DC-\$17,048, AT-\$138,968, AFE-\$245,116. (NW)

04/30/99: RU Baker Atlas WL & perforated the Upper San Andres w/ a 4" "Predator" gun, loaded w/ 4-38.5 gram (0.49 EHD/42.5" PD), 90 degree phased JSPF from 4,784'-4,798' for a total of 58 holes over the 14' interval. Made no correction for WL Creep to perforate, RDWL. PU & RIH w/ a 2 3/8" x 5 1/2" "Full-Bore" packer, XO, 2 7/8" SN, & 153 jts of 2 7/8" tubing down to 4,800'. RU BJ Services & spotted 3 BA w/ filtered 2% KCL water. POOH up to 4,691', reversed w/ 10 bbls of filtered 2% KCL water, & set the packer @ 4,691' in 20 pts tension. Pressured the casing to 500# & let the acid soak a total of 30 minutes. Acidized w/ 1,200 gallons of 15% HCl acid w/ additives & 2-500# stages of rock salt, (400 gallons of acid / 500# of rock salt / 400 gallons of acid / 500# of rock salt / 400 gallons of acid). The formation broke @ 1,550# @ 1 BPM, the AIR was 4 BPM @ 1,000#. Had good block action, (1<sup>st</sup> block on, the pressure increased from 880# to 3,000# @ 1/4 BPM, back down to 1,000# / 2<sup>nd</sup> block on, the pressure increased from 950# @ 4 BPM, to 2,000# @ 4 BPM, & back down to 900# @ 4 BPM). Flushed the acid 1 bbl shy of the top perforation @ 4,784' w/ filtered 2% KCL water. The ISDP was 600#, 5 min-360#, 10 min-305#, & the 15 minute SITP was 280#, have 84 BLWTR, RD BJ Services. Opened the well to the TT w/ 200#, flowed back 9 BF in 5 minutes, & died. RU the swab, & recovered 69 BF in 4 1/2 hrs. The last 2 hrs, making 5 runs/ hr, the FL was a constant 4,400' FS, recovering 11 BF/ hr, pulling from the SN @ 4,683', the final oil cut was 12-15%, w/ very little gas. Have recovered a total of 78 bbls of the 84 BL, have 6 BLWTR. RD the swab & left the well open to the TT overnight. Will continue swab testing this a.m.  
DC-\$7,872, AT-\$138,968, AFE-\$245,116. (NW)

#### Ring University #4

05/01/99: Left the well open to the TTON. RU the swab, IFL 1,000' FS, pulled from 1,900', recovered 4 BF, 100% oil. Afterwards, swabbed back a total of 85 BF/8 3/4 hrs. The last 3 hrs, making 4 runs/hr, the FL was a constant 4,450' FS, recovering 6-7 BFPH, pulling from the SN @ 4,863', w/ an oil cut of 40-50%, w/ very little gas. Recovered a total of 89 BF for the day, for a 2 day total of 167 BF, 83 BOL. RD the swab, released the 5 1/2" "Full-Bore" packer @ 4,691', & POOH w/ 150 jts of 2 7/8" tubing, SN, XO, & the packer. SIFWE, will perforate additional San Andres Monday a.m. DC-\$1,612, AT-\$148,452, AFE-\$245,116. (NW)

05/02/99: SIFWE, will resume operations Monday a.m. DC-\$0, AT-\$148,452, AFE-\$245,116. (NW)

05/03/99: SIFWE, will resume operations this a.m. DC-\$0, AT-\$148,452, AFE-\$245,116. (NW)

05/04/99: RU Baker Atlas WL & perforated additional San Andres w/ a 4" "Predator" gun, loaded w/ 4-38.5 gram (0.49 EHD/43.5" PD), 90 degree phased JSPF from 4,798'-4,812' for a total of 56 holes over the 14' interval. Made no correction for WL Creep to perforate, RDWL. PU & RIH w/ a 2 3/8" x 5 1/2" "Full-Bore" packer, XO, 2 7/8" SN, & 154 jts of 2 7/8" tubing down to 4,814'. RU BJ Services, pumped 20 bbls of filtered 2% KCL water, & spotted 3 BA w/ filtered 2% KCL water. POOH up to 4,691', reversed w/ 10 bbls of filtered 2% KCL water, & set the packer @ 4,691' in 20 pts tension. Pressured the casing to 500# & let the acid soak a total of 30 minutes. Acidized w/ 1,500 gallons of 15% HCl acid w/ additives & 1,750# of rock salt, (750# of rock salt / 500 gallons of acid / 500# of rock salt / 500 gallons of acid / 500# of rock salt / 500 gallons of acid). The AIR was 4 BPM @ 800#. Had good block action, (1<sup>st</sup> block on, the pressure increased from 635# @ 4 BPM up to 3,000# @ 1/4 BPM / 2<sup>nd</sup> block on, pressure increased from 660# @ 4 BPM up to 3,000# @ 2 BPM / 3<sup>rd</sup> block on, pressure increased from 700# @ 4 BPM up to 3,000# @ 1/4 BPM). Flushed the acid 1 bbl shy of the top perforation @ 4,784' w/ filtered 2% KCL water. The ISDP was 450#, 5 min-280#, 10 min-260#, & the 15 minute SITP was 250#, have 108 BLWTR, RD BJ Services. Opened the well to the TT w/ 230#, flowed back 8 BF in 5 minutes, & died. RU the swab, & recovered 102 BF in 6 hrs. The last 3 hrs, making 4-5 runs/hr, the FL was a constant 4,200' FS, recovering 12-14 BF/hr, pulling from the SN @ 4,683', the final oil cut was 40%, w/ very little gas. Have recovered a total of 110 bbls of the 108 BL, 2 BOL. RD the swab & left the well open to the TTON. Will continue swab testing this a.m. DC-\$7,438, AT-\$155,890, AFE-\$245,116. (NW)



#### Ring University #4

05/05/99: Left the well open to the TTON. Dropped a 2 7/8" SV & RU the swab. The IFL was @ 900' FS, pulled from 1,900' FS, recovered 6 BF-100% oil. Afterwards, recovered 55 BF/4 hrs. The last 2 hrs, making 4 runs/ hr, the FL was a constant 4,400' FS, recovering 8-10 BF/hr, pulling from the SN @ 4,683', the final oil cut was 40%, w/ very little gas. Recovered a total of 61 BF for the day, have a 2-day total of 171 BF, 63 BOL. RD the swab, fished the SV, released the 5 1/2" "Full-Bore" packer @ 4,691' & POOH w/ 4 stands of tubing. SION due to the high winds. Will finish POOH, perforate, & acidize additional San Andres this a.m.  
DC-\$1,629, AT-\$157,519, AFE-\$245,116. (NW)

05/06/99: Finished POOH w/ the 2 7/8" tubing, SN, XO, & packer. RU Baker Atlas WL, RIH, & tagged up @ 4,814', (The bottom perforation was to be @ 4,824'), POOH & RDWL. PU & RIH w/ a 2 7/8" notched collar, SN, & 155 jts of 2 7/8" tubing. Tagged up @ 4,814', RU BJ Services & a JUS. Washed through the rock salt bridge w/ filtered 2% KCL water from 4,814' down to 4,819' & fell through. Continued RIH down to PBD of 4,892', circulated bottoms up plus 15 bbls of filtered 2% KCL water to clear the tubing, RD BJS & the JUS. POOH w/ the tubing, SN, & NC. RU WL & perforated additional San Andres w/ a 4" "Predator" gun, loaded w/ 4-38.5 gram (0.49 EHD/43.5" PD), 90 degree phased JSPF from 4,812'-4,824' for a total of 48 holes over the 12' interval. Made no correction for WL Creep to perforate, RDWL. PU & RIH w/ a 2 3/8" x 5 1/2" "Full-Bore" packer, XO, 2 7/8" SN, & 154 jts of 2 7/8" tubing down to 4,826'. RU BJ Services & spotted 3 BA w/ filtered 2% KCL water. POOH up to 4,691', reversed w/ 10 bbls of filtered 2% KCL water, & set the packer @ 4,691' in 20 pts tension. Pressured the casing to 500# & let the acid soak for a total of 30 minutes. Acidized w/ 1,500 gallons of 15% HCl acid w/ additives & 1,750# of rock salt, (750# of rock salt / 500 gallons of acid / 500# of rock salt / 500 gallons of acid / 500# of rock salt / 500 gallons of acid). The AIR was 4 BPM @ 1,000#. Had fair block action, (1<sup>st</sup> block on, the pressure increased from 450# @ 4 BPM up to 1,600# @ 3.6 BPM back down to 645# @ 4 BPM / 2<sup>nd</sup> block on, pressure increased from 650# @ 4 BPM up to 1,150# @ 4 BPM, back to 730# @ 4 BPM / 3<sup>rd</sup> block on, pressure increased from 700# @ 4 BPM up to 1,150# @ 4 BPM, down to 850# @ 4 BPM). Flushed the acid 1 bbl shy of the top perforation @ 4,784' w/ filtered 2% KCL water. The ISDP was 420#, 5 min-280#, 10 min-240#, & the 15 minute SITP was 225#, have 121 BLWTR, RD BJ Services. Opened the well to the TT w/ 200#, flowed back 8 BF in 15 minutes, & died. RU the swab, & recovered 93 BF in 4 hrs. The last hr, made 4 runs, the FL was a constant 4,150' FS, recovered 17 BF, pulling from the SN @ 4,683', the final oil cut was 35%, w/ very little gas. Recovered a total of 101 bbls of the 121 BL, 20 BLWTR. RD the swab & left the well open to the TTON. Will POOH w/ the packer, & prep for production today.  
DC-\$8,589, AT-\$166,108, AFE-\$245,116. (NW)

05/07/99: Left the well open to the TTON. Released the 5 1/2" "Full-Bore" packer @ 4,691', RIH w/ 6 jts of 2 7/8" tubing, & tagged up @ 4,843'. RU a kill truck & JUS, washed a rock salt bridge w/ filtered 2% KCL water from 4,842' down to 4,869' & fell through. Continued RIH down to PBD of 4,892', circulated bottoms up plus 15 bbls of filtered 2% KCL water to clear the tubing. POOH w/ 157 jts of 2 7/8" tubing, SN, XO, & the packer. PU & RIH w/ a 2 7/8" BPPS, a 2 7/8" x 5 1/2" TAC, 2 7/8" SN, & 155 jts of 2 7/8" J-55 6.5# EUE 8rd R-2 tubing. NDBOP, set the TAC in 15 pts tension, & NUWH. The 13' KB corrected EOT is @ 4,851', the TAC is @ 4,844', & the SN is @ 4,843'. PU & RIH w/ a 1 1/4" x 1' strainer nipple, a 2 1/2 x 1 1/2 x 20 DSV, STV, 4' SMP, RHBC pump, 24-7/8" guided rods, 104-3/4", & 64-7/8" WCN Series "90" / Grade "KD" rods. SO, L&P the tubing to 500#, HGPA, clamped-off, & RDPU. Will set the pumping unit this a.m. DC-\$15,639, AT-\$181,747, AFE-\$245,116. (NW)

05/08/99: Leamco set a Lufkin C-320G-256-120 pumping unit w/ a Size 3 Econo-Pac electric motor. Electrified the motor & started pump testing the well to the TT @ 3:00 p.m., 05/07/99. The unit is running 7.5-85" SPM, pulling 45 amps on the weights & 38 amps on the rods. Will monitor for necessary speed & balance changes.  
DC-\$20,379, AT-\$202,076, AFE-\$245,116. (NW)

05/09/99: 0 BO/156 BW. DC-\$50, AT-\$202,176. (NW)

05/10/99: 74 BO/77 BW. DC-\$50, AT-\$202,226. (NW)

05/11/99: 72 BO/66 BW, FL @ 128 JFS. DC-\$1,090, AT-\$203,166. (NW)

#### Ring University #4

05/12/99: 101 BO/40 BW. DC-\$302, AT-\$203,468. (NW)

#### Ring University #4

05/13/99: 102 BO/41 BW. DC-\$298, AT-\$203,766. (NW)

#### RING UNIVERSITY #4

05/14/99: 100 BO/39 BW. DC-\$320, AT-\$204,086. (NW)

05/16/99: 104 BO/47 BW. DC-\$50, AT-\$204,510, AFE-\$245,116. (NW)

05/17/99: 101 BO/48 BW. DC-\$50, AT-\$204,560, AFE-\$245,116. (NW)