

ELLIOTT A LS #1

19-31N-11W

The attached completion report with attachments explain the complex operations incurred while drilling this well. The completion report has no testing information due to Amoco's request to be able to flow this well directly down the sales line after perforations. Complete and final testing information will be furnished prior to the 30 day deadline required by the BLM.

Please contact Donna Dallas at Amoco's Farmington Operations Center at (505) 326-9216. Amoco would like to pick this report up from the BLM and hand carry to the NMOCD personally to facilitate approval of the C-104.

Elliott A LS # 1 - Deepening - Subsequent

MIRUSU 11/5/95. Blow down tbg & csg & kill well with 20 bbls 2% clayfix wtr and pull donut. Prep to TOH and lay down tbg. Lay down 257 jts 2.375" 4.7# J-55 tbg. Last 40 jts were pitted. Tubing bodies and couplings worn very thin. RU basin perforators and wireline, set drillable BP @ 2500'. Rig down basin perforators. Nipple down old tbg head and weld on 5" piece of 7" csg and NU new tbg head. NU 7.0625" BOP and washington rotating head and rubber. Lay blooie lines. Test BOP, pipe, blind rams, 7" stub and pack off to 1350 PSI. Tst'd good.

TIH w/bit and scraper to BP @ 2500'. Pressure tst 7" csg from 2500' to surface to 1200 PSI. Tst'd good.

Unload hole from 2500' to surface. Drill out bridge plug @ 2500'. TIH with 7" scraper from 2500' to 4752'. Tag fill @ 4762'. TOH and lay down scraper. Pull up bridge plug and pkr. TIH set BP @ 4550'. Set pkr @ 4520'. Pressure tst BP to 1200 PSI. Tst'd good. Pressure tst'd backside from 4520' to surface to 1200 PSI. Tst'd good.

Release pkr and unload hole from 4520' to surface. Rel BP and TOH with BP and pkr. Pull up 6.26" bit and TIH w/casing collar locator and drill pipe to 4760' tagging fill. Unload hole with air. Hole making 1/2" to 3/4" stream of wtr. Ran air mist and cleaned out fill from 4770' to 4940'. Cleaned out with air from 4940' to 4950'. Blew hole with air to dry up hole and drill to 4986'. Blew hole dry and well started dusting drilling from 4986' to 5074'. Blew hole clean and TIH w/survey and TOH w/survey @ 5030'. Well one degree out. Drill from 5074' to 5198'. Circ well & TIH w/survey and TOH w/survey. Well 1/4 degree out. Drilled from 5198' to 5322'. Well quit dusting. Try to dry hole up and some particles returns. Tried to dry up well with air, drilled 5' of hole and blew hole with air, could not get well to dry out. Mist hole and drill from 5322' to 5505'. Formation heavily fractured. Bit bouncing.

Circ hole and TOH w/2 studs and retainer string float. TIH w/ drill pipe. TIH w/survey to 5465'. 2-3/4 degrees out. Clean out 20' of fill after survey to tag bottom. Drill from 5505' to 5536'. Changed weight and RPM. Drill from 5536'-5751'. Trip for string float and TIH w/survey, TOH w/survey 4 degrees out. Drill from 5748'-6030'. Circ well clean and TIH w/survey. TOH with survey tool 8 degrees out. Drill from 6030'-6246'. Circ & survey. TIH w/ survey, TOH w/survey. 11-3/4 degrees out. Drill from 6246'-6260'. String pressure up to 700# and pulled string float. Float wiped out. Drilling and running deviation survey from 6260' to 6741'. TOH w/string float and TIH w/drill pipe and prep to drill. Drilling ahead to 7020' running deviation survey. Circ and clean hole to bottom. Drilling ahead to 7212'. Took kick @ 7212' and blew well to pit. Estimated flow @ 4 to 6 million. Drill from 7212' to 7215'. Took heavy gas kick.

TOH w/59 stands drill pipe. Mix mud and prep to pump. Pumped mud down hole, pumped 180 bbls mud and loaded hole. Second pumping of mud w/5% LCM. Circ above bridge in casing and continue to circ and plan drilling operations.

RD blooie lines and RU HCR valves. TIH w/drill pipe and tag bridge @ 3223' and drilled out 5' bridge. TIH and tagged nest bridge @ 3847' and drilled to 3850'. Mix mud to 14# prep to change out BOP equipment. Load hole. TOH w/4 stds drill pipe and pull rubber. Change out BOP's, mud cross, and 4" manifold. NUBOP's and assorted well control equipment. Pressure test BOP, build 4 " bleed off lines. Hook up manifold lines & blooie lines. TOH w/drill pipe, drill collars and bit. TIH w/6' 1/4" bit, drill collars and drill pipe. Break circ every 10 stds. Circ well and TIH tagging plug and start drilling plug.

Drill out bridges in casing. Drill to 3951' and found metal cuttings at surface in returns. Circ & TOH w/drill pipe, drill collars and step out of hole. RU blue jet and TIH w/MTT log from 3951' to 2700'.

Logged casing and caliper did not work. Tool collapsed from hydrostatic pressure. Magnetic tool showed several holes in casing @ 3946', 3896' to 3902'. 3448-3472'.

TIH w/ drill pipe open ended to 3950'. Circ mud to shake out LCM. TOH w/30 stds drill pipe and TIH to 3525'. Hook up 4" line to water tank and circ mud out of hole with water. TOH w/drill pipe. TIH w/cement retainer and drill pipe. Set retainer @ 3403'. Press tst csg to 1000# above retainer. Sting into retainer and tried to pump into holes and well pressured up to 1200#. Surged well from 0# to 1500# to loosen LCM. Pumped into hole @ 2.5 BPM @ 1500# with 30 BW. Pressure broke down to 800# and pumped 10 BW @ 2.5 BPM.

Cmt'd with 500 sxs of Class B cmt thru cmt retainer @ 3403'. Pumped cmt @ 2.5 BPM w/avg pressure of 120#. Last 20 bbls in hole the pressure began to increase to 1900# at average rate of 1 BPM. Shut down pmp and pressure bled off to 1800# and held steady. Stung out of pkr & reversed out 5 bbls cmt to pit.

TOH w/drill pipe and stinger. Waiting on cement. TIH w/drill collars and 40 stds drill pipe. Laid down 10 stds drill pipe and load slip handle down hole. TOH w/ drill pipe and collar locators. Dragged handle for several stds and lost handle to bottom. Pull up globe basket and TIH with collar locators and drill pipe to 3403'. Work globe basket over fish and chain out. Retrieved 90% of fish. TIH w/magnet and drill pipe. Circ and work magnet. Start out of hole w/magnet and drill pipe. Finish TOH w/magnet and chained out, did not retrieve fish. Pick up junk mill and TIH w/mill casing collar locators and drill pipe. Strapper pipe in hole and tagged cmt retainer @ 3406' w/new tally. Start milling cmt retainer & milled from 3406'. Mill on pkr, mill quit cutting @ 3408'. TOH w/mill and junk sub and laid down. Shut rams and service rig.

TIH w/6 1/4" mill tooth bit and prep to drill. Drill out rest of retainer and start on cmt. Drill from 3408' to 3410'. Drill cmt from 3410' to 3630'. Circ Csg clean and shut rans for csg tst. Tst'd csg to 2000# and held pressure for 15 min with no bleed off.

Drill cmt from 3630'-3951'. Circ hole clean and shut off rams for pressure tst. Tst'd csg to 2000#. Casing held for 15 mins with no bleed off. Jet and clean section of mud pit and dump cmt wtr to pit. Mix mud and displace wtr. Mix mud and displace hole with mud. Drilling plugged casing from 3950' to 4030'. Fell thru to good csg. Lost circ approx 66 bbls and well press'd up again.

Mix mud and TIH w/14 stds drill pip and tag bridge @ 4831'. Pump mud and LCM down hole. Pumped 25 bbls and filled hole. Pull up kelly and circ hole with 12.5# mud. Clean up bridges to 4910' & lost circ. Mix gel and LCM to 10.5# and break circ. TIH w/drill pipe to 4910 and clean out bridges. Clean out bridges from 4910' to 5531' w/10.5# mud. Circ well & condition mud. Circ well and condition 10.5# mud. Short trip drill pipe 14 stds and found no birdges or fill.

Pull up RBP and TIH w/1 jt and set RBP. NDBOP to install 4.5" csg spool. NU 4.5" csg spool. Tst csg spool to 1200#, pressure held. NUBOP, TOH w/RBP. Circ and condition mud for csg run. Circ hole for 1 hr. Circ Viss Pill and TOH w/drill pipe and lay down. Laid down drill pipe and drill collars. RU csg and TIH w/4.5" csg. Broke Circ every 10 jts while tripping in hole. Circ csg & prep to cmt. Rig cementers while reciporating pipe. Shut down to drop plug and well quit circ. Worked pipe and could not get circ back. Plg down. Pressure plug to 1700#. Plg held.

11/5/95 NDBOP's to set csg slips. WOC and cut off csg & laid down cut off jt. Set tbg hanger and ND. Prep to move equip of location. TIH w/temp survey to TD and found cmt at 3500'.

12/11/95 RU. NUBOP and Blooie lines, bleed off lines. Tst csg, BOP's, manifolds, all valves 250# low, 3000# high. Had one leak on 4" blind flange that was repaired. PU Drill collars and drill pipe and single in hole. Broke drive line on rig. Shut down and replaced. PU drill pipe and TIH. Worked on fork lift. PU rest of drill pipe and changed out elevators to PU power swivel. PU power swivel and hook up control panel and hoses. TIH and tagged @ 5469' and drill cement. Drill out float casing collar locator, cmt and drill out shoe. Circ hole clean and prep to tst shoe. Pressure tst casing shoe to 900#. Well began to take fluid @ 1 to 1.5 bpm. Shut down and looked for leaks and open valves. Found no open valves and fixed leaks and press shoe again to 900# and pumped into @ 1.5 BPM. Shut down pump and then started

pumping again and well leaked off again @ 900# with the same rate. RU pump to 4.5" by 7" annulus and pumped 20 bw to fill casing and press to 1000#. Well bled off to 870# in 4 min. Let air work out and pumped well to 1000# and bled to 870# in 7 min. Pressure to 1000# and well bled off to 870# in 14 min. Well bled down to 700# in 45 min. and held pressure. Blew manifolds clean of water w/air. Hung swivel and shut down to change out bolts in drive line.

TOH w/drill string 60 stds and SD. TIH and dry out hole and prep to drill. Change out blooic line spool. TIH w/drill pipe to bottom. TIH w/rest of pipe and RU pwr swivel and start air. Prep to unload w/air. Unload hole w/air. Well unloaded fine w/some heavy black liquid in the returns. Circ hole w/air and worked pipe to 5530'. Well started to dust. Well started to get wet and could not get down to 5530'. Laid down 1 jt and worked pipe & lost hole again. Laid another Jt and worked pipe. Lost more hole and laid down 1 more jt. Air press up to 1000# decided to go back to water. Loaded hole w/wtr and circ hole. TIH w/drill pipe no fill noted on the way in. Circ some clean fluid to surface. Suspect formation fluid. Try to unload hole w/air. Pressure increased to 1000# and had to stg air in hole, but could not get pressure below 550#. Pumped N2 to try and dry hole up. Pumped N2 at 1900 scf and 900# could not dry up hole. Rig down N2.

Circ w/air to see if we could keep hole clean. Decided to cmt shoe. Prep to TOH w/drill pipe. TOH std drill collars. TIH w/RTTS & 156 jts drill pipe, set at 4810', load backside w/26 bbls wtr, SI w/300# PSI. Load DP w/wtr and establish 2 bpm rate at 600#. Pump 32.8 bbls cmt (150 sxs) at 2 bpm, Disp w/22 bw and start heistate squeeze at 600#. Did this four times to 1000#. Squeezing 4 bbls in casing. SI. WOC. Rel pkr @ 4810', TOH, land pkr. TIH w/bit, tag cmt @ 5163'. Drill cmt from 5163'-5503'. Cmt drilling soft and decided to shut down and WOC to set. Drill cmt from 5503'-5531'. Cmt still drilling soft. Circ hole clean w/wtr. RU and pressure 1st shoe to 800# & shoe held pressure for 15 min. Prep to unload hole w/air. Unload hole w/air @ 5531'. Well started to dry out and drilled 5' and well started dusting. Drilled 5 more feet well continued to dust @ 5541'. Dry hole w/air and hung swivel. Laid down 8 jts drill pipe and ran stds out of derrick. Changed 2" blow lines on manifold and moved pipe racks for CUDD.

RU CUDD & dry hole, prep to drill bridges. SNUB/reamed to 6545'. Swept hole w/several foam sweeps and press started to come down. Circ hole w/2150 CFM & dried hole up. Well dusting. Lay down drill pipe and drill collars. Unload csg & tally first row of csg & prep to pick up string. TIH w/3 7/8" bit, float sub, cross over sub, 1 jts 2.875" cst, X-nipple & rest of casing. TIH w/2.875" CS Hydrill pipe and tag bridge @ 5560'. Clean out & ream from 5560' to 5620'. TIH & Tag bridge @ 5820'. Ream and clean out from 5820'-6571'. Tbg parted & hung swivel in derrick. TOH w/11 jts & tbg parted @ 315' from surface. ordered mill. Install mill and PU 10 drill collars & TIH w/mill. Mill off upset on 2.875" tbg. TOH w/CCLS & Mill. TIH w/overshot but overshoot would not go. TOH w/overshot. TIH w/undersized overshot and tbg. Latched onto fish & work pipe from 40K to 50K.

TIH w/freepoint tool to check csg. Found csg to be free to 5651'. Casing partially free to 6043' & very little movement to 6571'. TOH w/freepoint tool and TIH w/string shot & shot CCL @ 5492' & backed off csg. TOH w/2.875" csg & land fish and continued out of hole w/csg. Land 2.875" csg, strap csg & move csg off racks. PU drill collars & strp drill pipe. PU fishing tools and TIH w/drill collars & drill pipe. PU drill pipe & TIH. Load and strap next ROW of DP. TIH w/rest of DP and prep to screw into csg jt and fish csg string. PU swivel. Press casing to 500#. Start jarring operations w/250# air on csg & pulling 20K over string weight. Jar fish free. TOH & stand back 161 jts 2.875 PAC DP X 15 Jts 3.125" DD's & lay down 34 jts 2.875" tbg & fishing tools. TIH w/bit, change bails to run doubles. Rally 34 jts drill pipe and TIH w/singles & tag bridge @ 5690'. Change out bails & prep to swivel. PU swivel & unload hole w/air. Cleanout bridges from 5690' to 5710'. Clean out bridges from 5710'-6180' w/2N & foam sweeps. Heavy brown mud returns w/wtr. Cleanout from 6180' to 6550' worked pipe to 6560' & pressure came up on drill pipe, could not pull pipe but we had good N2 circ. @ 2500 scfm @ 2000#. Worked pipe and would not free up. Slowed N2 rate to 1000 scfm @ 1200# & pipe came free. Worked pipe w/no drag & TIH to 5560' & again got stuck. Worked pipe & circ hole w/N2 @ different rates & pressure. Pipe worked free at 17:45 hrs & prep to TOH. Pull up drill string into csg shoe @ 5500'. Rig down CUDD pressure control.

Rig down Blooie line & RU rotating head & clean mud pits. Mix mud , load hole and lost 100 bbls mud. Rig repair. Build volume in pit. Circ hole w/mud. Losing volume in pit. Circ hole & lost 150 bbls mud, mix mud & build volume. Circ hole and start mixing cedar fiber to 1/2% of pit volume. Fill pits & mix cedar fiber to 1% of pit volume. Losing less mud & hole circ. good. TIH w/DP @ rate of 90'/hr. Circ hole & cond hole on the trip in. TIH from 5506' to 5934'. Hole in pretty good shape. TIH w/drill pipe & cond hole from 5934' to 6064'. Cleaned out to 6579'. Cleaned out 25' of new hole. Tight hole from 6621 to 6645'. Circ hole clean from 6579'-6610'. TOH w/ DP, DC and 3 7/8" bit. TIH w/new 3 7/8" bit, bit sub, float sub, DC and DP. TIH w/rest of DP. borke circ every stds while going in hole. Circ well @ 6540' & cond mud. Tag filled @ 6548' & reamed to 6579'. Losing some mud . Mixed cedar fiber & circ hole. Ream & cleanout from 6548' to 6610'. Heavy small cuttings & tight Hole pressuring up while working pipe & stabilizing hole from 6548'-6610' and make connection. Ream and cleanout from 6610'-6642' and very tight hole & very small cuttings to surface. Worked jt down to 6642'. PU jt to 6610' and work jt down to 9' fill. Did not lose any mud and shake out LCM & run rtns across shaker & hole seems free and stable w/ 9.2 PPG mud wt & 53 VIS PV 20 YP 16 with 10 sec gel strength. Cleaned out hole to TD at 7215'. Still circulating up heavy amounts of fine shale cuttings.