

HISTORY OF OIL OR GAS WELL

(In compliance with rules and regulations pursuant to ORS 520)

Oregon Natural Gas Development Corp. ONGDC TW 23b-3
(Company or operator) (Lease) (Well No.)
Sec. 3, T. 6N, R. 5W W.B.&M. Surveyed Coordinates: From the west 1/4
corner of Sec. 3; south 615' and east 1591'
Wildcat: _____ (or) Field Name: Mist-Underground Storage County: Columbia
Date: August 9, 1988 Signature: Judd A. Thomas
Position: Supv. Drilling & Production

Use this form in reporting the daily operations at the well. (Operator may use his own forms, but heading of this form must also be completed and submitted.) Please submit a complete history of the well. Include such information as bit sizes, mud weights, casing sizes and depths set, amount of cement used, drilling depths, fishing, logging, perforating, and plugging procedures, and anything else pertinent to the operation. Do not include lithology.

Date	Description
6-19-1988	Weld on conductor. Mix spud mud. Drilling 17 1/2" hole to 35'.
6-20	Drilling 17 1/2" hole to 580'. Survey. Wiper trip to surface. RIH and circulate for casing. Rig up to run casing and run 14 joints (555') 13 3/8, 54.5#, K-55 casing 572'. Rig up Halco and cement casing with 700 sacks class G cement mixed with 2% CaCl ₂ and 1/4#/sack cellophane. No cement to surface. WOC.
6-21	Run in hole with 1" and tag annulus cement at 115'. Rig up Halco and pump 95 sacks top job. Cement to surface WOC. Cut off conductor. Weld on wellhead. Test to 1000 psi. Nipple up BOPE. Test BOPE with state representative witnessing.
6-22	RIH. Drill out float, cement, and shoe. Drilling 12 1/4" hole to 710'. POH for mud motor. Make up tools and RIH. Drilling, circulate and survey to 923'. Wiper trip to bit. RIH. Drilling, circulate and survey to 1060'.
6-23	Drilling to 1078'. Circulate and survey. POH and lay down mud motor. RIH with rotating assembly. Wash and ream through tight hole. Drilling to 1416'. Circulate survey. Clean mud sleeve. Wiper trip to surface. Repair rig. Drilling to 1508'.
6-24	Drilling to 1535'. Circulate and survey. POH to rearrange BHA. Repack swivel. RIH. Drill, circulate and survey to 1782'. POH to change BHA. Wash and ream from 1300' to bottom. Drilling to 1969'.
6-25	Drilling to 2013'. Circulate and survey. Wiper trip to surface. Tight hole from 2013' - 1790'. RIH. Ream to bottom. Drilling to 2093'. 6 stand wiper trip. Ream 1775' - 2093'. Drilling to 2156'. Circulate and survey. Drilling to 2187'. Wiper trip. RIH. Ream tight hole. Circulate and raise mud weight to 9.7.
6-26	Drilling to 2282'. Circulate and survey. POH to clean up balled bit and BHA. RIH. Circulate and sweep. Drilling to 2465'. Circulate sweep. Survey. 15 stand wiper trip. Clean flowline. Drilling to 2553'. Circulate drilling break. Drilling to 2565'. Circulate for mud logger.

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Date	Description
6-27	Drilling and circulate drilling breaks to 2588'. Unplug flowline. POH to clean mud sleeve out of surface casing and BOP. RIH. Drilling to 2619'. Circulate for logger. Drilling to 2651'. Circulate and survey. 35 stand wiper trip. Circulate and POH for logs. Rig up Atlas and log.
6-28	Log with Atlas. Strap in hole. Wash 30 feet to bottom. POH and lay down 12 1/4" tools. Rig up to run casing and run and hydrotest 62 joints (2607') 8 5/8" 32#, K-55 casing to 2620'. Rig down. Weld landing joint. Circulate casing.
6-29	Cement casing as follows: Lead slurry - 300 sacks Class G cement with 1:1 perlite mixed with 2% gel, .75% Halad 4, 3% KCl and 2% CaCl ₂ . Tail slurry - 754 sacks class G cement mixed with 1% CFR-3, .25% Halad 4, 3%KCl, 1% CaCl ₂ . Lift BOP and set slips, cut off casing and nipple up tubing head. Test head to 2000psi. Nipple up spool and BOP. Pressure test BOPE with state representative witnessing. RIH and WOC.
6-30	RIH and tag cement at 2574'. Drill plug, float and cement to 2616'. POH. Pick up casing scraper and run to bottom. Circulate. POH for logs. Rig up Atlas and run cement bond log and vertilog. Shut down for holiday.
7-7-1988	RIH and condition mud. Rig up Atlas and run cement bond log. Clean mud pits. Mix and displace HEC-10 polymer mud. Circulate. Drilling cement and shoe. Drilling 7 7/8" hole to 2763'. Abundant torque.
7-8	Drilling to 2768'. Circulate and survey. POH and change BHA. Lay down 3 drill collars and 1 stabilizer. Pick up 2 joints hwdp. Drilling to 2887'. Circulate and survey. Drilling to 2974' or T. D.
7-9	Wiper trip to shoe. Rig up Atlas and run logs. RIH open ended to 2807'. Set 97' cement plug. Pull 4 stands. Circulate out cement. WOC RIH to tag plug. Not there Set plug from 2805' - 2710'. Pull 4 stands. Circulate. WOC.
7-10	RIH and tag plug at 2754'. Set plug from 2746' - 2710'. Pull 4 stands. Circulate WOC. Tag plug at 2721'. WOC. Polish plug to 2725'. POH. Lay down stabilizers and pick up under reamer. Strap in hole. Under ream to 15" from 2622' - 2662'.
7-11	Under ream from 2662' - to 2725'. Circulate. Pull into shoe. Wait 30 minutes. Run to bottom to check for fill. POH for log. Run Atlas caliper log. RIH to shoe. Dump and clean mud pits. Mix new HEC-10 polymer mud system. Run to bottom and displace hole. Circulate to shear mud. POH and lay down BHA.
7-12	Rig up and run 5 1/2" wire wrapped liner to 2725'. Top of liner at 2566'. Rig up Halliburton and gravel pack with 127 sacks 20-40 gravel. Reverse out approximately 3 sacks. Back out of liner. POH for log. Run Atlas photon log. Make up lead seal and set at 2564'. POH. Make up tubing tail and packer. Rig up Atlas and run in hole with packer on wireline. Set packer at 2475'.

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Date	Description
7-13	Lay down drill pipe. Rig up and run 73 joints (2373') and 1 pup joint (9.55') and Otis tools (sliding sleeve and mandrel). Land tubing. Pull off of packer. Rig up Atlas and run vertilog. Displace corrosian inhibitor. Land tubing. Back out of landing joint. Test annulus to 400 psi. Nipple down BOP. Tubing hanger not seated in bowl. Pull donut. Change out 2 joints of tubing. Land donut and test backside to 400 psi. Nipple up tree. Test to 3000 psi.
7-14	Load out materials. Release rig.

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