old 421

VAUGHEY & VAUGHEY, Et Al

#1 Joseph Thompson - West Liberty Field

LOCATION: SE/4 SW/4 SW/4, Sec. 8-8N-54W, Logan County, Colorado

ELEVATION: 4449 K.B., 4441 Gr.

SPUD DATE: 7-8-53 COMPLETION: 8-2-53

CASING: 10-3/4" @ 170' w/150 sacks 5½" @ 5468' w/275 sacks

CONTRACTORS: The New Drilling Co. - Rotary Rotacone - Cable Tools.

INITIAL PRODUCTION: (After Sandoil Treatment) Pumping 10 x 54" SPM, 1½" Insert Pump seated in 2" Tubing : 5376'. 10790 Barrels Oil, 1.6% Water, 20/64" Adjustable Choke, T.P. 50# to 100# C.P. 600# to 700#, Gravity 38.6° API. Corr. @ 60° F. Estimated G.O.R. 450 to 1.

CORE DESCRIPTION (7-3/4" x 4-3/8" Diamond Bit)

Note: 1st Core cut with bit No. R.V. 5597H
2nd Core cut with new bit No. R.Z. 9623H

CORE #1: 5269' to 5274': Cut and recovered 5'.
Cutting time: 63-75-81-61
5' Sand: Hard, light gray and gray, few streaks carb. material. Good porosity and permeability, fractured.

CORE #2: 5377' to 5428½': Cut and recovered 51½'
Cutting time: 15-13-6-12-28-25-18-11-6-12-7-7-11-10-8 11-12-15-14-11-15-(conx) 24-29-20-18-18-21-21-30-27-21-19-19-50-37-29-20-21-25-8-10-20-63-31-32-23-31-26-23-23-22.

5377 to 5381: Sandstone, medium to fine, very dense, no permeability, no show, fractured.
5381 to 5385: Shale, black, silty.
5385 to 5387: Sandstone, fine, dense, shaly and quartzitic, no permeability, no show.
* 5387 to 5389: Sandstone, medium fine, dense, quartzitic, very low permeability, slightly fractured, Oil Stain and bleeding oil slowly.
5389 to 5393: Siltstone and very fine sandstone, dense, quartzitic, no permeability, no show.
5393 to 5401½: Shale and siltstone, hard, gray and dark gray, No Show.
* 5401½ to 5403: Sandstone, medium, very hard, quartzitic, very low permeability, oil stain and bleeding oil, very slightly fractured.
5403 to 5409: Shale, black, streaks very fine quartzitic sandstone. No Show.
* 5411 to 5415: Sandstone, medium, dense, quartzitic, low permeability, but highly fractured, with good odor and stain, with light buff colored clay filling in fractures.
5415 to 5426: Sandstone, white to cream, fine to medium fine, soft, clay filled, but having low permeability. No Show.
5426 to 5430: Shale, black, streaks dense very fine sandstone. No Show.
(1½' over footage described due to core lying loose.)

18-8N-54W

DRILL STEM TEST #1:

5388 to 5416' (Halliburton) Straddle packer test. 5/8" bottom, no top choke. Open 2 hours and 10 minutes. Shut in 20 minutes. Good surface blow, gas in 14 minutes. Gas volume maximum 10 MCF after 40 minutes. Recovered 400' fairly clean oil and 212' mud cut with oil and gas.

Drilled to Total Depth 5470' with 7-7/8" rock bit-
Run Schlumberger and Micro Log to 5462' (8' cavings)
Tops: Niobrara, 4458'; Ft. Hayes, 4790'; Codell, 4831'; Greenhorn, 5019'; "D" Sand, 5267 (minus 823); "J" Sand, 5376'(minus 932). Total depth 5462', Schlumberger; 5470', driller.
Set 5½' production casing at 5470'. Cemented with 275 sacks common cement. Total 137 joints 5½" - 15½# - J-55 - LT & C Range 3. Thos. off tally 5494.60. Used Howco scratchers from 5460 to 5350'. Pipe rotated freely until plug down at 9 P.M. 7-19-53.
Move in Cable Tools for Completion. 7-21-53.
Swab and bail 5½" casing dry to total depth, 5434'. Ran Lane-Wells Gamma Ray and located collars.
Note: Lane Wells 5380' equals Schlumberger 5376'.
Perforate: 5412 to 5415½ (5408 to 11½ Schlumberger depth) with 25 - 15/32 bullets.
Ran Bailer after one hour, recovered approximately ten gallons oil and ten gallons mud and water.
Ran Tools with bit to ream through perforations then loaded approximately 400' of water on top of 5½" casing swab. Ran and pulled swab from 1000' to 5400' for 2½ hours. Recovered approximately three barrels clean oil on top of water at end of 2½ hours "swabbing".
Ran Bailer to clean up and prepare to sandoil treat.
Note: Estimated production prior to treatment, slightly less than one barrel of oil per hour.
Sandoil Treat with Halliburton H. M. Tool OD 2" tubing set at 5392' as follows:

1. Fill 2" and 5½" with crude oil, close tool.
2. Break down with 3550# and pump 15 barrels crude in with final pressure 1800# at rate of 2½ barrels per minute. Vacuum after 5 minute shut down.
3. Then, mix 15 gallons Mo Flo with 15 barrels and pump in with maximum of 2500# to minimum 1650#. Follow with 20 barrels diesel, 113 barrels #6 Bunker oil with 4700# sand mixed, and flush with 127 barrels crude oil. (Total load and treatment oil 400 barrels). Maximum treating top pressure 2500#, minimum, 2100#; average injection rate, 2.75 barrels per minute.
4. Pull 2" tubing and H. M. Tool.
5. Swab 5½" to recover 302 barrels of the 400 barrel oil load with intermittent runs of Cavins Sand Pump to keep 5½" clean to total depth 5432'. (Note: 98 bbls. oil load left to be recovered.)

Ran 2" Bue Tubing for Completion as follows:
175 joints 2" tubing, 2 - 2" tubing subs, 3' perforation and seating nipple. 2" Bue collar type ball plug swinging 9½' off bottom at 5422½', perforated nipple at 5409', and seating nipple at 5377'.
Ran 1½" x 12' F.P.P. Co. Volume Producer with 3/4" x 12' perforated gas anchor on 213 - 3/4" rods. Used 1 - 2' x 3/4" pony rod on pump and spaced with 1 - 10' x 3/4", 1 - 8' x 3/4" pony rods and a 1½" x 22' polish rod.

Released Cable Tool Rig at 5 P.M. 7-26-53. After pumping four hours with Cardwell Unit into treater at approximate rate of 5 barrels per hour.

Install pump and started pumping 8-1-53 on 10X 5¼" SPM. Recovered the remaining 98 barrels oil load.

Initial Production 8-2-53. 24 hour pumping gauge. 107.90 barrels oil, 1.6% water, gravity 38.6 degrees, API correction at 60 degrees F., on 20/64" adjustable choke. T.P. 50 to 100#. C.P. 600 to 700#. Estimated GOR 450 cubic feet per barrel.

VAUGHEY AND VAUGHEY

BY: _____
M. E. Norman