

OIL AND GAS DOCKET NO. 03-0227855

**THE APPLICATION OF K. O. C. CORPORATION FOR MER AUTHORITY FOR THE
LOCHRIDGE FIELD, BRAZORIA COUNTY, TEXAS**

Heard by: Margaret Allen, Technical Hearings Examiner

Procedural history

Application received: March 20, 2001

Hearing held: May 1, 2001

Appearances

Richard Johnston

Representing
K.O.C. Corporation

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

K. O. C. is seeking an MER determination for all wells in the Lochridge Field. This will allow wells in the field to produce up to 185 barrels of oil per day. K. O. C. is also requesting that all overproduction for its wells in the Lochridge Field be canceled.

DISCUSSION OF THE EVIDENCE

The Lochridge Field was discovered in 1936, and has produced 14,000,000 barrels of oil. Remaining production is from two separate reservoirs--the L and M sands. At one time, the oil column was only 8' thick, with a gas/oil contact at -6295' and an oil/water contact was at -6313'. Originally, there was an 830-foot thick gas cap, but the gas has been produced and current production is oil that has moved into the former gas cap. In October of 2000, K. O. C. completed a new well near the top of the structure, the Carrie Baker No. 8, with perforations from 6218 feet (-6161 feet subsea) to 6248 feet. Wells at this depth would once have been above the gas/oil contact. The initial potential of Well No. 8 was 123 BOPD and 90 MCF/D, with 500 BWPD, on a submersible pump.

The first field-wide MER of 70 BOPD, was established in 1951. In 1996, K. O. C. installed its first downhole submersible pump and found significant amounts of oil could be produced by lifting large amounts of liquid. In 1996, an MER of 126 BOPD was established after a protested hearing in Docket No. 03-0218709.

Because of the pumps, it is difficult to test Well No. 8 at different rates. Between March 24

and April 18, Well No. 8 averaged 160 to 170 BOPD on a 21/64th inch choke. When the choke size was reduced to 15/64th inches for four days, the well ceased producing. When the choke size was increased back to 21/64th inches, production resumed at the prior rate. The highest daily oil production was 194 BOPD. During the test, the oil cut varied only slightly, from 6 to 7%.

To limit pumping enough to keep Well No. 8 within its allowable would require the installation of a different submersible pumps. Before Well No. 8 was drilled, there were two producing wells on the Carrie Baker Lease--No. 4 with a potential of 126 BOPD, and No. 7 with a potential of 71 BOPD (limited by its GOR). When Well No. 8 came on production in October of 2000, monthly lease production increased from 5000 barrels to 7000 barrels. Well No. 8 has accumulated overproduction, and the only way this could be made up would be to shut its pump down.

K. O. C. has two producing leases in the Lochridge Field, in addition to the Carrie Baker Lease. The Carrie Baker Lease is offset to the south by Lusk Nominee Trust. Lusk opposed the 1996 hearing wherein the MER for the field was increased to 126 BOPD. At that time, Lusk's wells were completed in the M sand and K. O. C.'s wells were completed in the L sand. Lusk did not protest the instant application. Two other operators have wells carried in the Lochridge Field. K. O. C. is considering drilling additional oil wells and using submersible pumps of them as well.

FINDINGS OF FACT

1. Notice of this hearing was given to all operators in the subject Lochridge Field on March 26, 2001.
2. The Lochridge Field was discovered in 1936 and has produced 14,000,000 barrels of oil.
3. The field originally had a large gas cap and thin oil rim; an MER of 70 BOPD was adopted to maximize field recovery.
4. The gas cap has been blown down in both the L and M sands, the two productive reservoir sands in the field.
5. A water drive has pushed oil into the former gas cap, and the remaining production is oil from wells near the top of the structure.
6. In 1996, K. O. C. began using a submersible pump in its Carrie Baker Well No. 4 and increased oil production from the L sand by moving large amounts of liquid.
7. The MER allowable for wells in the Lochridge Field was established at 126 BOPD after a hearing in 1996, that presented evidence of the increased recovery obtainable with downhole submersible pumps.

8. K. O. C. drilled its Carrie Baker No. 8 in October of 2000, near the top of the structure, and this well's initial potential was 123 BOPD with 500 BWPD, on a submersible pump.
9. Testing a well on a submersible pump is difficult, but the water cut in Well No. 8 does not appear to be rate sensitive.
10. The average production rate in Well No. 8 is 160 to 170 BOPD, while the most oil produced in one day has been 196 BO.
11. Well No. 8 has accumulated overproduction but the only way to make up this overproduction would be to shut off the submersible pump.

CONCLUSIONS OF LAW

1. Proper notice was given as required by statute.
2. All things have been done or occurred to give the Railroad Commission jurisdiction to resolve this matter.
3. The requested increase in allowables for wells in the Lochridge Field will not cause waste and will protect correlative rights within the field.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that wells in the Lochridge Field, be allowed to produce up to 185 barrels of oil per day. All overproduction for wells in the field should be canceled.

Respectfully submitted,

Margaret Allen
Technical Hearings Examiner

Date of Commission Action: May 22th, 2001