NEW MEXICO OIL CONSERVATION DIVISION

STATE LAND OFFICE BUILDING

STATE OF NEW MEXICO

CASE NO. 10806

VOLUME 1

IN THE MATTER OF:

The Application of Kinlaw Oil Corporation for a high angle/horizontal directional drilling pilot project, special operating rules therefor, a non-standard oil proration unit, an unorthodox well location, and a special project oil allowable, Lea County, New Mexico

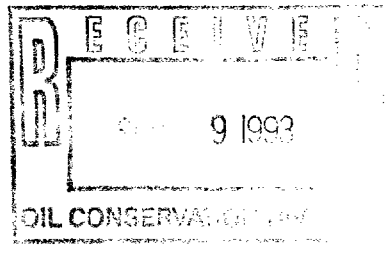
BEFORE:

MICHAEL E. STOGNER

Hearing Examiner

State Land Office Building

August 26, 1993



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REPORTED BY:

SUSAN B. SPERRY
Certified Court Reporter
for the State of New Mexico

A P P E A R A N C E S

FOR THE NEW MEXICO OIL CONSERVATION DIVISION:

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BY: William F. Carr, Esq.

I N D E X

E X H I B I T S

EXAMINER STOGNER: Call No. 10806.

MR. STOVALL: Appearance of Kinlaw Oil Corporation for a high angle/horizontal directional drilling pilot project, special operating rules therefor, a non-standard oil proration unit, an unorthodox well location, and a special project oil allowable, Lea County, New Mexico.

EXAMINER STOGNER: Call for appearances.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm of Campbell, Carr, Berge & Sheridan. I represent Kinlaw Oil Corporation, and I have two witnesses.

EXAMINER STOGNER: Are there any other appearances? Will the witnesses please stand to be sworn?

Mr. Carr?

MR. CARR: Thank you, sir.

MIKE HILL

After having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. CARR:

Q. Will you state your name for the record, please?

A. Mike Hill.

Q. Mr. Hill, you're going to have to speak up.

A. Mike Hill.
Q. Where do you reside?
A. I reside in Austin, Texas.
Q. By whom are you employed?
A. Kinlaw Oil Corporation.
Q. And, in what capacity?
A. A petroleum geologist.
Q. Maybe, initially, you should tell us, who is Kinlaw Oil Corporation?
A. Kinlaw Oil Corporation is a Texas corporation in the business of oil and gas exploration and production. In the last three years, we've drilled approximately 36 horizontal wells in Texas, and 13 highly deviated offshore wells in Louisiana.
Q. In fact, your company drills primarily, almost exclusively horizontal or highly deviated wells; is that right?
A. That's correct.
Q. And you have now filed papers to be authorized to do business in the State of New Mexico?
A. That is correct.
Q. Have you previously testified before this Division?
A. I have not.
Q. Could you briefly summarize your educational

background, and then review your work experience for Mr. Stogner?

A. I graduated from the University of Texas at Austin with a bachelor of science degree in geology in 1982, and went to work for Burns, Incorporated, in Abilene, Texas for a period of around four years.

I was an independent consultant for two years following that, and I've worked for Kinlaw for the last four years.

Q. And, in all of these jobs, have you been employed as a petroleum geologist?

A. Yes, sir.

Q. Are you familiar with the application filed in this case on behalf of Kinlaw?

A. Yes, I am.

Q. Are you familiar with the proposed well and the subject area?

A. Yes, I am.

MR. CARR: Mr. Stogner, we tender Mr. Hill as an expert witness in petroleum geology.

MR. STOGNER: Mr. Hill is so qualified.

Q. (By Mr. Carr) Mr. Hill, could you briefly state what Kinlaw seeks with this application?

A. We are seeking to gain approval to drill a horizontal well in the Devonian by re-entering an old

Magnolia State "M" No. 1 Well.

At that point, we're going to run a gyro to find out the exact location, bottomhole location of this well, and kick off at approximately 13,060 feet to drill a distance of between 500 and 700 feet.

Q. You're also going to be seeking the approval of a non-standard unit for the well; is that correct?

A. That's correct.

Q. How many acres may you have to dedicate to the well?

A. 80 acres.

Q. You're going to need an exemption for the existing well location requirements; is that correct?

A. That is correct.

Q. In fact, you may be going closer than 330 to a boundary of a 40-acre tract?

A. That's correct.

Q. You're also going to be seeking a special oil allowable if, in fact, the wellbore extends onto more than one 40-acre tract?

A. That's correct.

Q. And, I've been asking these questions in the context of, you may need these.

Can you tell me exactly, just in a general way, by way of introduction, what you're going to do, and why

the wellbore may or may not be on one or two 40-acre tracts?

A. Until we re-enter the well and find out the exact location of the bottomhole, we won't know exactly where it's positioned within this 40 or this 80 acres, if we need it.

If, indeed, the well is relatively straight, and the bottomhole location is directly underneath the location that is shown, then we will only use 40 acres, and try to keep it as a regular state-wide 330 from the proration unit.

If it is not, we might need to go over into the adjacent 40-acre block to the west.

Q. So, what you're going to do is re-enter the well and survey at that time?

A. That's correct.

Q. And then that's going to, in fact, control how far the horizontal portion of the well extends to the east -- to the west?

A. That's correct.

Q. And it could extend onto the adjoining 40 acres?

A. That is correct.

Q. And, that is the reason you've requested an 80-acre unit?

A. Correct.

Q. What's the reason for this application?

A. We're trying to gain permission to drill a horizontal bore hole in the top of the Devonian in order to extend the life of this field, to produce reserves that have been left behind.

Q. Is there any production in this field at this time?

A. Not at the current time, the whole field is plug-in vent.

Q. If you are authorized to drill the horizontal well and you obtain the results that you're hoping to obtain, what actually do you think you can achieve here?

A. Well, we, once again, are expecting to re-establish production, and we also hope to gain useful data that can be utilized and developed in other portions of this field.

Q. Let's go to Kinlaw Exhibit No. 1. Could you identify that for the Examiner, please?

A. This is a map just showing the South Denton Devonian field. It is highlighted in yellow. And also shows what is currently Kinlaw's leasehold.

Q. Now, the acreage in yellow is the leasehold position of Kinlaw?

A. That's correct.

Q. There's additional acreage in the pool as defined other than just what's shaded yellow; is that right?

A. That's correct.

Q. And, what acreage would that be in Section 35?

A. That would be 80 acres to the west.

Q. So, the entire southeast quarter of 35 is in the pool?

A. That's correct.

Q. What about in 36?

A. That would be the northeast quarter of the southwest quarter.

Q. So, that is additional acreage in the pool?

A. That is correct.

Q. What is the status of that acreage? Is it under lease at this time?

A. No, it is not.

Q. Is it state, federal, or fee land?

A. State land.

Q. As to these unleased minerals within the pool, have you reviewed this application with the New Mexico Commission of Public Lands?

A. Yes, we have.

Q. And, who did you talk at the land office?

A. We talked to a Mr. Jerry Albers at the land

office.

Q. And, was he made aware of not only the application, but today's hearing?

A. Yes, he was.

Q. And, what was the result of that conversation with Mr. Albers?

A. He had no objection to it.

MR. CARR: And, Mr. Stogner, with your permission, we anticipate receiving a letter from the land office to that effect. And, as soon as we receive it, I will request permission to submit it to you for inclusion in the record.

We had hoped to have it by the time of the hearing, but we haven't received it.

EXAMINER STOGNER: Thank you, Mr. Carr.

Q. (By Mr. Carr) Now, Mr. Hill, is there other Devonian development within a mile of this pool?

A. No, there is not.

Q. So, there were no other operators to whom notice needed to be given?

A. That's correct.

Q. If I look at the acreage shaded in yellow on Exhibit No. 1, there are a number of abandoned wells indicated on this exhibit.

A. That's correct.

Q. If, in fact the -- and the well we're talking about today is the one in, the northeastern most well; is that correct?

A. The northernmost well, yes, sir.

Q. If the data you are able to obtain from this first effort to drill a horizontal well is favorable, are the other wells shown on this plat also candidates for additional horizontal drilling?

A. Yes, they are.

Q. What is exactly the spacing unit that you are proposing to dedicate to the No. 1 M well?

A. 80 acres.

Q. And that would be which tract shown on Exhibit No. 1?

A. That would be the northwest quarter of the southwest quarter of Section 36, and the northeast quarter of the southeast quarter of Section 35.

Q. And, what is the status of the ownership this that tract?

A. It is state.

Q. All the royalty interests would be state?

A. That is correct.

Q. All the working interest is owned by who?

A. Kinlaw.

Q. What is the current status of the development on

that 80-acre tract?

A. There is currently no development at the present time.

Q. In fact, all wells in the pool at this time have been plugged and abandoned, have they not?

A. That is correct.

Q. Would you provide us with a general description of the characteristics of the Devonian in this area?

A. The Devonian is a shallow water carbonate. It's a very heterogeneous reservoir, consisting of a dense crystalline Dolomite. It also contains abundant fractures and regular porosity throughout, low primary porosities of 2 to 6 percent.

Q. Let's go through what has been marked as Kinlaw Exhibit No. 2. Could you identify and review that for the Examiner?

A. This is a structure map on the top of the Devonian, South Denton field. Everything in green is basically what we consider to be productive.

The contour intervals is 100 feet. Basically, we're looking at a anticlinal feature bounded by three faults, the largest being the fault on the west side of the field.

Basically, each well is designated with a subsea point below the well number.

Q. Let's go on, now, and go to Exhibit No. 3. Would you identify and review that?

A. Exhibit No. 3 is a net pay isopach map on the South Denton field. As can be seen by this map at our location, the 1 M, we should encounter over 200 feet of net pay.

The thickest well to date is No. 1 on west side of the field, with over 411 feet of net pay.

Q. Based on this map of the Devonian in this area, do you believe you have a suitable formation for a horizontal drilling project?

A. Yes, we do. We feel like we have a more than adequate amount of pay here.

Q. Will you be calling a drilling engineer and discuss exactly how the well will be drilled and kept within the pay of this area?

A. Yes, we will.

Q. Let's go to Exhibit No. 4. Can you identify that for Mr. Stogner?

A. Exhibit No. 4 is a cumulative production map of a South Denton field with per-well cum's noted below each well. The field on the hole has made close to 3.7 million barrels, primary.

Q. If your effort with the first well is successful and you go forward with additional horizontal drilling, is

it possible that, in fact, you could return this field to a top allowable producing reservoir?

A. Yes. We feel like there is a good possibility of that.

Q. Now, Mr. Hill, based on your geologic review of the South Denton Devonian field, what conclusions have you reached?

A. We've concluded, or I have concluded that we have a small Devonian feature here that's well suited for horizontal drilling technology. And we also feel like, if we can go into this field and, by drilling horizontally, we can recover reserves that have been left behind.

Q. Were Exhibits 1 through 4 prepared by you?

A. Yes, they were.

MR. CARR: At this time, Mr. Stogner, I would move the admission of Kinlaw Oil Corporation Exhibits 1 through 4.

EXAMINER STOGNER: Exhibits 1 through 4 will be admitted into evidence at this time.

MR. CARR: That concludes my direct examination of Mr. Hill.

EXAMINATION

BY EXAMINER STOGNER:

Q. Now, Mr. Hill, geologically speaking, as far as when you re-enter this well to test, to test it or get

information, and then make an educated assumption, or guess, evaluation of which way to extend your horizontal, what will you be looking for, as far as the direction?

A. The direction? What we're going to try to do here is drill in an up-dip direction. Once we've found a location, we would like to get as high as we can but, at the same time, we're trying to stay away from the very apex of the field, due to excessive amounts of water being produced through and around that wellbore.

Q. And, you're referring to that No. 1 well?

A. Yes.

Q. There again, geologically, where in the thickness of the formation will you actually be putting your lateral?

A. We will be staying in the top 50 feet of the formation.

Q. So, you said this was a highly fractured reservoir?

A. Yes, sir.

Q. With regular porosity?

A. Yes, sir.

Q. And the porosity has been determined on what, well log information?

A. Yes, sir, the core information.

Q. You do have cores on it?

A. Yes, sir. We have cores to the -- actually, from this field, we do not have cores, but we have cores in the field to the northeast of us, which is the Denton field that we have been comparing logs and core records with.

Q. And, actually, you are in the South Denton Devonian field, aren't you?

A. That's correct.

Q. You're showing fault lines on Exhibits No. 2 and 3. Is that actually what those are?

A. Yes, sir.

Q. I'm seeing fault lines out there?

A. Yes, sir.

Q. Bounding on all three sides?

A. That's correct.

Q. What kind of a drive mechanism does this pool have?

A. It's a water drive.

Q. I'm assuming, by the information you've given me, that you're essentially avoiding coning?

A. That's correct. We have information that leads us to believe that when a field was initially put on line, that that's what happened to a number of these wells, that the production rates, the amount of water was produced looks as though, looks like they were coned.

EXAMINER STOGNER: I'm probably asking questions as far as development which, Mr. Carr, I might add, in future development for Kinlaw, perhaps refer to the upcoming petroleum development application in two weeks, and perhaps style, or restyle this particular project such as that.

And we'll tell Merrian also, since they were involved in coning, deconing of some reservoirs up in the northwest. There are some aspects about that, and the reason I'm bringing that up, there are some aspects about that which I think would fit this one very nicely.

Get away from the concept of perhaps proration units and cone an area, a project area, where you might essentially can get a project allowable, treat it a lot like a water flood; just something to bring up and something to review and look at.

But, again, back to this particular application today.

Q. (By Mr. Stogner) Would it be advantageous on your lateral to go toward another well, or try to go perpendicular to it?

A. We believe, as I was saying earlier, we've got good water production histories on these wells. And, at the moment, we believe we should try to stay away from, as far away from old wellbores as we can, especially those

that produce excessive amounts of water.

This, as you can see by the production map, this one well up here did not produce anything like the other wells that were actually lower on, some of them even lower on structures.

So, we feel like that northern part of that field has not been depleted, and by going up-dipward, we're just trying to get as much structure as we can while we're drilling the lateral.

Q. I'm hoping I'm not getting too far out of your realm. And perhaps asking you some questions that I should be asking the engineer.

In your evaluation of the geology and stimulation program, how were these wells completed and stimulated when this well, when this pool was originally developed?

A. They were -- and our engineer could probably answer this better -- but they were, just typically, they drilled through the Devonian set pipe, standard cement job, and perforated and acidized with a fairly large amount of acid, good-size acid job.

EXAMINER STOGNER: With that, I'll leave Mr. Hill alone at this point, maybe ask him additional questions later, between you and your other witness.

THE WITNESS: All right.

MR. CARR: Mr. Stogner, at this time we call Dave Phillips.

DAVE PHILLIPS

After having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MR. CARR:

Q. Would you state your name for the record, please?

A. Dave Phillips.

Q. Where do you reside?

A. Pardon me?

Q. Where do you reside?

A. Austin, Texas.

Q. By whom are you employed?

A. Kinlaw Oil Corporation.

Q. What is your position with Kinlaw?

A. I'm a drilling engineer with Kinlaw.

Q. Have you previously testified before this Division?

A. No, sir, I have not.

Q. Could you briefly review your educational background and work experience for Mr. Stogner?

A. Okay. I have a bachelor of science degree in petroleum engineering received in the spring of 1976 from

the University of Texas at Austin. Subsequent to that, I worked for Gulf Oil Corporation in Midland and Houston for approximately four years.

I left Gulf and worked for Texas Oil and Gas Corporation in Midland as the district drilling engineer for a period of two years.

After leaving Texas Oil and Gas, opened an office for an independent out of Denver, Colorado, known as Jem, J-E-M, Petroleum Corporation. I was the office and operations manager for that company for four years.

Subsequent to that, I worked as an operations manager for Cass Oil Corporation, and then consulted for them for a period of, total period of about two years.

I became employed by Kinlaw Oil Corporation in August of 1990, and still work for them to date.

Q. Are you familiar with the application filed in this case?

A. Yes, I am.

Q. Are you familiar with the proposed well, and Kinlaw's plans to develop this pool with horizontal drilling projects?

A. Yes, sir, I am.

MR. CARR: We would tender Mr. Phillips as an expert witness in petroleum engineering.

EXAMINER STOGNER: Mr. Phillips is so

qualified.

Q. (By Mr. Carr) Have you prepared certain exhibits for presentation here today?

A. Yes.

Q. Can you refer to what has been marked Kinlaw Exhibit No. 5, identify this exhibit, and review it for Mr. Stogner?

A. Yes, I will. What we have, basically, is a wellbore schematic for the New Mexico M No. 1 in South Denton field, Devonian field. This well was drilled in 1956, completed in 1956. Potentialed 368 barrels of oil per day in the Devonian.

It cum'd approximately 186,000 barrels of oil before being plugged back and completed in the Wolfcamp formation at a depth of 9,488 to 9,512.

This well, in the Wolfcamp, cum'd approximately 263,000 barrels of oil, and was plugged in August of '91 by Bristol resources, who had become the owner of the well.

This schematic shows how the well was plugged. It shows three perforated intervals, the Devonian, the Wolfcamp, and then an interval up in the surface casing -- in the seven-inch casing, at 310 feet.

It shows various other plugs and bridge plugs. It shows the casing sizes and estimated cement tops.

Cement was circulated on the surface and intermediate strings, and estimated top of the cement is approximately 4250 feet on the seven-inch.

We chose this wellbore out of the seven to attempt to drill horizontally in because it has been recently plugged, and none of the casing was cut and removed from the wellbore.

Q. So, basically, what we have in Exhibit No. 5 is a diagrammatic sketch of the wellbore as its exists today?

A. That's correct.

Q. All right. Let's move now to Exhibit No. 6, Mr. Phillips. If you would, using this exhibit, simply review for the Examiner how Kinlaw proposes to re-enter the well, survey it, and then horizontally drill it.

A. Okay. Well, the previous exhibit, first we would do, we would rig up a work-over unit and go in and drill out all existing plugs, and verify the casing integrity of the well, to make sure that this is, indeed, a good candidate for turning back into a producer.

After drilling out all of the plugs, we would then run a gyroscopic directional survey to ascertain the position of the bottom of the wellbore.

Having done that, and getting, having a permit to go horizontal in this particular wellbore, we would move in rotary tools and squeeze the existing Devonian

purse with a polymer and matrix cement to try to eliminate any water influx from the old Devonian purse.

The well's been plugged since, in the Devonian, since 1960. We do not know if there's been any subsidence of the coning effect or not, but we would want to squeeze that area vertically prior to milling the section and going horizontal.

After performing the squeeze on the Devonian, we would mill a 40-foot section from ten feet below the top of the Devonian, that interval being an area from 13,000 -- well, with the top of the Devonian being at 13,032, the top of our mill section 13,042, the bottom of the mill section would extend to 13,092.

We would then, at that point, run a -- we're going to employ, we plan to run a three and three-quarter inch short-radius angle-building motor and assembly, with a four and three quarter inch bit.

We would kick off -- or, with a kick-off point so close to the existing casing, a surface readout gyro will be used at that point to facilitate orienting the vent sub. And drilling in an azimuth of, somewhere in the southwesterly direction.

At this time, we feel like we'll be drilling in a southwesterly direction, but it will depend upon what we find in the bottom of the hole, the location, when we

gyro. Subsequent surveys can be made using MWD devices, and we would track the vertical section and direction azimuth of the well using those devices.

We would build our curve at a rate of approximately 1.4 degrees per foot. This gives you a radius somewhere between, around 40, 41 feet, a radius and curvature of 40, 41 feet. That would place the TVD of our curve into the curve -- well, at least at 90 degrees, we'd be approximately 13,102 feet.

We would continue to build angle to somewhere between 95 to 96 degrees with the build portion of the build motor, and then remove the build motor and replace that with a hole, what we call a hole motor, an angled hole motor.

Now, the angled hole motor does build angle at about a tenth of what the build motor does. So, you're constantly building in some plane, building angle on some plane.

So, we feel like, with a 14 degree per 100 build rate, and the hole motor will be able to control our direction and our depth throughout the 500-foot section, feet of vertical section.

With some success -- well, we're hoping to intersect, you know, more matrix and fracture porosity, and that, by drilling a 500-foot lateral, we'll be able

to, with the same drawdown, spread out the drawdown over a longer interval, therefore, have less tendency to form the coning problem that was the cause of what we feel like premature plugging of this field.

No casing or no liners are planned at this time to run through the lateral section, due to the density and what we feel is the competence of the formation. We expect no hole collapse problems, from our experience.

Q. Will you be able to drill this well in such a fashion as to assure that you not only stay within the formation, but that you are at least a 330-foot setback from the dedicated 80-acre tract?

A. Yes. We will be able to survey this entire lateral, and we'll know exactly where the end of the hole is.

Q. Can you make an estimate of the area that you hope to drain with this well?

A. We'll learn more as we go, but we feel like we'll be able to drain 40 acres, at least 40 acres. The wells were originally drilled on 40's, and we feel like a lot of oil was left, a lot of the original oil in place has been left behind.

I think some of the figures we've seen, reservoir studies, maybe 20 percent of the oil was recovered, original oil in place. We hope to extend that

to averages, other averages in the field, which sometimes exceed 35 percent.

Q. Will this drainage area extend into the 40-acre tract to the west of the tract on which the existing well is located?

A. It very well could, due to the deviation of the vertical well. We do not have a directional survey, but we do have an Eastman deviation survey, indicating that maximum deviation in the well was four and three quarter degrees at TD, and it looks to us like there's a good chance that there's at least two degrees of average deviation.

If it was all in the same direction, and all goes to the south and west, we feel like our 40-acre, our wellbore could extend into the other 40 acres.

Q. All right. Do you expect there would be any potential for excess drainage from offsetting tracks if the well is drilled and it's successful?

A. Excess drainage in offsetting tracts, we don't foresee any. But, if there is, there's a common royalty interest and common working interest ownership in the surrounding tracks, and those would be in the State of New Mexico and Kinlaw Oil Corporation.

Q. If you are able to successfully drill and complete this well, can you make any estimate for us as to

how long you would anticipate its producing life to be?

A. If our volumetric calculations are accurate and we're able to establish the production rates, the allowable production rates, we feel like, produce this well for 7 to 10 years to an economic limit.

Q. Once the well is drilled, you will run a directional survey on the entire wellbore, will you not?

A. Yes, we will. We'll have a survey to the end of the hole, which will tie into our gyro at the kick-off point, and that will be sent to the state.

Q. All right. How soon do you plan to commence working on this well?

A. As soon as we can get a permit.

EXAMINER STOGNER: Mr. Carr, I thought you might be able to finish. We need to trade out reporters, so we're going to take a five-minute recess. Sorry to intervene at this point.

(And the proceedings concluded.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10806, heard by me on August 26 1993.

Michael E. Stogner, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Susan B. Sperry, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL September 3, 1993.

Susan B. Sperry

SUSAN B. SPERRY, RPR, CM
CCR No. 156

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING)
CALLED BY THE OIL CONSERVATION)
DIVISION FOR THE PURPOSE OF)
CONSIDERING:) CASE NO. 10806

APPLICATION OF KINLAW OIL CORPORATION

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: Michael E. Stogner, Hearing Examiner

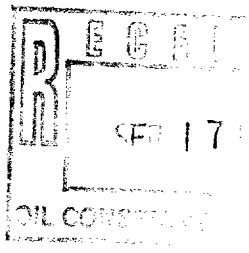
August 26, 1993

Santa Fe, New Mexico

Volume II

This matter came on for hearing before the Oil Conservation Division on August 26, 1993, at Morgan Hall, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Deborah O'Bine, RPR, Certified Court Reporter No. 63, for the State of New Mexico.

ORIGINAL



I N D E X

August 26, 1993
Examiner Hearing
CASE NO. 10806

E X H I B I T S

A P P E A R A N C E S

FOR THE DIVISION: ROBERT G. STOVALL, ESQ.
General Counsel
Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

FOR THE APPLICANT: CAMPBELL, CARR, BERGE & SHERIDAN, P.A.
P.O. Box 2208
Santa Fe, New Mexico 87504
BY: WILLIAM F. CARR, ESQ.

EXAMINER STOGNER: Thank you Mr. Carr. Appreciate your patience.

Q. (BY MR. CARR) Mr. Phillips, in your opinion, will granting of this application be in the best interest of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes.

Q. Were Exhibits 6 and 7 either prepared by you or compiled under your direction and supervision?

A. Yes.

MR. CARR: At this time, Mr. Stogner, we'd move the admission of Kinlaw Energy Company's Exhibits 6 and 7.

EXAMINER STOGNER: Exhibits 6 and 7 will be admitted into evidence at this time.

MR. CARR: That concludes my direct examination of Mr. Phillips. I pass the witness.

EXAMINATION

BY EXAMINER STOGNER:

Q. Mr. Phillips, once you do your build section of the casing, you will employ, as I understand, a downhole motor device?

A. Yes.

Q. What will be your drilling medium? Will that be mud or foam?

A. We have plans to use a fresh water polymer with an addition of potassium chloride, the fresh water polymer, for several reasons. We're going to be drilling a smaller hole. The friction factor for the polymer is a lot less. We'll be able to establish a -- with limited -- in other words, with limited surface pressure availability or capability, we'll be able to get the pressure drop we need across the motor to efficiently drill the well.

The motors work better basically with the polymer fluid. And also the cleanness of the fluid will also prevent, we feel like we will prevent some damage to the reservoir. There won't be any solids or -- drilling mud solids that might get trapped in the vugs of the fractures that we drill.

Q. The same material will be utilized on your horizontal section also?

A. Yes.

Q. Have you employed this method in the past with, I believe your partner said 36 horizontal wells in Texas?

A. Yes. I came to work for Kinlaw when they were on their fifth well, the Pearsall-Austin chalk, and we used fresh water to drill those wells. The Austin chalk is a dense limestone, of course, highly

fractured. Our goal there was to connect as many of the fracture systems as we could in a single horizontal wellbore. We drilled medium-radius curves there, and I think our longest wellbore or lateral was around 42, 4300 feet, something like that.

We used fresh water with polymer additions for sweeping the hole, to clean the hole up and make the drill string slide at a better rate. We're not able to -- when we're building angle, we're not able to rotate.

Q. What is the accuracy of direction initially when you're setting up your initial azimuth or direction to go on this type of tool?

A. Basically, the first 60 percent of the hole can be drilled blind because you can't get magnetic surveys due to the interference from the casing. However, once we have 60 percent of the curve drilled, if we are not getting good magnetic surveys, we can stop, change the bottomhole assembly, and run a gyro or a magnetic survey, using nonmagnetic materials in the bottom part of the assembly.

Q. So there's not even a steering mechanism for your initial directional?

A. We have that option. We can also steer the hole. We can use wire line and get real-time

direction and inclination values. And that is another option that we've looked at, and more than likely we'll use.

Q. With this well and with what you're asking, you've kind of limited yourself in a 90-degree window, essentially?

A. That's correct.

Q. Are you going to be able to meet that requirement?

A. We feel we can. If, however, we do not, we'd be prepared to plug back and change the direction.

Q. There's no whipstock involved in these particular little pools?

A. No, sir. We'll be using just a hard cement plug, a kick-off plug. If, for some reason, we cannot get a hard enough plug by batch mixing or whatever to be able to get away from the old wellbore, there are some mechanical whipstocks to work an open hole, but they are not as reliable. We found them not to be very reliable in our past.

Q. Let me see if I've heard right. This is a 7-inch casing; correct?

A. Yes, it is.

Q. And you'll be coming out what size of a

hole?

A. It's a 4-3/4 hole, using a 3-3/4 motor. And the reason for that over a 4-3/4 motor behind a 6-1/2 inch bit is just due to the strength of the motor. The Baker Hughes Intec folks that we've used for the last two or three years, they feel that the reliability of the 3-3/4 inch motor is better. And we feel like we'll be able to extend the lateral further with the 4-3/4 bit and 3-3/4 motor.

Q. Would you be using drill pipe or tubing to be run in this assembly initially?

A. The tubing that goes through the curve will be -- it will be 2-7/8 P-105 tubing through the curve itself. We will pick up approximately 30 joints of heavy-weight drill pipe for weight, and that will all stay in the vertical part of the hole.

The drill pipe will be 3-1/2 inch rented drill pipe, which we'll have to keep extremely clean of scale and rust due to the sensitivity of the motors to the scale, the abrasives.

Q. Has Kinlaw done any horizontals at this depth prior to now?

A. 13,000 feet, no, sir. The chalk wells, the majority of our wells were in Austin chalk. Those wells, kick-off point was between 5,000 and, say,

6,500 feet.

The directional wells we drilled in the Gulf, with some of those we hit some targets at 52 degrees in the Miocene sands, offshore Louisiana. Those -- the total measured up of some of those wells was over 12,000 feet, but those were directional wells.

Q. And those weren't short radius?

A. Those were medium radius.

Q. Medium radius. What do they consider the breakoff now between short radius and medium radius?

A. Short radius is -- I think the medium radius is around 350 feet -- you know, 300 to 400 feet, and short radius is really basically anything under that. Long radius would be in excess of 1,000.

EXAMINER STOGNER: I haven't kept up with the nomenclature on that.

I have no further questions of Mr. Phillips or Mr. Hill at this time.

MR. STOVALL: I have no questions.

EXAMINER STOGNER: Thank you, Mr. Stovall.

Mr. Carr, do you have anything further?

MR. CARR: And I have no questions.

EXAMINER STOGNER: With that, there being nothing further in Case 10806, this case will be taken

under advisement.

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Deborah O'Bine, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that I caused my notes to be transcribed under my personal supervision, and that the foregoing transcript is a true and accurate record of the proceedings of said hearing.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL, August 28, 1993.

Deborah O'Bine

DEBORAH O'BINE
CCR No. 63

OFFICIAL SEAL
Deborah O'Bine
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: Sept. 19, 1994

I hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10806 heard by me on 26 August 1993.

Oil Conservation Division, Examiner