1	NEW MEXICO OIL CONSERVATION DIVISION STATE LAND OFFICE BUILDING		
2	STATE OF NEW MEXICO CASE NOS. 10807, 10808, 10809		
3	Consolidated Cases		
4	IN THE MATTERS OF:		
5	The Application of Kinlaw Oil Corporation for a High Angle/		
6	Horizontal Directional Drilling Pilot 10807 Project, Special Operating Rules		
7	Therefor, a Non-Standard Oil Proration Unit, an Unorthodox Well Location,		
8	and a Special Project Oil Allowable, Lea County, New Mexico.		
9	The Application of Kinlaw Oil		
10	Corporation for a High Angle/ 10808 Horizontal Directional Drilling Pilot		
1 1	Project and Special Operating Rules Therefor, Lea County, New Mexico.		
12	The Application of Kinlaw Oil		
1 3	Corporation for a High Angle/ Horizontal Directional Drilling Pilot		
1 4	10809 Project, Special Operating Rules Therefor, a Non-Standard Oil Proration		
15	Unit, an Unorthodox Well Location, and a Special Project Oil Allowable,		
16	Lea County, New Mexico.		
17			
18	BEFORE:		
19	MICHAEL E. STOGNER		
20	Hearing Examiner		
2 1	State Land Office Building		
22	Thursday, September 23, 1993		
23			
2 4	REPORTED BY: CARLA DIANE RODRIGUEZ		
2 5	Certified Court Reporter for the State of New Mexico		

## APPEARANCES . 1 2 3 FOR THE NEW MEXICO OIL CONSERVATION DIVISION: 4 ROBERT G. STOVALL, ESQ. 5 General Counsel State Land Office Building 6 Post Office Box 2088 Santa Fe, New Mexico 87504-2088 7 8 FOR THE APPLICANT: 9 CAMPBELL, CARR, BERGE & SHERIDAN, P.A. Post Office Box 2208 10 Santa Fe, New Mexico 87504-2208 BY: WILLIAM F. CARR, ESQ. 11 12 13 14 15 16 17 18 19 2.0 2 1 22 23 24 25

1	INDEX	
2		Page Number
3	•	
4	Appearances	2
5		
6	WITNESSES FOR THE APPLICANT:	
7		
8	1. MICHAEL ROBERT HILL	
9	Examination by Mr. Carr	5
10	Examination by Mr. Stogner	20
1 1		
12	Certificate of Reporter	2 6
13		
14	EXHIBITS	
15		Page Marked
16	Exhibit No. 1	9
1 7	Exhibit No. 2	1 3
18	Exhibit No. 3	1 4
19	Exhibit No. 4	1 4
20	Exhibit No. 5	16
2 1		
22		
2 3		
2 4		
25		

1 EXAMINER STOGNER: At this time, I'll 2 call Case No. 10807.

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MR. SJOVALL: 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.

EXAMINER STOGNER: Call for appearances.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm Campbell, Carr, Berge & Sheridan. We represent Kinlaw Oil Corporation in this case, and I have one witness.

I would also request at this time that this case be consolidated, for purposes of hearing, with Case 10808 and 10809. These are also applications of Kinlaw for horizontal drilling. They immediately offset each other, and the testimony in these cases will be virtually identical.

EXAMINER STOGNER: If there are no objections, I'll call Cases 10808 and 10809 at

1 this time. MR. STOVALL: Case No. 10808 is the 2 application of Kinlaw Oil Corporation for a 3 high-angle/horizontal directional drilling pilot 4 project and special operating rules therefor, Lea 5 6 County, New Mexico. Case No. 10809 is the 7 application of Kinlaw Oil Corporation for a 8 high-angle/horizontal directional drilling pilot 9 project, special operating rules therefor, a 10 non-standard oil proration unit, an unorthodox 11 well location, and a special project oil allowable, Lea County, New Mexico. 12 EXAMINER STOGNER: I'll call for any 13 14 additional appearances other than the Applicant 15 Kinlaw in these matters at this time. 16 These cases will be consolidated for 17 purposes of testimony. Mr. Carr. 18 MICHAEL ROBERT HILL 19 Having been first duly sworn upon his oath, was 20 examined and testified as follows: 21 EXAMINATION BY MR. CARR: 22 23 0. Would you state your name for the 24 record, please.

A. Michael Robert Hill.

1 Q. Mr. Hill, where do you reside? 2 Α. In Austin, Texas. 3 Q. By whom are you employed and in what capacity? 4 5 A. Kinlaw Oil Corporation as petroleum 6 geologist. 7 Q. Have you previously testified before this Division? 8 Yes. I have. 9 Α. 10 0. At the time of that testimony, were your credentials as a petroleum geologist 11 12 accepted and made a matter of record? Yes, they were. 13 Α. 14 Ο. Are you familiar with the applications 15 filed on behalf of Kinlaw in each of these cases? A. Yes, I am. 16 17 Are you familiar with the proposed Ο. 18 horizontal drilling for each of the wells in the 19 subject area? 20 A. Yes, I am. 21 MR. CARR: Mr. Stogner, are the witness's qualifications acceptable? 22

MR. STOGNER: They are.

Kinlaw seeks in each of these cases?

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Q. Mr. Hill, would you briefly state what

- A. Kinlaw seeks approval to horizontally directionally drill the following wells: V.F. Petroleum Huber State No. 1, the Shell Oil Company SDA No. 1, the Shell SDA No. 2, by reentering an existing borehole and kicking off the top of Devonian and drilling approximately 500 to 700 feet lateral to the top of Devonian.
  - Q. Is Kinlaw seeking exemptions from existing Division well location requirements?
  - A. At this time we are not. We hope to not be needing exemptions, but it's going to depend on where our bottomhole locations fall after running gyro surveys on these reentry wells.
  - Q. So you'll reenter, drill out the plugs, things of that nature, and then survey?
- 17 A. That's correct.

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- Q. That will affect where the actual terminus of the horizontal portion of the well is actually located?
  - A. That's correct.
- Q. Are you seeking an exemption from the acreage dedication requirements?
- A. Once again, at this time, we hope not to need that, but it's going to depend on where

1 | the bottomhole location falls.

- Q. On two of the wells, the Huber and the Shell SDA No. 1, you're proposing 80-acre units, is that correct?
- A. That's correct.

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- Q. If you're able to keep the wellbores on the 40 acres on which the hole was actually located, you won't need those additional 40-acre tracts, is that right?
- 10 A. That's correct.
- Q. You're not seeking a special oil allowable for these wells?
- 13 A. Not at this time.
- Q. Mr. Hill, you, in fact, testified four weeks ago in Case 10806, did you not?
- 16 A. That's correct.
- Q. That was the case in which Kinlaw was seeking authority to horizontally drill its New Mexico "N" No. 1 well?
- 20 A. That's correct.
- Q. Could you advise the Examiner what's happened since that time to the New Mexico "N" No. 1?
- A. Since that time, we received permission to reenter that well. We reentered to a

depth of approximately 9700 feet and, after attempting a squeeze job on some perfs at that depth, we were coming back into the hole and found that the casing had parted in both the 9-5/8 and the 13-5/8" casing. So, at that time, a decision was made to replug this well.

- Q. And that has been done?
- A. That's correct.
- Q. The Commission has approved the plugging program?
- A. That's correct.

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- Q. Let's go to what has been marked Kinlaw Exhibit No. 1. I would ask you to identify and review this for Mr. Stogner.
- A. This is an outline, in yellow, of the acreage that Kinlaw currently has under lease with the location of the wells that we plan to reenter.
- Q. Could you briefly identify the three wells which are involved in this hearing, and then point out the acreage which will be dedicated to those wells?
- A. The well that we are attempting to reenter first and foremost will be the V.F.

  Petroleum Huber State No. 1, which is located in

1 the northeast quarter of Section 5. It's
2 designated by a dry hole symbol.

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The other well would be the No. 1 SDA, which is in the southwest quarter of the southwest section of 36. The 80 acres that we might need on that well would be the southwest of the southwest of the southwest of 36, and the southeast of the southeast of 35.

Going back to the V.F. Petroleum well, the 80 acres that we might need to designate on that well would be that stand-up 80 on the east half of the northeast quarter of Section 5.

The third well would be the Shell Oil SDA No. 2, which is in the southeast quarter of the southwest quarter of Section 36, and that would be just a 40-acre designation.

- Q. Now, Mr. Hill, the Huber well in Section 5, is an unorthodox location, is that correct?
- 20 A. That's correct.
  - Q. That location has been previously approved by the Division?
    - A. That's correct.

MR. CARR: Mr. Examiner, that location was approved in Case 7173, and it was Order No.

- 1 | R-6608, February 25, 1981.
- Q. Mr. Hill, is there other Devonian development within a mile of these wells?
  - A. No, there is not.
- Q. Are there unleased minerals in the area that we're talking about?
  - A. Yes, there are.
  - Q. Are those State of New Mexico properties?
- 10 A. That's correct.

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- 11 Q. Have you reviewed this proposal with
  12 the New Mexico State Land Office?
  - A. Yes, we have. We talked to a Mr. Albers at the State Land Office. He had no objection, and stated that we would need a commercial lease on state-owned surface underneath this acreage.
  - Q. In fact, he wrote Mr. Stogner with that recommendation, did he not?
  - A. That's correct.
  - Q. Does Kinlaw have any objection to the orders that result from this hearing requiring that, where needed, Kinlaw will obtain business leases from the New Mexico State Land Office?
- 25 A. No, we don't.

- Q. Is the acreage you propose to dedicate to the wells, actually state land?
  - A. That is correct.

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- Q. What is the status of the royalty ownership in this area?
- A. The royalty ownership is all the same, identical under each tract.
  - Q. Is the working interest all in Kinlaw at this time?
- A. That's correct.
  - Q. What is the current status of the development on each of these tracts?
  - A. At the present time, there is no current development except for the V.F. Petroleum well, which we did receive permission to reenter and we are, at the present time, attempting to drill out the plugs.
  - Q. Why don't we describe just briefly the general characteristics of the formation. You did this four weeks ago and so I don't think you don't need to go into particular detail, but I think it would be useful, at this point, just to summarize the characteristics of the Devonian in this area.
    - A. The Devonian is a shallow water

carbonate, consisting of a dense, crystalline dolomite, very little primary porosity. It does exhibit good secondary porosity in the way of fractures and vugs.

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- Q. Let's go to Exhibit No. 2. Would you identify that, please.
- A. Exhibit No. 2 is a structure map on the top of Devonian. It basically shows anticlinal feature bounded by three faults, with the apex of the structure in and around the Kelly State No. 1 at a subsea of minus 9079.
- The three wells in question here are the V.F. Petroleum well, which has a subsea of minus 9101, and the Shell SDA No. 1 which is a minus 9179, and the SDA No. 2, which is the lowest of the three, at a minus 9328.
- Q. Actually these are at the top of structure, are they not?
- A. Two out of the three are. There is a SDA No. 2 is not the lowest well in the structure, but it is about the third.
- Q. If you horizontally drill all these wells, what order would you anticipate taking them in?
- A. Well, we would drill this V.F.

1 Petroleum well first, the SDA No. 1, and then the SDA No. 2.

- Let's move now to Exhibit No. 3, the isopach. Would you review that for Mr. Stogner?
- Exhibit 3 is a net pay isopach of the Devonian. It's showing a range of 109 feet of neat pay, on the low end; up to 411 feet of net pay on the high end.

The V.F. Petroleum Huber State well has approximately 389 feet of net pay, the Shell SDA No. 1 has 311 feet, and the SDA No. 2 has 162 feet of net pay.

- From a geological perspective, is this a good candidate for a horizontal drain hole?
  - Α. Yes, it is.

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- You wouldn't see any problem in being able to keep the wellbore within the Devonian formation?
- Α. No, we do not.
- Q. Let's go to Exhibit No. 4, and I would ask you to review that for the Examiner.
- A. Exhibit No. 4 is a cumulative production map of the wells in the South Devonian field, with a well-by-well cumulative underneath each well.

Q. What is really your hope with this horizontal program?

- A. With this horizontal program, we hope to go in and recover reserves that have been left behind by virtually drilling this formation.
- Q. If you are successful with the Huber well, do you have an idea as a how soon you might be reentering other wells?
- A. Within, I would say, three to six months of the Huber State.
- Q. Huber State has a dry hole symbol. Why is that?
- A. The Huber State was drilled as an infill well in approximately 1981. The well tested free oil with no water on a drill stem test. At the time the well was drilled, there was only one other well which was producing in the field, which was the highest well in the field, and that well was producing in the range of 3,000 barrels of water a day and a hundred barrels of oil.

Once a decision was made to run pipe on the Huber State, after having a water-free drill stem test, the well was acidized and only recovered a small amount of oil. We feel like it

has to do with the way the Kelly State, or the highest most well in the field was being pulled at the time, and also had to do with the type of acid job they did on it.

- Q. What conclusions can you reach from your geologic study of this area?
- A. We feel like we have a small Devonian field which is well-suited for horizontal drilling. We believe we can adequately drain left-behind reserves from this reservoir.
- Q. Let's go to Kinlaw Exhibit No. 5. Can you identify that, please?
- A. Exhibit 5 is the wellbore diagram of the V.F. Petroleum Huber State No. 1. It basically shows what we're going to attempt to do on this well. This well has 12-3/4" surface casing set at 282 feet. The 8-5/8 casing was shot off at approximately 251 feet.

Initially, we'll attempt to tie back into this 8-5/8 casing, drill out the plugs No. 3 and 4 on the diagram. At that point, we will move in a drilling rig and drill out test casing and drill out plugs 5, 6 and 7, and attempt to tie into 5-1/2 at 11,008 feet.

If that proves unsuccessful, at that

time we will sidetrack the 5-1/2" casing that's currently in this well, and drill new hole back down to the top of Devonian and kickoff there at a short radius.

- Q. At what depth do you anticipate kicking off in the Devonian formation in this well?
- 7 A. We anticipate kicking off approximately 8 12,915 feet.
  - Q. It might be slightly shallower than that if you have trouble tying into that lower string?
  - A. That's correct. It could be anywhere between 12,878 and 12,915.
    - Q. That would be in the Devonian?
  - A. That's correct.

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- Q. What would be the kickoff depths in the State SDA 1 and 2?
  - A. The SDA No. 1 kickoff point would be at 12,958. The SDA No. 2 would be at 13,110.
    - Q. Now, as to the horizontal drilling portion of the hole, will Kinlaw be using the identical procedure that was reviewed on August the 26th by Mr. Dave Phillips in Case 10806?
    - A. That's correct.
      - Q. You will be using a small-angle

horizontal radius, and staying within the 1 2 Devonian?

> Α. That's correct.

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MR. CARR: Mr. Stogner, at this time we would request that the testimony of David Phillips in Case 10806, presented on August 26th, be incorporated into the record of this proceeding.

EXAMINER STOGNER: The record in Case 10806 will be incorporated at this time in this consolidated matter.

- Mr. Hill, do you anticipate that the Q. acreage dedicated to each of these wells will, in fact, be drained by the wells, if they are successful?
  - Yes, I do. Α.
- Do you anticipate any excessive Q. drainage from offsetting tracts?
  - Α. No, I do not.
- In fact, if there was, it would still be tracts that have identical ownership with the dedicated acreage, is that right?
  - That's correct. Α.
- If the wells are successful, do you Ο. 25 have a guess or a hope as to how long they might

be able to produce?

- A. We're anticipating seven to 10 years.
- Q. At the conclusion of the drilling, as well as after you drill out the plugs, will you be running a directional survey on each of the wells?
  - A. That's correct.
- Q. Will copies of these surveys be provided to the Oil Conservation Division?
  - A. Yes, they will.
- Q. How soon does Kinlaw hope to commence this effort?
- A. As soon as we're authorized to do so.
  - MR. CARR: Mr. Stogner, I have prepared proposed orders in these cases, and I have them on floppy disk, but Mr. Hill this morning pointed out some errors in footages. I'll have them revised, and we'll submit them to you later today, if that's all right with you.

EXAMINER STOGNER: That would be good. I appreciate that.

Q. Now, Mr. Hill, in your opinion, will approval of each of these applications be in the best interest of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, they will.

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- Q. If these applications are granted and the wells are successful, will oil be recovered that otherwise will be left in the ground?
  - A. Yes, it will.
- Q. Were Exhibits 1 through 5 prepared by you?
- A. Yes, they were.

MR. CARR: At this time, Mr. Stogner, we move the admission of Kinlaw Exhibits 1 through 5.

EXAMINER STOGNER: Exhibits 1 through 5 will be admitted into the record at this time.

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

## EXAMINATION

## BY EXAMINER STOGNER:

- Q. Mr. Hill, in your conversations with the State Land Office, was the matter discussed of the first well, I'm referring to the one in Case 10807, in which you're proposing to dedicate perhaps 80 acres, a portion of Section 36 and a portion of Section 35, their concern that that's two different leases?
  - A. Yes, they did mention that there was

some concern there. They said if we could get approval through this hearing, that that would be okay with them that we did what we're talking about.

- Q. If it was approved at this level, what would the State Land Office require of Kinlaw to communitize or whatever had to be done to connect those two 40s?
  - A. They really didn't tell us.

MR. CARR: Mr. Stogner, we would have to communitize the state leases. I have been involved in those discussions with them. If the surface is a state surface, a business lease would be required, they said.

- Q. Mr. Hill, since I don't have the record in front of me in Case 10806, even though we incorporated those, can you enlighten me again what the maximum horizontal distance you're hoping that can be accomplished with this type of short radius horizontal drilling?
  - A. Approximately 700 feet.
  - C. That will be max?
- 23 A. Yes, sir.

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Q. Now, should the well in Case 10807 not reach that maximum 700 foot horizontal extension

but, in fact, stop short of Section 35, then you're proposing only a 40-acre proration unit be dedicated?

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- A. That's correct. As I stated earlier, it would depend on where the bottomhole location falls. And if it's actually a little bit closer to Section 35 than where the surface hole location was staked, we would need to go over there into the other 40 acres.
- Q. Have you taken a reading or do you know about what the natural drift of those old original vertical wells were, and what direction?
- A. If I can recall correctly, I believe the one that we looked at initially had around five to six degrees of deviation; but, in what direction, I'm not sure. I believe there was around 300-and-some-odd feet total.
- Of course, it was done by a single shot, and it didn't give the exact bottomhole location. It would depend on whether all that deviation was in one direction or whether it was going a number of different directions.
- Q. Now, let's refer to the well in Case
  10809. That's your Huber State Well No. 1 or the
  Huber State Well No. 1.

There again, the same mechanics of your proposed horizontal drilling would be set a hundred foot max, is that true?

A. That's correct.

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- Q. And you're proposing to go in a southern direction and connect the two, I call them Lots 1 and 8, being that shaded area on your Exhibit No. 1 in Section 5, is that correct?
  - A. That's correct.
- Q. According to my calculations, that 700 foot wouldn't even connect that 40-acre portion to the south?
- A. That's correct. At that time, it would depend on what type of allowable we needed and so forth. That's the main reason for going for 80s on that particular well. If we needed to come back and request a larger allowable, we might need to incorporate those two 40-acre units.
- Q. Our policy is, if you connect the two with the horizontal portion, then you're entitled to that, but if you're just drilling toward it, that doesn't entitle you to that other 40. Are you proposing that you're requesting this just to get a higher allowable, but not actually connecting the two 40s?

A. No. My understanding was that we would have to have two 40-acre proration units in order to get a higher allowable, and at this point we're not asking for one but I said, in the future, if we needed to, we might need to add those two.

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- Q. Why would you need a higher allowable?
- A. At this time we don't know. We would have to drill the well, potential it, and see what draw-down pressures we were getting from producing this well, and checking bottomhole pressures, so on and so forth. We felt like we weren't hurting the reservoir, producing it at a higher than the depth bracket allowable, and at some point we might request a higher allowable.
- Q. What is that depth bracket allowable at the present time?
  - A. It's around 430 barrels a day.
- Q. I know you're hoping for that, but are you anticipating it being over 430?
- A. Not at this time. That's why we're not currently requesting it.
- Q. There again, with our policy, the same restriction on Case 10809 would be put or set or written in as in 10807. It's possible that you

1 could connect the two, and that's what you're 2 requesting today, and, if an order is issued, we'll stipulate that. 3 However, if the two actual 40s are not 4 5 connected, then you would not be entitled to hold the two 40-acre tracts, and only that one 40-acre 6 7 tract could be written in or incorporated. And then, once the well is drilled or once the survey 8 9 is established, then the proration unit could 1.0 then be, how would you say, set, or drawn, or set 1 1 out, whatever the case may be. 12 EXAMINER STOGNER: I have no other 13 questions of Mr. Hill at this time. Are there 14 any other questions, Mr. Carr? 15 MR. CARR: We have nothing further in 16 this case, Mr. Stogner. 17 EXAMINER STOGNER: Does anybody else have anything further in Cases 10807, 10808 or 18 10809? 19 2.0 Then these cases will be taken under 2 1 advisement. 22 (And the proceedings concluded.) 23 I do hereby certify that the foregoing is a complete record of the proceeds in the the total iner hearing of Lass des. 10807, 10808, 10809 24 heard by me An 23 25

Oil Conservation Division

CERTIFICATE OF REPORTER. 1 2 3 STATE OF NEW MEXICO ) ) SS. COUNTY OF SANTA FE 4 5 6 I, Carla Diane Rodriguez, Certified 7 Court Reporter and Notary Public, HEREBY CERTIFY 8 that the foregoing transcript of proceedings before the Oil Conservation Division was reported 9 10 by me; that I caused my notes to be transcribed 11 under my personal supervision; and that the 12 foregoing is a true and accurate record of the 13 proceedings. I FURTHER CERTIFY that I am not a 14 15 relative or employee of any of the parties or 16 attorneys involved in this matter and that I have 17 no personal interest in the final disposition of 18 this matter. 19 WITNESS MY HAND AND SEAL September 30, 20 1993. 21 22 23 CARLA DIANE RODRIGUEZ, 24

CCR No. 4