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.: 14676

APPLICATION OF CIMAREX ENERGY COMPANY OF COLORADO FOR APPROVAL OF A SECONDARY RECOVERY PROJECT AND TO QUALIFY THE PROJECT FOR THE RECOVERED OIL TAX RATE, LEA COUNTY, NEW MEXICO.

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS
EXAMINER HEARING

BEFORE: DAVID K. BROOKS, Legal Examiner
WILLIAM JONES, Technical Examiner

DATE: June 23, 2011
Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID K. BROOKS, Legal Examiner, and WILLIAM JONES, technical Examiner, on Thursday, June 23, 2011, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: Irene Delgado
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A P P E A R A N C E S

FOR THE APPLICANT:

JIM BRUCE
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I N D E X

EXAMINER JONES: Back on the record. Will the record reflect that we are going to continue Cases 14673 and 14674 until July 23 -- 21.

MR. BRUCE: 21

EXAMINER JONES: 21.

EXAMINER BROOKS: I won't be here then. That's the day of the Rocky Mountain Mineral Foundation Institute, I believe.

MR. BRUCE: I will be attending absentia.

EXAMINER BROOKS: You will, of course, certify that you listened to the tapes.

MR. BRUCE: Possibly.

EXAMINER JONES: The next one is, let's call Case 14676, application of Cimarex Energy Company of Colorado for approval of a secondary recovery project and to qualify the project for the recovered oil tax rate, Lea County, New Mexico. Call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe representing the applicant. I have three witnesses.

EXAMINER JONES: Any other appearances?

(No response.)

EXAMINER JONES: Will the witnesses please stand and state your names.

MR. DOWDLE: Nash Dowdle.

MR. FISCO: John Fisco.

MR. WILCOX: Tim Wilcox.

EXAMINER JONES: Will the court reporter please swear the witnesses.

(Witnesses duly sworn.)

EXAMINER BROOKS: You don't look old enough to be the Nash Dowdle I once knew.

MR. DOWDLE: Yes. And out of Midland?

EXAMINER BROOKS: Yes.

MR. DOWDLE: I'm the son. Junior.

EXAMINER BROOKS: I figured you must be. I remember Nash Dowdle, but he was an older man when I was very young, and that couldn't possibly be you.

MR. DOWDLE: No, I'm the younger.

NASH J. DOWDLE, JR.

(Having been sworn, testified as follows:)

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name and city of residence for the record.

A. Nash Jay Dowdle, Junior, Midland, Texas.

Q. Who do you work for and in what capacity?

A. Cimarex Energy Company. I'm a landman.

Q. Have you previously testified before the Division?

A. No, I have not.

Q. Please summarize your educational employment background.

A. I have a BBA from University of Texas, Permian Basin out of Odessa, 1978, and I have a associate of science degree in paramedic technology also in 1989.

Q. And what is your work experience?

A. Approximately 15 years as a landman and another 15 years as a paramedic.

Q. Who have you worked for recently? How long have you been with Cimarex?

A. About a year. Before that I was with Endeavor Energy in the contract with OXY.

Q. Have you previously -- excuse me. Are you familiar with the land matters involved in this application?

A. Yes, I am.

Q. And does your area of responsibility at Cimarex include this portion of Southeast New Mexico?

A. Yes, it does.

MR. BRUCE: Mr. Examiner, I tender Mr. Dowdle as an expert petroleum landman.

EXAMINER JONES: He is so qualified.

Q. Mr. Dowdle, can you identify Exhibit 1 for

the Examiner and explain what Cimarex seeks in this case?

A. It's covering approximately 440 acres in Section 1, and we are proposing a waterflood injection to the -- to this area covering 440 acres.

Q. And the lease is outlined or highlighted in yellow on Exhibit 1?

A. Correct.

Q. And it is a single federal lease?

A. That is correct.

Q. And does Cimarex own and control 100 percent of the working interest?

A. That's correct.

Q. And working interest -- all interests are uniform in this lease as to the injection formation?

A. That's correct.

Q. What is Exhibit 2, and could you identify that for the Examiner?

A. That's the Buffalo Yates Pool, which the subject lease is under, and it's a 40-acre spacing, and it's covering sections, Southeast Quarter Section 36, the North Half of Section 1, North Half of Southeast of Section 2, and the Northwest Quarter of Section 5 and North Half of Section 6.

Q. And this is an oil pool?

A. That's correct.

Q. Regarding the injection application, who are the offset operators?

A. They are -- one minute. Saber, Saber Energy.

Q. Or should I say -- Exhibit 1 is -- or Exhibit 3 is a land plat, but are all the offset operators and working interest owners listed on there?

A. That's correct. It would be Saber, Strata and Penroc.

Q. Those are the operators. They operate offsetting wells?

A. That's correct.

Q. And are the other interest owners listed, the working interest owners?

A. I'm not understanding.

Q. Are they -- there are other parties who are listed on the exhibit.

A. That's correct.

Q. Are they working interest owners?

A. Yes, they are.

Q. Okay. Has anyone contacted you regarding the proposed injection application?

A. Yes, a gentleman from Saber contacted me a few weeks ago and was concerned about some water

issues. He was concerned that he might -- their wells may be flooded, and he was wondering if we could take care of that excess water. And I told him we certainly would consider it. And I didn't hear from him for a while, and then about two weeks ago he called me back and said, "We don't have any concerns whatsoever," and so he re-evaluated and he has no concerns.

Q. And is the surface owner where the injection well is located the federal government?

A. That is correct.

Q. And was the surface owner and all of the offset operators or working interest owners, working interest owners notified of this application?

A. Yes, they have been.

Q. And is that reflected in Exhibit 4?

A. Yes, it is.

Q. And were Exhibits 1 through 3 prepared by you or under your supervision?

A. Yes, they were.

MR. BRUCE:. Mr. Examiner, I would move the admission of Exhibits 1 through 4.

EXAMINER JONES: 1 through 3 -- 1 through 4?

MR. BRUCE: Well 1 through 4. Exhibit 4 was prepared by me.

EXAMINER JONES: We will admit Exhibits 1

through 4.

(Exhibits 1 - 4 admitted.)

MR. BRUCE: I have no further questions of the witness.

EXAMINER JONES: The notices went out June the 2nd. Is that correct?

WITNESS: That is correct.

EXAMINER JONES: And that's -- I don't have any more questions.

EXAMINER BROOKS: No questions.

MR. BRUCE: Call Mr. Fisco to the stand.

JOHN FISCO

(Having been sworn, testified as follows:)

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Good afternoon. Again, would you repeat your name for the record and your city of residence?

A. John Fisco, Midland, Texas.

Q. And who do you work for?

A. I'm a contract geologist for Cimarex Energy.

Q. Have you previously testified before the Division as a geologist?

A. No.

Q. Could you summarize your educational

employment background for the Examiner?

A. Received a BS in mathematics and geology in 1977 from University of Wisconsin at Oshkosh. Attended University Southwest Louisiana Lafayette for master's work and got -- get my degree at that time, and went to work for Texas Oil and Gas in 1979 as a geologist. Remained there until October of 90 when they were merged in the Marathon, and I've been an independent consulting prospecting geologist ever since.

Q. Are you familiar with the geology involved in this application?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Fisco as an expert petroleum geologist.

EXAMINER JONES: You're a long ways from home coming from Wisconsin.

WITNESS: Well, I had to find money. They didn't hire us up there.

EXAMINER JONES: I keep hearing that. He is so qualified.

Q. Mr. Fisco, would you identify Exhibit 5 for the Examiner?

A. Okay. Exhibit 5 is a montage showing the stratigraphy and lithology concerning the Yates

Formation. The first chart on there, on the left, is a stratigraphic chart shows the position of the Yates overlying the seven Rivers Formation and underlying the Tansill Formation, all of which being Guadalupian in age.

On the right side of that chart, the lithology column basically shows that the formation can have a mix of lithologies including carbonates and sands and evaporates.

Below that there is a schematic showing the relative position of the Yates in the back reef titled "flat area," behind the Capitan Reef, and again, overlying the Seven Rivers and underlying the Tansill.

The Yates Sand is typically deposited in a lowstand environment. The diagram in the upper right-hand corner kind of schematically demonstrates how during lowstand environments, clastics will migrate across the shelf margin, and during highstand carbonates will be deposited in the flood environment. The Yates is marked by a series of repeats of this phenomenon.

The sands typically are found in a strike oriented orientation, in this case being pretty much east-west in the area that I'm studying. In the Sand Lenses there can be numerous of them within the Yates

formation, and they are typically interbedded with tight dolomites or anhydrites, and the sands will vary in porosity depending on how much dolometic cement that they may contain.

The final portion of the montage is the type log, and it's also the injection candidate that we will be discussing today, the Bondurant Number 10. What you can see on the top portion is a lot of pink which marks the Tansill Anhydrite Bed that sits over the top of the Yates in this general area. And then there are several markers there that are highlighted by Yates E2 down through B1.

There are seven sands that make up the Yates Formation in the area. In this particular well there is 108 feet of total gross sand of various porosity within a 256-foot interval. And, of course, from well to well that -- that number will change from well to well.

The primary sands that produce in the area are marked as the C1 and the D1. In this particular well, the D1 was perforated and was being produced, and it's marked by the red rectangle in the center of the wellbore. The E1, E2 that sit up above, and the B2 that sits down near the base that's not -- B1 that's down near the base are very limited. They come and go

in the area. And the B2 typically is wet in most wells, so we will be concentrating on talking about the C1 and B1 for most of this. And in this area that the Yates, very top portion of the Yates, there is anhydrites interbedded with them, and then as you migrate down into the section, you will see that -- that sands are interbedded with dolomites.

Porosities range from anywhere from zero to about 24 percent on density, and that's out of limestone matrix. Typically we will look at about a 16 percent density cutoff which is about the equivalent of 14 percent sand.

Q. Move on to your Exhibit 6 and discuss it for the Examiner.

A. This is a mapped area of the study area. Section 1 of 19/32 is approximately in the center. The blue outline outlines the Bondurant leasehold within the Buffalo Yates Oil Pool. Several things on here. One, this is a structure map, and it's mapped on the top of the C1. The C1 is typically the most laterally consistent through the area, so it makes it easier to see regional dip mapping on a consistent sand rather than one that comes and goes.

The color coding on the wells, you will see on the legend that each of the different sands that are

encountered in here, I have marked where they produce in individual sands, and, for the most part, what I want you to notice is that this light red or pinkish color marks the C sand production, and it extends across the entire study area.

And as you can see, there is a -- pretty much a regional dip from the west down to the east, which is minor little structural positions, but the sand produces throughout all of them. So you can see from this map that there is not a structural control on the trapping mechanism for the Yates. It's a stratigraphic control where the sands pinch out.

The structure map is on a contour. And that's -- oh, the last thing on here is there is a thin blue line crossing the leasehold in about the middle there, that's the east-west cross section that I will be discussing here in a few minutes.

Q. Move on to your isopach and discuss that.

A. Same area of the map, this is an isopach that shows the total Yates Sand in the area that had 16 percent density or greater, which is again equivalent to 14 percent sand or greater. So it's the conglomerate of all the various sands, and the general look is that we have a very, very tight well-defined east-west trend to the sand package that you find in

the Yates and -- and they are bounded by zero sand to the north and zero sand to the south and get upwards of 72 feet of total -- total sand over 16 percent in the middle.

Q. Finally, could you discuss your cross sections for the Examiner?

A. Okay. Just one added thing on the isopach map, you will see a large blue arrow, that marks the injection candidate that we are going to discuss.

This exhibit is cross section, structurally laid out, running east to west through the Bondurant leasehold. The injection candidate, the Number 10, sits in the middle of the cross section right above the title block. Basically what I'm trying to show on here is that structurally we have dip to the east through the area.

In the yellow shaded you will see where the 16 percent cutoff on the sand so that various wells have various different reservoirs that -- that reach that cutoff and that you will also notice that the perfs, which are those pink rectangles in the wellbore of the various wells will produce from different sands, depending on whether they have -- whether the spacing characteristics were such that they didn't over-produce or have them too close, so they will skip over some

sands on various wells just so they don't have them spaced too close.

The C Sand, the D Sand, with the C being reddish correlation marker in about the middle, and D being the brownish one up above it, are demonstrated as being the most laterally consistent through the area. The E up above comes and goes very quickly. The B, which is the large thick yellow swat on the bottom of the 10, the Bondurant Number 10, for most wells is wet. There is just a couple of wells that produce from it, so again, outlines where the C and the E is located.

Q. And has the injection sand been reasonably defined by development on the Bondurant?

A. Yes.

Q. Are there -- are there any faults connecting any fresh water zone at the injection?

A. I don't believe there are any faults at this level, and I'm not sure there is any fresh water zones in the area.

Q. Were Exhibits 5 through 9 prepared by you or under your direction?

A. Yes, they were.

Q. In your opinion, is the granting of this application in the interest of conservation and the interest of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits 5 through 8.

EXAMINER JONES: Exhibits 5 through 8 will be admitted.

(Exhibits 5 through 8 admitted.)

EXAMINER JONES: 32 east, is that Vacuum Field or north of Vacuum Field?

WITNESS: You are east of Lusk and west of Quail Ridge.

EXAMINER JONES: Okay.

WITNESS: And there are several small fields in 19/32, but the two big ones, Lusk to the west, west edge of 19/32, and Quail Ridge starts up in 19/33.

EXAMINER JONES: Quail Ridge was kind of deep, if I remember, the Yates Formation -- the Queen Formation is kind of deep.

WITNESS: The Queen is down about, I think 42, 43 hundred feet. The Yates out here runs anywhere from 25 hundred to 35 hundred.

EXAMINER JONES: Do you plan on any other completions in this well to sweep anything to the neighbors or --

WITNESS: Well, we will probably immediately perforate the C1 package with the D1. I think we are

going to be requesting that all the sands from B through E be allowed to be injected into, but the C and D are the primary targets.

EXAMINER JONES: Okay. And that's the way it was advertised and noticed to everybody, the whole --

WITNESS: I believe so.

EXAMINER JONES: The whole package? Those Yates Sands are they marine or near marine or --

WITNESS: They're a combination from what I could tell from mapping and research, the lit -- the literature is that you've got a combination of aeolian and fluvial environments out here. It depends on how wet it gets. If it gets dry, blows some dunes across that area, and if you get enough rain, then you might rework some of that into little fluvial channels. I'm thinking, in this area, we have a very strong east-west trend to these sands, so it looks like we've got a little bit more of an aeolian origin to this, and several of the other fields in general townships around are kind of sub-parallel to this, and they are all sub-parallel to the edge of the Capitan Reef.

EXAMINER JONES: This is right north of the reef. Is that correct?

WITNESS: Yes. If you go far enough into the Seven Rivers down below, you will encounter some high

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porosity dolomites, but right first hundred or so feet below the Yates it's pretty much tight dolomite, so we're kind of just a little bit back off. If you move down about 5, 6 miles to the south the sands will almost be sitting on top of the reef.

EXAMINER JONES: Geologically it looks amenable to maybe trying a little auto here. Is that the idea?

WITNESS: The continuity of the C and D is very well suited to getting secondary.

EXAMINER JONES: It does look like it's really ~~lower~~ as you go deeper, at least in this well. The other wells, too.

WITNESS: The B Sand a very good reservoir, but it doesn't, for the most part, it's pretty wet in this area. There is a couple -- on the structure map, you saw a couple of minor structures. The B level will have some of the same things and you will get one well will produce here and one well produce there. I believe most of the sand probably produces outside of the study area.

EXAMINER JONES: Is there any clays, any recycling water through here?

WITNESS: I'm not noticing any clays based on analysis of the logs. It looks like it's either pretty

clean sand or sand with dolomite cements. Of course, the Yates being a radioactive sand, it's always kind of hard to tell exactly what your clay content is, but it looks like pretty clean here.

EXAMINER JONES: You have a spectral gamma ray on it?

WITNESS: I don't think there was one done at the time of the drilling of these wells.

EXAMINER JONES: Did they core anything out of here?

WITNESS: There was one core, and unfortunately I don't have the core data with me today.

EXAMINER JONES: Okay. I don't have any more questions. Thank you very much.

WITNESS: Okay. Thank you.

EXAMINER JONES: David, did you have any?

EXAMINER BROOKS: No questions.

TIM WILCOX

(Having been sworn, testified as follows:)

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Please state your name and city of residence.

A. Tim Wilcox, Denver, Colorado.

Q. And who do you work for and in what

capacity?

A. Cimarex Energy, waterflood engineering manager.

Q. Have you previously testified before the Division?

A. Yes, I have.

Q. And were your credentials as an expert petroleum engineer accepted as a matter of record?

A. Yes.

Q. And you are familiar with the engineering matters related to this application?

A. Yes.

MR. BRUCE: Mr. Examiner, I tender Mr. Wilcox as an expert petroleum engineer.

EXAMINER JONES: He is so qualified.

Q. Mr. Wilcox, have you reviewed data regarding the practicality of this project and the economics of the project?

A. Yes, I have.

Q. Would you identify Exhibit 9 for the Examiner and describe a little bit of the history of this pool.

A. Exhibit 9 is -- I think there are two Exhibit 9s in there -- but production and cum production plat for the area. We have all the wells

that are in the trend to Buffalo Yates Field, and I would kind of narrow your attention down to the yellow area which is the Bondurant lease that we operate. One map has the cumulative production numbers in oil, gas, and water, in green, red, and blue. And the map with the blue arrow on it has the current rate production in oil in barrels per day, gas in MCF per day and water in MCF per day in the same color sequence.

Q. And what is Exhibit 10?

A. Exhibit 10 is the historical plot of production for the Cimarex operated wells in the Yates Formation for this portion of Buffalo Field. The field first came on line in -- in this area in 4 of 86 with the Number 4 Bondurant Well. A number of additional drillings occurred at the end of 91, in early 92. There is the Number 5, Number 7, Number 8 and Number 9 Wells, you see the production peaked up fairly high at that point to almost 10000 barrels a month. The additional development activity occurred in 94 with the drilling of the Number 10 and Number 11 Well. And then since that point, there hasn't really been significant activity except for some pluggings that have occurred on the Number 5 and Number 3 Well for uneconomic production.

Q. So the reservoir at this point, especially

on the Bondurant lease, is severely depleted, is it not?

A. Yes, almost every well is less than a couple of barrels a day.

Q. How does Cimarex plan to develop this project area?

A. We plan to use the Bondurant Number 10 Well as the injector. It's in the middle of all of our current production, so it isolates that well from everywhere else going to complete the gross Yates interval that Mr. Examiner mentioned to John earlier in the porosity intervals, and then establish injection by pulling production equipment that is there and going in with plastic coated tubing in a lockset packer.

Q. And you are requesting proposal to inject into the entire Yates interval although maybe the lower zone might be too wet?

A. Correct. And most of the offsetting wells are completed in almost every one of those intervals, so we want to be able to push oil to any interval that's open.

Q. And was this project proposed as a method of extending the life of the reservoir?

A. Yes.

Q. What is the drive mechanism of the pool?

A. Solution gas.

Q. And how many -- initially there will just be the one injection well?

A. Yes.

Q. And how many producers, initially?

A. Five producers.

Q. In the event that there could be additional injectors, do you request that the order contain approval for allowing administrative approval of additional injectors?

A. Yes, pending the results of what we see in Number 10 Well, we may want to cover the seven well, also, but we might want to wait and see what kind of results we get.

Q. Have you looked at how many additional barrels of oil you anticipate recovering from this project?

A. Conservatively, I'm estimating about 128,000.

Q. How did you calculate those reserves? And I will refer you to your Exhibits 11, 12 and 13 together.

A. For this field we used offset analog fields for calculating increased recovery. Exhibit 11 shows where our existing Buffalo Field is in the red

circle and the blue circle around it. The two analog fields that I looked at were the Hackberry North Field which is about 12 miles to the west, and the Teas West Field which is about six miles to the south.

If you look at Exhibit 12, that is a production define curve analogy on the North Hackberry Unit, and because a lot of this production in these older fields occurred prior to 1970, I didn't have that production information, but the waterflood was started in 1970, so the bottom forecast line on there is assumed at 10 percent decline, and at that decline rate, the ultimate recovery would be 1.4 million barrels, approximately, on a primary basis.

The production that's on this curve would be indicative of the secondary recovery, and forecasting that recovery out, we would have a 2.2 million barrel or 2.3 million barrel secondary recovery ultimate. So subtracting the two from each other comes up with your remaining or your secondary increase in that primary -- secondary primary ratio in this field would be point five million, approximately.

So then we used the same approach on the Teas West Unit which is a little bit newer flood which flood was not initiated -- that's Exhibit Number 13 -- that flood was initiated in 2003. We have a primary

recovery forecast of 1.14 million barrels, a secondary recovery forecast of 2.7 million barrels, and that primary to secondary ratio is about point 5, so I average the two, and it's point 55 ratio for our recovery, which is probably somewhat conservative to some other fields in the area, but we wanted to be conservative on our first pass.

Q. Mr. Fisco touched on this, but do you anticipate any adverse effects on the offsetting leases since you are just flooding your own lease?

A. No. I wouldn't expect adverse effects. In fact, I mean, if we don't keep our wells pumped down on each side of our flood, we could actually help the offset operators.

Q. And I think you touched on this, but what additional facilities must be installed for the project?

A. We will need to put in a waterflood plant and then some minimal piping from the plant to our one injection well. Estimated cost of the facilities will be about $580,000. And the total project is going to be about $730,000.

Q. And do you anticipate the project to be economic?

A. Yes, we do.

Q. And what was the estimated value of the incremental production you anticipate?

A. Using current board prices we are coming up with about $4 million before tax value on 10 percent discount rate.

Q. And what is Exhibit 14?

A. Exhibit 14 shows the forecast that we used to come up with the economics that we just mentioned where we have about a three-year time period to reach a peak rate of 3500 barrels a month type of rate which is conservatively less than the peak production for the field.

Q. And is the project area so depleted that it's prudent to apply an enhanced recovery program at this time?

A. Yes.

Q. In your opinion, is this project technically and economically feasible?

A. Yes.

Q. And will it recover substantially more hydrocarbons than would be would be recovered without the project?

A. Yes.

Q. As a result, will it benefit the working and royalty interest owners on the lease?

A. Yes.

Q. Because of the additional estimated production, in your opinion, do the wells in the project area qualify for the recovered oil tax rate?

A. Yes.

Q. Let's move on to the injection application, Exhibit 15, Mr. Wilcox. Now, this application was prepared by Kay Havenor who was a contractor for Cimarex?

A. Correct. Yes.

Q. And have you reviewed the data in this application?

A. Yes.

Q. And do you concur with the data?

A. Yes.

Q. Let's move on to Page 3 of the C-108, and we can discuss a little bit about the initial injection well.

A. As we mentioned earlier, the Bondurant Number 10 is the one we want to convert to injection. The injection interval down below is mentioned as 3362 to 3650 which covers essentially the entire stratigraphic unit. We have only one stratigraphic unit perforated in the well right now, so we would go in and perforate all the other intervals that have

porosity, substantial porosity to inject into. And then to monitor the offsets, we could end up perforating offset producers as well to get the full benefit from -- in fact, I think we will.

Q. How much do you anticipate what the injection volumes will be?

A. The application says 8,000 barrels a day. I went back and looked at some injection calculations. I think it will probably be more in the order of 1,000 to 2,000 barrels a day at the initial rate, so probably will stabilize at quite a bit less than that. I think we should start out at a low pressure of say 600 pounds, which is below the point 2 PSI per foot requirement, and let that injection stabilize for about a month, and then go in and run a step rate test and have that dictate the pressure we should use to keep the pressure.

Q. Let's move on to Page 8 of this C-105.

MR. BRUCE: Mr. Examiner, I haven't marked this as an exhibit that I'm just handing you, but it's a clearer print than -- I think the page was printed in Greek originally.

Q. Mr. Wilcox, does this contain data on all the wells in the area of review?

A. Yes.

Q. And besides the chart, there is a lot of data given below on the wells in the area of review. Is that correct?

A. Yes.

Q. And are all the wells in the area of review either properly plugged or abandoned or are they properly -- between zones?

A. Yes, they are.

Q. And the -- what will be the source of the injection water?

A. It will be Bone Springs produced wells.

Q. And is that water compatible with the formation water?

A. Yes, it is.

Q. Moving back to Page 14, does that indicate how the Bondurant Number 10 will be completed for injection?

A. Page 14?

Q. Yes.

A. That's the -- that's the producing diagram.

Q. Oh, the present status, and then 15 is the --

A. 15 is the proposed injection program, correct.

Q. And the following pages are sketched, wellbore sketches of plugged and abandoned wells?
A. Yes.
Q. Do you see any problem wells in this area?
A. No. They are all plugged appropriately.
Q. And again, the geologist touched on this, but do you know of any sources of fresh water in the immediate area of the injection well?
A. No, we did not find any.
Q. Were Exhibits 9 through 14 prepared by you or under your supervision?
A. Yes.
Q. And again, you have reviewed Exhibit 15 and concur with that exhibit, correct?
A. Yes.
Q. The C-108?
A. Yes.
Q. In your opinion, is the granting of this application in the interest of conservation and the prevention of waste?
A. Yes.
MR. BRUCE: And, Mr. Examiner, I move the admission of Exhibits 9 through 15.
EXAMINER JONES: Exhibits 9 through 15 will be admitted.

(Exhibits 9 through 15 admitted.)

EXAMINER JONES: I see an example of Yates production water in the --

WITNESS: Yes.

EXAMINER JONES: Page 11?

WITNESS: Right.

EXAMINER JONES: And as far as the Bone Spring water that's going in, it's real pretty fresh stuff, isn't it?

WITNESS: Yes. In fact, after we got that, we got some samples of our produced water out there and did some mix analysis with it, and it shows no scaling tendencies with the mixture of the two waters, which is what we are worried about.

EXAMINER JONES: Not a bunch of iron?

WITNESS: There is a little bit of iron in there, but I think it said it would only precipitate at less than a thousandth of a pound per I think thousand barrels of water.

EXAMINER JONES: Did you look at the logs on these zones in the lower part of the Yates to see if there is any residual oil that could be maybe not produced primarily but produced secondarily? You said you were going to perforate them or --

WITNESS: I didn't look at the logs as far as

calculating out residual oil saturations or anything like that, but I know we have some of the zones that are perforated in that lower interval already, so if while we are in there it's a minimal cost to go ahead and perforate additional intervals, and then we can do injection profiles and things afterwards to make sure that water is going into the zones we want it to go into.

EXAMINER JONES: Okay. Well, I didn't -- on your production report, it didn't show big volumes of water being recovered. So is that true, even if you perforate down below there, you don't move a lot of that water, or would you move a lot of water? That's the porosity --

WITNESS: You would move some water, and so that would be an ongoing surveillance project for the area that if we see, you know, that zone taking a lot of water, and it's going to our offsets, to just go in and squeeze that interval off.

EXAMINER JONES: The project area, would that be the whole lease?

WITNESS: Yes.

EXAMINER JONES: The whole lease?

WITNESS: I don't think the isopach, the zero line covers the whole lease, but the project area is

essentially --

EXAMINER JONES: Do you know the gravity of the oil?

WITNESS: 38 degrees.

EXAMINER JONES: As far as the current pressure and the initial pressure?

WITNESS: Initial pressure we were estimating about 1200 pounds. We didn't find any actual pressure build up information, but kind of taking some tests before stimulation, that's what we estimated. Right now we haven't done any current buildups, but we're pumping a low --

EXAMINER JONES: Pretty low?

WITNESS: So less than 200 pounds.

EXAMINER JONES: Okay. But the analogy waterfloods look okay, but does that also coincide with maybe a mobility ratio look at it --

WITNESS: Well, I did look at the mobility ratios on the other fields, but here the live well viscosity is point 85 and the dead oil viscosity is 2.7, so that's going to be a pretty good mobility ratio for water on that.

EXAMINER JONES: Okay. And the water that will be brought in, are they real close by?

WITNESS: We are drilling Bone Springs Well.

There are two Bone Springs Wells producing there already, and we have the other laterals that we are drilling out there and have drilled in the area already.

EXAMINER JONES: So this is going to be a plus for everything.

WITNESS: Right. I mean this project might not have justified drilling a water supply well on its own, but if we have a water supplying the area, then this is a benefit both ways.

EXAMINER JONES: And you chose to only -- choose one injection well in the middle of the lease rather than try to bound the lease -- I mean, have a -- you get an inverted pattern instead of a --

WITNESS: Correct. We wanted to make sure that we didn't adversely affect offset operators, so that's why we picked the middle lease. The previous owner of this lease had tried to go out and bring in all the operators in the entire field, and they couldn't get a resolution to it, so --

EXAMINER JONES: Okay. Well, if you see some response, then you might.

WITNESS: We could probably convince them better to join us.

EXAMINER JONES: At least this way you are

not robbing your own lease of production?

WITNESS: Correct.

EXAMINER JONES: David, do you have any questions?

EXAMINER BROOKS: No questions.

EXAMINER JONES: Thanks for coming up here. With that, is that all for your case?

MR. BRUCE: Yes, sir.

EXAMINER JONES: Take Case 14676 under advisement.

* * * * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. _____ heard by me on _____.

_____, Examiner
Oil Conservation Division

REPORTER'S CERTIFICATE

I, IRENE DELGADO, NM CCR 253, DO HEREBY CERTIFY that on June 23, 2011, I did, in stenographic shorthand transcribe the proceedings set forth herein, and that the foregoing pages are a true and correct transcription to the best of my ability.

I FURTHER CERTIFY that I am neither employed by nor related to nor contracted with (unless excepted by the rules) any of the parties or attorneys in this matter, and that I have no interest whatsoever in the final disposition of this matter.

Irene Delgado

IRENE DELGADO
New Mexico CCR 253
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