IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

APPLICATION OF BTA OIL PRODUCERS, LLC FOR AUTHORIZATION TO INJECT PRODUCED WATER INTO THE DELAWARE (UPPER BRUSHY CANYON) FORMATION UNDERLYING SE/4 OF SECTION 2, TOWNSHIP 20 SOUTH, RANGE 33 EAST, LEA COUNTY, NEW MEXICO.

CASE NO. 14973

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: RICHARD EZEANYIM, CHIEF EXAMINER
DAVID K. BROOKS, LEGAL EXAMINER
PHILLIP GOETZE, TECHNICAL EXAMINER

March 21, 2013

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, Richard Ezeanyim, Chief Examiner, David K. Brooks, Legal Examiner and Phillip Goetze, Technical Examiner, on Thursday, March 21, 2013, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Porter Hall, Room 102, Santa Fe, New Mexico.

REPORTED BY: Mary C. Hankins, CCR, RPR
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500 4th Street, Northwest, Suite 105
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APPEARANCES

FOR APPLICANT BTA OIL PRODUCERS, LLC:

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EXHIBITS OFFERED AND ADMITTED

(1:51 p.m.)

EXAMINER EZEANYIM: At this time, we'll go to the last case, and this is application of BTA Oil Producers, LLC for permission to inject produced water into the Delaware, Upper Brushy Canyon Formation, underlying the southeast quarter of Section 2, Township 20 South, Range 33 East, Lea County, New Mexico.

Call for appearances, please.

MR. RANKIN: Thank you, Mr. Examiner. Adam Rankin, Holland & Hart, for BTA Oil Producers. I have two witnesses today.

EXAMINER EZEANYIM: Any other appearances?

Okay. Would the witnesses stand up and state your names, please?

MS. HUGHES: Robin Hughes.

MR. MCQUIEN: Britton McQuien.

(Ms. Hughes and Mr. McQuien sworn.)

MR. RANKIN: Thank you, Mr. Examiner. I would call my first witness, Ms. Robin Hughes.

ROBIN HUGHES,

after having been previously sworn under oath, was questioned and testified as follows:

DIRECT EXAMINATION

BY MR. RANKIN:

Q. Good morning, Ms. Hughes. Please state your full name for the record.

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A. Robin Hughes.
Q. And by whom are you employed?
A. BTA Oil Producers, LLC.
Q. And where do you reside?
A. Midland, Texas.
Q. And what is your current position with BTA Oil?
A. Petroleum landman.
Q. And have you previously testified before the Oil Conservation Division?
A. Yes.
Q. And have your credentials as a petroleum landman been made a matter of record?
A. Yes.
Q. And are you familiar with the application filed in this case?
A. Yes.
Q. Have you prepared any exhibits for today's hearing?
A. Yes.
MR. RANKIN: Mr. Examiner, I like to tender Ms. Hughes as an expert in petroleum land matters.
EXAMINER EZEANYIM: Ms. Hughes is so qualified.
MR. RANKIN: Thank you, Mr. Examiner.
Q. (BY MR. RANKIN) Ms. Hughes, can you please

state briefly for the Examiner what it is BTA is seeking today?

A. Yes. We seek an authorization to inject water for pressure maintenance. This will be produced water -- produced lease water. The well currently is an SWD well, and we're making application to convert it to an injection well, again, for pressure maintenance and to change the injection interval to a shallower interval in the Delaware Formation at a depth of 6,618 feet to 6,648 feet; maximum surface pressure 1,220 psi; average of 500 barrels of water per day.

The well name -- the existing well, saltwater disposal well, is the BTA 8705 JV-P Gem Number 3. It's located 660 feet from the south line, 1,980 from the east line of Section 2, Township 20 South, Range 33 East, Lea County.

Again, the injection fluids will be water produced and generated from lease production, lease activities. And we're going to create it on a 640-acre project area in Section 2, which is our lease. It's a state lease covering all of Section 2.

Q. Thank you, Ms. Hughes.

And can you explain why BTA has brought this application to hearing?

A. My understanding is that the Division rules

require that application is to pressure maintenance --

Q. And is BTA Exhibit Number 1, in the exhibit packet, the C-108 that was filed for this application?

A. Yes.

Q. And if you would please turn to what's been marked as tab number 1, which is a gray tab on Exhibit Number 1, and tell us what the map shows.

A. Okay. That's just a plat from the county map showing an overview of a half-mile radius around the well itself and a two-mile radius, larger radius, showing all the wells and leases that are involved that touch it.

Q. And the parties that you identify for purposes of notice, are all those lease operators within the half-mile area of review --

A. Yes.

Q. -- indicated by the smaller circles; is that correct?

A. That's correct.

Q. And who are those operators that were noticed?

A. Three Rivers Operating Company, LLC; Nearburg Producing Company; Endurance Resources, LLC; and the surface owner, who is the State.

Q. So that was noticed with the State Land Office; is that correct?

A. That's correct.

Q. So turning to what's been marked as Exhibit Number 2, the white tab, is that a copy of the Affidavit of Publication indicating that BTA filed a C-108 application with the State?

A. Yes.

Q. And Exhibit Number 3, on the next page, is that a copy of the affidavit prepared by your attorney?

A. Yes.

Q. And on the following page of that exhibit is a copy of the notice letter that went out to all of the affected parties; is that correct?

A. That's correct.

Q. And on the subsequent page is a list of those parties --

A. Yes.

Q. -- and the certified mail receipts and green cards indicating they have received notice of today's hearing?

A. Yes. Correct.

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

A. Yes.

MR. RANKIN: Mr. Examiner, I would move to tender -- move to admit Exhibits through 3.

EXAMINER EZEANYIM: Exhibits 1 through 3 will be admitted.

(BTA Oil Producers Exhibit Numbers 1 through 3 were offered and admitted into evidence.)

MR. RANKIN: Thank you.

Mr. Examiner, I have nothing further of this witness.

EXAMINER EZEANYIM: Mr. Brooks?

EXAMINER BROOKS: No questions.

EXAMINER GOETZE: No questions.

EXAMINER EZEANYIM: This is AW794? That is the permit you have for this well, right?

MR. RANKIN: I am not sure of what permit number it's under.

EXAMINER EZEANYIM: Yeah, AW794, which is what I have here.

CROSS-EXAMINATION

BY EXAMINER EZEANYIM:

Q. The injection interval here is from 773 to 8,200. You want to plug back to what, to 6,018, in the Brushy Canyon?

A. Yes, sir, 6,000- --

Q. You are in the Brushy Canyon?

A. Yes, sir.

Q. It will still be the Brushy Canyon, right?

A. Yes, sir.

Q. So that brings -- you want -- this is a disposal well approved. So you really want to do it in this, or do you want to dispose of the salt water into that formation? I mean, do you want to just -- I know you say you need water. You want to dispose [sic], you know, into the Upper Brushy Canyon. Is that for saltwater disposal [sic] or pressure maintenance?

A. Well, we're actually expecting pressure-maintenance results.

Q. So it's really -- do you know if you applied for this administratively -- I didn't look at anything -- and we told you to go to hearing, or you decided to go to hearing?

MR. RANKIN: Mr. Examiner, I believe originally we didn't understand -- they originally applied for administrative approval, and Mr. Jones informed them that they needed to go to hearing for pressure-maintenance purposes.

EXAMINER EZEANYIM: Okay. So when you applied, did you indicate you wanted to do pressure maintenance?

MR. RANKIN: I believe our next witness can probably give you a better background on the history of

the application, our petroleum engineer.

EXAMINER EZEANYIM: Is that the person who prepared the Form C-108?

MR. RANKIN: Correct.

EXAMINER EZEANYIM: Nothing further.

THE WITNESS: Thank you.

MR. RANKIN: Thank you, Mr. Examiner.

Call my next witness, Mr. Britton McQuien.

BRITTON MCQUIEN,

after having been previously sworn under oath, was questioned and testified as follows:

DIRECT EXAMINATION

BY MR. RANKIN:

Q. Good afternoon, Mr. McQuien.

A. Good afternoon.

Q. Could you please state your full name, and spell your last name for the record?

A. Yes. My first name, Britton, B-R-I-T-T-O-N, and McQuien, M-C-Q-U-I-E-N.

Q. Thank you, Mr. McQuien.

By whom are you employed?

A. BTA Oil Producers, LLC.

Q. And where is it that you reside?

A. Midland, Texas.

Q. And what is your current position with BTA?

A. I'm the Permian exploration manager.

Q. And have you previously had the opportunity to testify before the Division?

A. Yes, I have.

Q. And have you had your credentials as an expert in petroleum engineering accepted and made a matter of record?

A. Yes, I have.

Q. And are you familiar with the application that was filed in this case?

A. Yes.

Q. And have you also prepared some exhibits for presentation at this hearing?

A. Yes.

MR. RANKIN: Mr. Examiner, I would tender Mr. McQuien as an expert in petroleum engineering.

EXAMINER EZEANYIM: Thank you, Mr. McQuien. Are you a petroleum engineer?

THE WITNESS: Yes, sir, I am.

EXAMINER EZEANYIM: You say you are a manager to --

THE WITNESS: I am still an engineer, and I also manage.

EXAMINER EZEANYIM: So qualified.

MR. RANKIN: Thank you, Mr. Examiner.

Q. (BY MR. RANKIN) Mr. McQuien, you've prepared the C-108 that was filed with this application; is that correct?

A. That's correct.

Q. That was marked as Exhibit Number 1; is that right?

A. That's correct.

Q. Now, does the C-108 application contain all of the information that the Division requires?

A. Yes.

Q. And this is an expansion of an existing project, or is this a new project?

A. No. This would be a new project.

Q. Now, this well has already been drilled and has been operating as a saltwater disposal well; is that correct?

A. That's correct.

Q. Can you please provide the Examiners a brief history of this well and its operation?

A. Yes. This well was originally drilled in the early 1990s to test the Morrow Formation. The Morrow was very marginally productive. The well was quickly recompleted into the Brushy Canyon -- not the Brushy Canyon -- I'm sorry -- the Bone Spring Formation, at which point it had produced for six or seven years from

the Bone Spring and depleted from that reservoir.

The well was then plugged back to test the lower part of the Brushy Canyon Formation. That interval was not productive, and the well at that point was converted to SWD to handle produced water from the other wells on the lease.

Q. And it's been injecting for approximately 15 years or so; is that correct?

A. That is correct.

Q. And it's been injecting into that same horizon the entire time it's been injecting; is that correct?

A. Yes, that is correct.

Q. Now, Mr. McQuien, is there also hydrocarbon production in the area?

A. Yes, there is.

Q. Would you please just review for the Examiners the nearby hydrocarbon production?

A. Yes. There are a number of shallow Yates fields that start about 32-, 3,300 feet. That was really what the original production in this area was. The Delaware Formation starts at about 5,500 feet, and it's produced all the way through the section, primarily from the upper portion of the Brushy Canyon.

The Bone Spring is productive in a lot of wells in this area. There's been some Wolfcamp

production, a little bit of Strawn. This has also been a very active Morrow-development area historically, and this is -- just touching on the Bone Spring, an area where there is lot of horizontal activity going on.

Q. So there is a fair amount of hydrocarbon production going on, as well any proposed injection interval, in this case; is that correct?

A. That's correct.

Q. So looking at what you've identified or marked as Exhibit Number 4, this is a bubble map showing production in the area of the offsetting wells around the proposed Gem Number 3 injection well; is that correct?

A. That is correct.

Q. Can you please review for the Examiners what this bubble map shows?

A. Yes. The Gem lease is Section 2. It is shown on this map in blue, the blue square. Of course, the oil wells are represented as green dots on this map. The gas wells --

EXAMINER EZEANYIM: Excuse me, Counselor. There is two double -- I mean, which one is which?

MR. RANKIN: Mr. Examiner, the white tab with the 4.

EXAMINER EZEANYIM: The white tabs are

what?

MR. RANKIN: Are the exhibit numbers.

EXAMINER EZEANYIM: The blue [sic] ones --

MR. RANKIN: The little green ones are just the tabs for identification purposes.

EXAMINER EZEANYIM: So what exhibit are you on now?

MR. RANKIN: On white tab 4.

EXAMINER EZEANYIM: Go ahead.

A. Okay. In review, the blue square is Section 2, which is BTA's lease. Obviously, the green dots represent producing oil wells. The red kind of star-looking shapes are gas wells in this area. The well that has an arrow pointing to the south -- or wells with arrows pointing to the southwest are injection wells. And then there's a color bubble map on the wells that have been completed in the upper portion of the Brushy Canyon Formation. These would be wells that would be considered the Teas Delaware Formation -- or field.

The scale on the bubbles are from zero to over 200,000. The purple are lower recovery wells. And as the colors get warmer, that represents more recovery up to the -- there is one well that is shown as pink, and that well has recovered in excess of 200,000 barrels

from this field.

CROSS-EXAMINATION

BY EXAMINER EZEANYIM:

Q. Please, let's stay on that Exhibit Number 4. And that blue color, that section, that is Section 2?

A. Yes, sir.

Q. Is that the lease?

A. That is the lease.

Q. Where is this injection well located?

A. Yes. That injection well is located on the -- on the south line of wells in that section. It would be the well farthest to the east, and it's represented -- that blue line will be showing cross section later; that line will pick up. But that well is the well on the south line of wells in Section 2 as the farthest east well.

Q. I'm trying to find it while you're here. Which one is the injection well?

MR. RANKIN: Mr. Examiner, I believe if you follow that blue line that connects the wells on that cross section, it's the last well on the bottom, right corner of that blue line.

EXAMINER EZEANYIM: Oh, okay. That one on the southeast quarter.

THE WITNESS: Yes.

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CONTINUED DIRECT EXAMINATION

BY MR. RANKIN:

Q. Mr. McQuien, turning to what's been marked as tab number two, which is the greenish tab on Exhibit Number 1 --

A. Yes.

Q. -- can you identify what this is? Is this the injection well data sheet for the well?

A. Yes, it is.

Q. Can you please review for the Examiners the data on this well?

A. Yes. We are showing the casing sizes that are in this wellbore and also the amount of cement used with the total depth shown; also the proposed perforation interval. And then on the second page of that, we are showing the type of completion we will have in this well and the tubing string that we plan to set in this well and where we plan to set the packer.

Q. Mr. McQuien, Exhibit Number 5 -- what is marked as Exhibit Number 5, which is the white tab, is this an updated slide -- sorry -- updated side [sic] number one for the injection well data sheet; is that correct?

A. That's correct.

Q. Can you explain what it is that's being updated on this page?

A. Yes. When we originally prepared this, we went through sequentially listing the casing sizes. Well, this well, actually, has two intermediate strings of casing. So we changed the injection well data set sheet to reflect that the -- that they are 13-and-three-eighths; the intermediate casing well is 9-and-five-eighths intermediate casing, and five-and-a-half inch production casing.

Q. And the information you updated on this Exhibit Number 5 was already contained in the wellbore schematic that was completed in C-108; is that correct?

A. That is correct.

Q. Thank you, Mr. McQuien.

Looking at tab number three, which is the wellbore schematic, can you please review for the Examiners what this Attachment B is?

EXAMINER EZEANYIM: Tab number what?

MR. RANKIN: Tab number 3, which is this greenish tab.

EXAMINER EZEANYIM: Okay.

A. Yes. This is a wellbore schematic showing the current completion and injection -- or disposal interval in this well. Things to note, you know, there are several zones that have been completed in this well. They have all been plugged with a cast-iron bridge plug,

with cement plugs sealing those off.

On all the casing strings, cement was circulated to surface, so we feel we have good wellbore integrity.

Q. (BY MR. RANKIN) And the following page is the proposed recompletion wellbore schematic; is that correct?

A. That is correct.

Q. Can you review for the Examiners what that depicts?

A. Yes. The primary difference from the wellbore schematic on the prior page is, we will be setting the bridge plug and cement plug to about 7,680 feet -- 7,680 feet in wellbore. That should isolate all the Lower Brushy Canyon perfs and perforate the Delaware section from 6,618 feet to 6,648 feet.

Q. Thank you, Mr. McQuien.

Does BTA propose any stimulation of the well?

A. Yes. Right now we are planning on cleaning the wellbore -- or the perforations with about 1,500 gallons of hydrochloric acid.

Q. Turning to the next tab on Exhibit Number 1, which is tab number four of the greenish tabs, can you review for the Examiners what this map shows?

A. Yes. This is a little more zoomed-in representation of the area of review. This is the --

EXAMINER EZEANYIM: Tab number four?

THE WITNESS: Yes, green tab number four.

EXAMINER EZEANYIM: And these are the area-of-review wells?

MR. RANKIN: I think, Mr. Examiner, there is one page prior to that. Prior to the table is the map.

EXAMINER EZEANYIM: Okay.

A. So, yes, this is a half-a-mile radius around our Gem Number 3 wellbore. This represents our area of review.

Q. (BY MR. RANKIN) This captures all of the wells within that area of review, and those wells have been identified for analysis?

A. That is correct.

Q. The next page, Mr. McQuien, is a tabulation of all the wells identified within that area of review; is that correct?

A. That is correct.

Q. And all these wells, do they all penetrate the proposed injection interval?

A. No. One of them does not.

Q. And that would be the State YS #1; is that

correct?

A. That is correct.

Q. And that is the only P&A'd well, or plugged and abandoned well, that is identified within the area of review; is that correct?

A. That is correct.

Q. Otherwise, all the rest of the wells are actively producing?

A. That is correct.

EXAMINER EZEANYIM: Which one is plugged and abandoned?

THE WITNESS: The last one on the list, the State YS #1.

EXAMINER EZEANYIM: The State YS is plugged and abandoned?

THE WITNESS: Yes, sir.

Q. (BY MR. RANKIN) And just to reiterate, Mr. McQuien, that plugged and abandoned well does not penetrate the injection wells?

A. That's correct.

Q. As indicated in the table there, it's only completed out to a depth of 3,562 feet; is that correct?

A. That is correct.

CROSS-EXAMINATION

BY EXAMINER EZEANYIM:

Q. The rest are producing oil?

A. Yes.

Q. Only one plugged and abandoned well? In a half-mile area of review, one well plugged and abandoned?

A. That's correct.

Q. Who owns the producing oil and gas?

A. Who owns them?

Q. Yeah. Do you know?

A. Yes. We actually own and operate five of the wellbores. The other one, the Smith Ranch Federal #2, we are showing Three Rivers as the operator there. And subsequent to our original, Concho had bought Three Rivers.

EXAMINER EZEANYIM: Okay.

CONTINUED DIRECT EXAMINATION

BY MR. RANKIN:

Q. Mr. McQuien, does the C-108 form also contain all the necessary geologic information that the Division requires?

A. Yes, it does.

Q. Mr. McQuien, having reviewed all these wells within that half-mile area of review, is it your opinion that water injected into Gem Number 3 within the

proposed injection interval will escape from the injection zone or cause any problems?

A. I do not believe that.

Q. Based on your review, have you identified any remedial work necessary to be done on the wells within the area of review?

A. No.

Q. Mr. McQuien, what injection volumes is BTA proposing to inject from the Gem Number 3?

A. We are proposing an average rate of approximately 500 barrels a day. That's roughly the current production from the existing producers out there, and then with a maximum rate of 1,500 barrels a day. That would, hopefully, if any additional wells are drilled or any completions are done that are higher water rates, they should -- we should have sufficient permitted level there.

Q. And, Mr. McQuien, the source of the injection water, as you indicated, is all dependent on the well lease activities?

A. That is correct.

Q. What is the formation of the produced water?

A. All the wells that are producing on this lease are either producing from the Delaware Formation or the Bone Spring Formation.

Q. Now, do you anticipate any compatibility issues between the produced injected water and the receiving formation water?

A. I do not.

Q. Turning to what's been marked as Exhibit Number 6, is this a water analysis taken on the -- in the Gem #10 well?

A. Yes.

Q. Which formation is that analysis done on?

A. That formation -- or that well produces only from the Bone Spring Formation.

Q. So this water will be Bone Spring water; is that correct?

A. That is correct.

Q. And turning to what's been marked as Exhibit Number 7, this is a water analysis report from the Gem #7?

A. That is correct.

Q. And what formation does the Gem #7 produce from?

A. It produces only from the Delaware Formation.

Q. Based on your analysis of this water report, you don't anticipate any compatibility issues?

A. I do not.

Q. Will the injection system be open or closed?

A. It will be closed.

Q. And what is the injection pressure that BTA is proposing or requesting from the Division?

A. We request a maximum injection pressure of 1,320 psi. That is based on a .2 psi per foot, which is the standard for the OCD. And our top perf, we estimate it -- we are going to -- the top perf will be at 6,618 feet, so that's how we arrived at the 1,320.

Q. And, Mr. McQuien, based on your injection volumes, do you anticipate an average injection pressure?

A. Yes.

Q. And that would be approximately?

A. After fill-up, we expect it to average maybe around 700 psi.

Q. And if BTA requires a higher injection pressure, will it justify prior pressure tests -- separate test?

A. Yes.

Q. And how will BTA monitor the well and the injection activities to ensure the integrity of the wellbore?

A. In this well, we will have a packer placed in there with tubing. The annular space will be filled with inert fluid that will not -- and it will be

inhibitive to corrosion. That way if we see any pressure on the annular space, we will know that there is an issue there.

Q. You will also have a pressure monitor gauge at the surface; is that correct?

A. That is correct.

Q. Now, Mr. McQuien, this is a pressure maintenance project request. Have you conducted an analysis to determine whether or not you believe there will be a positive response from these injection activities?

A. Yes.

Q. Will you please review for the Examiners what your analysis indicates?

A. Yes. On Exhibit Number 4 -- that was our Y tab that we were looking at earlier that was a bubble map -- you can see, you know, a fairly large area with some fairly significant production in the Teas Delaware field. All of these wells have now -- fall into what would be considered a stripper raid [phonetic] of less than 20 barrels per day, and the bottom-hole pressure is very low in this formation at this point.

This Delaware Sand, about the mid-'90s, was discovered, and it has been producing continually since then. So there has been a fairly long production

history to this.

Q. If you look at Exhibit Number 8, Mr. McQuien, this is a cross-section overview that you've prepared; is that right?

A. Yes. This is a map showing wells prepared cross section. This map shows the location of the wells that will be shown on cross section, and with A to A prime is the order for the wells.

Q. Turn to Exhibit Number 9. This is the actual cross section; is that right?

A. That is correct.

Q. Will you please review for the Examiners what the cross section shows?

A. Yes. There is a top shown on here. It says "Willow Lake Price Sand." And that's an internal name for what we call this sand. What it shows, in the four wells, the sand is very continuous. It can be correlated easily across all of these wells.

The well, the Gem #10, which is the well farthest on the left side of the cross section, has not been completed yet. That's actually the well where we obtained our Bone Spring water sample.

The next well, the Gem #5, you can see some red or pink boxes on there. Those represent the perforations in this sand and where we're producing

from.

The well on the far right, that's our Gem #3 wellbore. That's the well we intend to convert to water injection. The sand is very correlative over there. One key to this cross section -- you can see that the Gem #3 is much lower than the other wells on the cross section. And by our analysis -- and what's not shown here but it is on the resistivity logs, you see low resistivity in that wellbore. We believe that that well is below the oil-water contact, so we don't think -- we don't think there is an opportunity to recomplete and recover any oil from this wellbore in the Delaware Formation. However, with the sand present in there, we think it will be a good well to put water into to repressurize the reservoir.

Q. Next exhibit, Mr. McQuien, Exhibit Number 10, can you please review for the Examiners what this map shows?

A. Yes. Once again, the blue is our lease position there. This is a structure map. The black number to the right of the well symbols represents the well -- that's the well number. The red number below the well symbol is the depth at which we encountered either this Upper Brushy Canyon sand --

EXAMINER EZEANYIM: Which exhibit are you

looking at now?

THE WITNESS: I'm sorry, what?

EXAMINER EZEANYIM: Which exhibit are you on now?

THE WITNESS: We're on Exhibit 10.

EXAMINER EZEANYIM: Okay.

A. And the red number is the structurally -- or the subsea depth of where we either encountered the sand or the correlative spot where the sand should have been if it wasn't present.

And then this is a structural contour map of the contour interval of 25 feet across -- over the lease position and a little halo around the lease position. One thing to note is, you see, generally, a west-to-east dip. You can see that the #3 wellbore is structurally much lower than all the other wells on the lease.

Q. (BY MR. RANKIN) And Exhibit Number 11, Mr. McQuien, is another contour map. Can you please review for the Examiners what this map shows?

A. Yes. This is a net pay isopach on this Upper Brushy Canyon Sand, that I mentioned, on the cross section, called Willow Lake Price Sand.

Once again, the well number is the black number next to the well symbol. The red number below

the well symbol is the net feet of sand found in well. That would be sand that has greater than 16-percent density porosity. And you can see, the sand covers a very large part of our lease position over here.

We expect the wells in the southeast -- or southwest quarter of the section, actually Wells Number 5 and 7, those were two -- if we look back at the bubble map, those would be two of the better producers on our lease. Those are the two wells we would expect to see the best response from, with maybe some smaller response in the Number 4 wellbore immediately west of the injection well. But as you can see from this map, it does not have quite the sand development and it is not recovering quite as much oil. But as you move back more to the west, you get much more reservoir development, and we anticipate seeing a better response over there.

Q. Mr. McQuien, based on -- just in summary, based on your review and analysis of the geology in the reservoir in this area, it's your opinion that injection into the Gem #3 well would be beneficial to a number of your wells in the offsetting lease; is that correct?

A. Yes.

Q. And, Mr. McQuien, you've looked at the production history and the depletion history of the reservoir in this area?

A. Yes.

Q. And based on your analysis, do you have an anticipation [sic] for how long it would take before BTA starts to see positive response from its wells?

A. Yes. We have withdrawn about 790,000 reservoir barrels from this Delaware unit on our lease, and then from the rest of the wells in the Teas fields, we've had about 2.2 million barrels. That would be reservoir barrels of oil and water withdrawn from the reservoir. So, you know, to replace our voidage and assuming a 500-barrel-a-day injection rate, it would take about four years to reach fill-up and repressurize the reservoir.

Q. Thank you, Mr. McQuien. Appreciate that.

Now, speaking about the fresh water in this area, have you identified any freshwater zones in the immediate vicinity?

A. Yes. The Ogallala is present in this area.

Q. And at what depth do you find the Ogallala?

A. It's 2- to 300 feet deep.

Q. And in your opinion, will those injections in the Gem #3 impair or put at risk any of the fresh water that you've identified?

A. No.

Q. Are there any freshwater wells that you were

able to identify within one mile of the proposed injection?

A. We found -- we reviewed the State Engineer's record, and there was a record of a well in Section 2. None of the surrounding sections had a record of a freshwater well. We haven't been able to locate the freshwater well, but there is a record of one there in Section 2.

Q. So BTA didn't have a freshwater well sample; is that correct?

A. That is correct. And that well is almost a mile away. The record shows that it's close to the north line. Our injection well is on the southern line of the -- close to the southern line of Section 2.

Q. Moving on, have you included all the geologic information required in the C-108?

A. Yes, sir.

Q. And is that information contained at green tab number 5?

A. Yes.

Q. Can you please briefly review for the Examiners -- just give a short overview of the geology in the area and stratigraphy you encountered?

A. Yes. You know, as you had just said, the freshwater zones are primarily the Ogallala. It occurs

shallowly.

The Rustler is present in here, which contains some very thick evaporite formations, couple thousand feet. That really separates the oil and gas reservoirs and provides a terrific seal for the oil and gas reservoirs to prevent any fluid migration up into freshwater zones. You know, we're sitting kind of in a transition zone, where you would have your northern shelf-type rocks and formations into the Delaware Basin, so you kind of get a mix of those.

You have the Yates Formation, which is more associated with the -- with the northern shelf, and it's a series of dolomites and sands and evaporites, which is the evaporites in the Yates Formation also run very good seals.

The Seven Rivers, which is the Capitan Reef, is present over this lease. It's a very thick dolomite reef, and then below the Seven Rivers, you get into the Delaware Mountain Group, which is primarily sand and shale sequences. This is one of the major oil and gas producing reservoirs. There are a few carbonates mixed in, and the primary production in this immediate area is from that sand. And in our injection well, it appears at 6,618 feet.

Below that, you have the Bone Spring

Formation, which 3,000 feet thick of sand, shales and carbonates, and a lot of production from that formation. It's also where a lot of horizontal activity is going on.

There is some limited Wolfcamp. Wolfcamp is primarily a shale in this area, but occasionally you get -- a little bit of carbonate porosity develops in it, and that can be productive. A Strawn is present in the area, which is primarily a carbonate reef. When it develops porosity, it can make good reservoir rock.

And then the Morrow Formation, which is primarily shales, with sand formations, and is one of the major gas-producing formations out here.

Q. Mr. McQuien, based on your review and analysis of the geology in the area, have you identified any evidence of open faults or hydrologic connections between the injection well and any sources of fresh water?

A. I have not.

Q. And in your opinion, will the granting of this application be in the best interest of the prevention of waste and the protection of correlative rights?

A. Yes.

Q. And in your opinion, will the proposed injection into the Gem #3 result in a positive

production response in some of BTA's offsetting lease wells?

A. Yes.

Q. And in your opinion, will that positive response reduce waste overall?

A. Yes.

Q. Mr. McQuien, were Exhibits 4 through 11 prepared by you or under your direct supervision?

A. Yes.

MR. RANKIN: Mr. Examiner, I would move to admit into evidence Exhibits 4 through 11.

EXAMINER EZEANYIM: Exhibits 4 through 11 will be admitted.

(BTA Oil Producers Exhibit Numbers 4 through 11 were offered and admitted into evidence.)

MR. RANKIN: Mr. Examiner, no further questions of the witness, and I pass the witness.

EXAMINER EZEANYIM: Thank you very much.

Mr. Brooks?

EXAMINER BROOKS: No questions.

EXAMINER EZEANYIM: Mr. Goetze?

CROSS-EXAMINATION

BY EXAMINER GOETZE:

Q. I have a couple of questions. On your Form C-108, I have note here that the locations are in a potash area. Do we know if they're under the secretarial order, the R-111, or where does it stand?

A. Would you repeat your question?

Q. Are we under the R-111, the secretarial order?

A. I'm not familiar with that order.

EXAMINER EZEANYIM: I think the question he's asking is whether this is close to the potash area.

A. It is close to the potash area. This area has been determined as -- I think it was potash not present. That's why we were able to drill on it, but it is -- actually, if you look back on Exhibit Number 10, this will help orient you. In Section 3, you'll notice a lot of directional wells drilled on there. Those wells were drilled directionally because of potash. So that kind of shows you where the potash issues are in this area.

Q. (BY EXAMINER GOETZE) Another question: On your green tab four, you have a well that's commingling for both the Delaware and Bone Spring?

A. Yes. Some of these wells, when they got to very marginal rates -- they were recompleted from the Bone Spring to the Delaware, and then once the Delaware got to a marginal rate, it was combined.

Q. So is there any -- is it open hole or --
A. No. It's two sets of perforations.
Q. But there is no communication between what's being produced from the Delaware and what's being produced from the Bone Spring?
A. Are you thinking -- like is one possibly leaking from the other?
Q. Yeah.
A. No, I don't think so. All the wells are on a rod pump, and they're being pumped down below -- or below the perforation level for the Bone Spring.
Q. No other questions. Thank you.
EXAMINER EZEANYIM: Thank you.
CROSS-EXAMINATION
BY EXAMINER EZEANYÍM:
Q. Let's start with the well construction. The well construction strings circulated to the -- right?
A. Yes.
Q. And then the fresh water is at 300 feet?
A. I'm sorry, what?
Q. You know, the fresh water is about 300 feet in depth?
A. Yes, sir.
Q. And you are -- the surface casing -- do you know where the surface casing --

A. Let's see. That was --

MR. RANKIN: Tab three.

A. -- tab three.

Q. (BY EXAMINER EZEANYIM) On the green?

A. Yes, sir.

Q. 300 feet?

A. Yes, sir. So we should have three strings outside of our production casing protecting fresh water.

Q. And as you testified, there are no faults?

A. No, there are no faults.

Q. I thought I'd get that out of the way.

What is the current bottom-hole pressure?

A. The current bottom-hole pressure -- we have not measured it. All the wells are on rod pump, and they are actually -- they are not pumping at 100 percent, so the wells are --

Q. Even when the pump -- 50 barrels a day?

A. The best well is making about 20 barrels a day. The rest of them are ten to two or three.

Q. I can't think of what else.

Are you going to inject this well at that rate, of 1,320 psi? You are going to inject -- okay. You are asking for much more than 300 psi, but the average is 700.

A. Yes. And really I believe it's going to --

given the voidage initially, it's going to take water on vacuum until we hit fill-up, and then it will start to pressure up a little bit.

Q. When you are talking about fill-up, you say it's going to take four years? Did you do a calculation based on 500-barrels-a-day injection, average of 500?

A. Yes.

Q. And it will take about four years to do that?

A. Yes, sir.

Q. I'm going to ask you about when you can begin to see a response. When do you expect to get a response?

A. We had a similar project we did in Eddy County, and really we didn't see a whole a lot of response until we reached the fill-up point; but it was only fill-up for the couple of wells producing on the lease. We didn't have to fill up, you know, all the offsetting wells that we didn't operate. It was, you know, very close to the time that we replaced the voidage from our wells.

Q. After that fill-up, are you --

A. I think we'll see a response very quickly, within --

Q. What do you expect?

A. Within a month. Actually, we saw it -- yeah.

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Within a month of achieving fill-up. In the Eddy County project, we saw a response on the other project. So I would say, in this case, within a month of achieving fill-up, we will see a response.

Q. Okay. After that fill-up, are you going to see a response? It means that the well is near the bottom. Let's say you didn't see a response. What happens at that point? See, it could -- it could go either way.

A. Yeah. And the other part, you know, this is -- the well will provide a service, in that we will no longer have to truck water to an SWD for our other producing wells on the lease.

Q. That's why -- you know, it's kind of a dual function. That's okay. That's fine. That's fine.

A. Well, I think -- you know, we've got to do something with the water. I think -- you know, this is a producing zone that would be a good place to store water, and I think it could provide us some valuable upside, too, for the injection.

Q. But you see where I'm coming from?

A. Yes, I think I do.

Q. What is your name, again?

A. Britton McQuien.

Q. McQuien. Okay.

Now, are you going to have a problem if I

put a condition that you should wait and see which way it goes? If you have a response, that's good. If you don't have a response, we can, you know, attach it and then do something else, right? We can have you monitoring it, but then that would -- you know, reach fill-up -- production or reach fill-up and my production went from 20 to 5.

A. Generally, your question is: If we end up killing all of our producing wells --

Q. Yes.

A. -- you know, should there be some mechanism to shut the project off?

Q. Oh, yeah. Of course, we are going to have look at that, but we need some information. We, as the bureau, the OCD, need some information of what the project is doing.

A. Right. So what would you propose?

Q. I, you know, propose that you do maybe -- I don't know -- when you get the fill-up, you start reporting to us what the project is doing. Maybe in terms of production and -- I mean, I require it in most cases. I don't think it's going to be a big problem.

A. No, I don't think that would be an issue.

Q. But that's not the C-115 [sic]. I'm not talking about that. I'm talking about what I need to

see to make sure there are no production being -- no wasting productions.

A. Basically, you need a lease curve of the these Delaware wells, you know, the oil production over -- in three or five years, you need to be able look at that curve and make sure that that --

Q. Yeah.

A. Okay.

Q. I mean, it's for everybody's benefit, right?

A. Right.

Q. Okay. The plugged and abandoned well, I've been looking for it on the Form C-108. Is it included there? The plugged and abandoned well, it should be included in there, of course. I don't see it.

MR. RANKIN: Mr. Examiner, it does not penetrate the injection interval.

EXAMINER EZEANYIM: Okay.

MR. RANKIN: So the wellbore schematic was not included, because it does not penetrate. However, if you are interested, we have --

EXAMINER EZEANYIM: No.

MR. RANKIN: We did look to see if we could find --

EXAMINER EZEANYIM: No, no. I don't need it. Okay. Let me look at that now.

MR. RANKIN: We do have the Sunday [sic] notices on that well, if you're interested in seeing them.

EXAMINER EZEANYIM: Do you have the diagram?

MR. RANKIN: There is no diagram that we could find in the public records, but we do have the information on the well.

EXAMINER EZEANYIM: On this plugged and abandoned well?

MR. RANKIN: Yes.

EXAMINER EZEANYIM: Yeah, I can see that.

MR. RANKIN: Would you like me to mark it as Exhibit Number 12?

Q. (BY EXAMINER EZEANYIM) Okay. Now, the lease [sic] water is going to be injecting here, right?

A. Yes.

Q. And this water come from what formation, what zones?

A. Bone Spring and Delaware.

Q. And as you testified in the hearing today, there are no issues -- compatibility issues?

A. No.

Q. You'll be injecting into the Upper Brushy Canyon, right?

A. I'm sorry?

Q. You'll be injecting this water into the Upper Brushy Canyon?

A. Yeah. We've been injecting into the Lower Brushy for a long time.

MR. RANKIN: Mr. Examiner, I just distributed what I've marked as Exhibit Number 12.

CONTINUED DIRECT EXAMINATION

BY MR. RANKIN:

Q. Mr. McQuien, please indicate for the Examiners what Exhibit Number 12 is.

A. Yes. Exhibit Number 12 is a sundry [sic] notice, plugged and abandoned report of the State YS #1, and it shows where the cement -- where the seven-inch casing was cut during the plugging and where the cement plugs were set during the plugging operation.

Q. And this is all the information that you were able to find on that well; is that correct?

A. That's correct.

And then, also, the second page is the original C-105. This was the completion report, and it shows that the well was a dry hole. And there is an inclination report attached; also the original drilling plat and a drilling narrative, the last page.

MR. RANKIN: Mr. Examiner, move to admit

Exhibit Number 12 into the record as well.

EXAMINER EZEANYIM: Exhibit Number 12 is admitted.

(BTA Oil Producers Exhibit Number 12 was offered and admitted into evidence.)

EXAMINER EZEANYIM: Anything further?

MR. RANKIN: Nothing further, Mr. Examiner.

EXAMINER EZEANYIM: At this point, Case Number 14973 will be taken under advisement.

This concludes the hearings today. Thank you very much.

(Case Number 14973 concludes, 2:47 p.m.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 14973 heard by me on 3/21/13

, Examiner
Oil Conservation Division

STATE OF NEW MEXICO

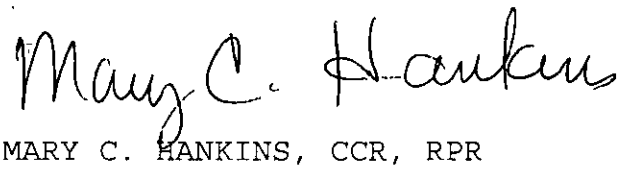
COUNTY OF BERNALILLO

CERTIFICATE OF COURT REPORTER

I, MARY C. HANKINS, New Mexico Certified Court Reporter No. 20, and Registered Professional Reporter, do hereby certify that I reported the foregoing proceedings in stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings that were reduced to printed form by me to the best of my ability.

I FURTHER CERTIFY that the Reporter's Record of the proceedings truly and accurately reflects the exhibits, if any, offered by the respective parties.

I FURTHER CERTIFY that I am neither employed by nor related to any of the parties or attorneys in this case and that I have no interest in the final disposition of this case.



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