Transcript

October 22, 2025, 7:46PM

DISCLAIMER: This transcript was auto-generated with the assistance of Microsoft AI technology and may contain errors, omissions, or not reflect the original audio's nuances. Its intended purpose is to provide general information only. The official record is the video recording of the hearing, which is posted to the **OCD's** YouTube channel, which can be viewed here: OCD Pecos Hall - YouTube

SS **Shaheen, Sharon** 4:49

I'm just going to say if we need an extra minute, if you, if you just go down.

To the end of the hall, the corner room, the corner office, right corner.

CE **Chakalian, Gregory, EMNRD** 9:29

Maria, do we have everyone here?

TE **Tschantz, Freya, EMNRD** 9:33

I believe so.

CE **Chakalian, Gregory, EMNRD** 9:37

OK.

Are the parties ready to begin?

SS **Shaheen, Sharon** 9:42

I am.

CE **Chakalian, Gregory, EMNRD** 9:44

OK, perfect. Excellent.

Let me call the cases to order, Freya.

Do we have a recording going?

TE **Tschantz, Freya, EMNRD** 9:53

We do.

CE **Chakalian, Gregory, EMNRD** 9:54

All right, fantastic. Thank you.
Well, welcome everyone.
It's Wednesday, October 22nd at 2:00 PM.
We're having a virtual special hearing for case numbers, 255-414-2254, 626-364-6566.
Entries of appearance please.

SS **Shaheen, Sharon** 10:16
Sharon Shaheen, on behalf of Tumblr operating partners.

CE **Chakalian, Gregory, EMNRD** 10:19
Thank you.

10:20
Good afternoon Dana Hardy on behalf of Marathon Oil Permian.

CE **Chakalian, Gregory, EMNRD** 10:24
Thank you. And with us, we have technical reviewer Dean McClure. Welcome.
Do we have any witnesses that the parties are going to call?

10:35
Yes Mister Patrick is here in the room and he's available.

CE **Chakalian, Gregory, EMNRD** 10:40
Perfect. He's with you in the room.

10:43
He is yes.

CE **Chakalian, Gregory, EMNRD** 10:43
Oh, OK.
Very good.
And Miss Shaheen, do you have a witness that you want me to swear in now?

Shaheen, Sharon 10:50
Rebuttal witness. Depending on Mr. Patrick's testimony.

Chakalian, Gregory, EMNRD 10:54
OK. Is that is that potential witness with us now?

Shaheen, Sharon 10:59
Yes, yes.

Chakalian, Gregory, EMNRD 10:59
Why don't we get them both sworn in at the same time?

Shaheen, Sharon 11:02
All right.
And just come on over.

Chakalian, Gregory, EMNRD 11:05
Oh, good, perfect.
M's Hardy can you adjust your can?
M's Hardy can you adjust your camera so I can see?

11:15
I think if Mister Patrick speaks it should go to him.

Chakalian, Gregory, EMNRD 11:17
Her.

11:18
Yeah I see let's see.

Chakalian, Gregory, EMNRD 11:19
Got it. OK.

11:20
Does it show up now?

Chakalian, Gregory, EMNRD 11:22
No.

11:25
Let's see.
Technology.
I can just turn my camera on here.

Chakalian, Gregory, EMNRD 11:32
There you go. There you go.

11:33
Try.

Chakalian, Gregory, EMNRD 11:33
OK, Mr. Hardy and and and is it, Mr. Patrick and Mr. Hardy?

Shaheen, Sharon 11:40
Sorry, I stepped in. It's Mr. Collins.

Chakalian, Gregory, EMNRD 11:44
No, Mr. Collins.
Very good, Mr. Collins and Mr. Patrick, would you please raise your right hands?
Do you swear or affirm under penalty of perjury that the testimony you're about to give? And in your case you might give is the truth, the whole truth, and nothing but the truth?

Shaheen, Sharon 12:00
I do.

12:01

I do.

I do.

Chakalian, Gregory, EMNRD 12:01

OK.

Very good.

Let's get your names and spell them out. Mr. Patrick, you first.

12:07

Tyler Patrick Tyler.

Patrick.

Chakalian, Gregory, EMNRD 12:12

And very good. And go ahead, Sir.

Shaheen, Sharon 12:16

Dylan Collins, DYLANCOL LINS.

Chakalian, Gregory, EMNRD 12:22

Alright, perfect, Mr. Collins.

You can get back off screen now and and if we get to you, then you're still Underoath. Mr. Patrick, before we go through a bunch of other stuff, let me get something from you up front.

Have you been qualified as an expert before this division?

12:40

Yes Sir in geology.

Chakalian, Gregory, EMNRD 12:41

Angiology perfect. Is there a subspecialty or is it just the overarching geology?

12:48

I believe I was qualified in geology the overarching.

Chakalian, Gregory, EMNRD 12:52

Oh, very good.
OK, M's Hardy. Can you come back?

12:59
Yes I should be here.
We have a camera that's switching.
Should switch when one of us speaks and it's there there I am OK?

CE **Chakalian, Gregory, EMNRD** 13:07
There you go. All right. OK.

13:09
This is the first time we've used this so.
Hopefully it works.

CE **Chakalian, Gregory, EMNRD** 13:13
Let me let me recap why we're here and where we are and if that's wrong, please parties. Correct me.
We conducted a contested hearing.
I believe it was in September.
I don't remember the date.
That's OK about the 18th or so I think of September and at that time, the parties were.
Required to submit.
Additional exhibits by the technical examiner.
Let me just silence this here.
OK.
Now michehene your Tumblr emails were you asked to supply those by Mr. McClure.

SS **Shaheen, Sharon** 14:04
Yes.

CE **Chakalian, Gregory, EMNRD** 14:05
OK.
Very good.

And you you first supplied them as 500 pages.
Then you cut them way down to 100 pages. That's correct, right?

Shaheen, Sharon 14:14
That's correct.

Chakalian, Gregory, EMNRD 14:15
Very good.
I see two filings on 10/10 in our imaging system.
Freya. What? What are those?
They both say Tumblr operating.

Tschantz, Freya, EMNRD 14:31
I need to pull them up one second.

Chakalian, Gregory, EMNRD 14:34
Sure.

Tschantz, Freya, EMNRD 14:36
I will say I did not remove duplicate.

Chakalian, Gregory, EMNRD 14:39
That must be what it is.
OK.
Will you do that fryz?

Tschantz, Freya, EMNRD 14:42
Exhibits yes.

Chakalian, Gregory, EMNRD 14:42
Cuz I think I'm looking at some duplic.

Tschantz, Freya, EMNRD 14:43
Well, I was waiting for today.

Chakalian, Gregory, EMNRD 14:46
Ate right. Because one is four times the size of the other.
That must be it.
OK, OK. Miss Hardy, have you had a chance to review the 100 page e-mail document that micheene supplied?

15:02
Yes.

Chakalian, Gregory, EMNRD 15:03
Good.
And you are do not have an objection to that, is that correct?

15:11
I do not object.
I note that I think about half the emails were prior to the acquisition of marathon by conoco Phillips.
So I'm not sure how relevant they are.
But as long as that goes to wait I don't object.

Chakalian, Gregory, EMNRD 15:34
OK. And and micheene, do you want to clear up why they're there?

Shaheen, Sharon 15:39
Well, I think they're important because they've been communicating with marathon.
Since well before the merger and it reflects all of the communications relating to this specific development.

Chakalian, Gregory, EMNRD 15:52
OK.
All right, that answers that question. Thank you.
So it sounds like they're relevant, Miss Hardy.
Unless you want to make an argument on why they're not relevant, we're going to say that they're relevant based on what Michelin's told us and michihen.

These are representative of the of the of the nature of the communications between your client and marathon.
That's why you supplied them.
And and.
And you're supplying them to show.
To show bad faith, is that correct?

SS **Shaheen, Sharon** 16:27
Yes, I'm. I'm supplying them because we refer to them in our chronologies, and they were discussed during the hearing, and Mr. McClure asked for the underlying emails.

CE **Chakalian, Gregory, EMNRD** 16:39
OK, Mr. McClure, do you have any question about what I've brought up so far?

ME **McClure, Dean, EMNRD** 16:47
Mr. Herring, examiner, I do not have any questions about what was brought up so far.

CE **Chakalian, Gregory, EMNRD** 16:50
Alright, perfect.
And then and then Miss Hardy supplied some exhibits and.
And they were objected to.
So we had a hearing last week on the on these exhibits. We learned from Mr. McClure that yes, in fact, this is what he wanted.
It's not more than what he wanted.
It's not.
It's not Miss Hardy trying to get in additional evidence under the radar.
Are, so to speak.
But we did permit.
Cross examination so.
Is that what the parties is that brings us to today?
Does the do the parties agree with that so far?

17:35
Yes.

Chakalian, Gregory, EMNRD 17:37
Machine.

Shaheen, Sharon 17:38
Yes.

Chakalian, Gregory, EMNRD 17:39
All right, very good.
All right, so Miss Shaheen.
The grounds for the objection originally, have they changed?
Do you still object to them now that you have, you will have an opportunity to cross examine on them.

Shaheen, Sharon 17:55
We will likely move again.

Chakalian, Gregory, EMNRD 17:58
OK.

Shaheen, Sharon 17:58
Renew our motion to to strike, or at least redact with with some substance.

Chakalian, Gregory, EMNRD 18:00
OK.
OK.
OK, based on the expertise of the witness.

Shaheen, Sharon 18:08
Based on the expertise of the witness and the scope of his testimony.

Chakalian, Gregory, EMNRD 18:09
OK. All right.
That's fine, that's fine.
We'll we'll deal with that in just a moment.

M's Hardy, do you want to briefly.
Remind us, I think you've told us last time, but briefly, remind us why you submitted these exhibits based on Mr. Mcclure's ask.

18:31
Yes 'cause Mister McClure asked for the geological parameters that were used to determine certain intervals in the bone spring.
Were riskier than others and that that is why conoco Phelps does not developing those intervals at this time and?
Our geologist Tyler Patrick prepared these exhibits.
They were part of the geological parameters that he used and so that's why we submitted that.

CE **Chakalian, Gregory, EMNRD** 19:03
Mr. McClure, does that accurately depict what happened?

ME **McClure, Dean, EMNRD** 19:10
I believe so, yes.

CE **Chakalian, Gregory, EMNRD** 19:11
Perfect. OK. All right. So I think miss, Miss Hardy, is it time to call your witness?

19:18
Yes it is.

CE **Chakalian, Gregory, EMNRD** 19:18
Alright, very good.
Why don't you call him and you go through whatever direct examination you want.
I'm gonna give you an opportunity to lay whatever foundation you want.
If you want this division to recognize this expert in any other field, we'll need to go through that.
But right now, he's been recognized as a as a geologist.

19:41

OK.
Thank you and I'm gonna share my screen.

Chakalian, Gregory, EMNRD 19:44
Good.

19:45
So it can go through these exhibits.
OK can you see my screen.

Chakalian, Gregory, EMNRD 19:59
Yes.

20:01
OK and I can't see the teams So what.
I'm sharing my screen for some reason.
But Mister Patrick.
Can you see my screen?
I can see your screen.
Yes ma'am.
OK and.
Is this your supplemental exhibit B 5?
Yes.
And did you prepare this exhibit.
Yes I did.
And why did you prepare it.
At the request of the technical examiner he wanted to know the variability in some of the geologic intervals here and why we did not propose wells in some intervals that Tumblr did propose in.
And were these well logs that you've shown here.
What you consider to be the geological parameters that you use to evaluate the zones?
Yes these were the parameters I used to specifically identify the geologically similar targeting and offset PDP wells.
OK and can.

You describe what's shown on the slide.
Yes so the first column is gonna be the gamma ray and that's gonna be show you how radioactive the the formations are or the lithology.
So we use that for identifying different lithologies.
The second column is gonna be a depth track and then that's gonna be the 3rd column is gonna be a resistivity.
And the 4th column is gonna be a density porosity curve.
OK and why did you select these wells for inclusion on this.
I was trying to identify PDPS that were drilled in the upper Avalon the 3rd bone spring carb and the 3rd bone spring sand in this area.
That would give us somewhat of a similarity even though there is still variability in the Avalon primarily.
From the West to the east we see that the porosity really drops off in the Madeira federal 24 number one well which is going to be a proxy for what we expect to encounter in the Goliath DSU since it is in the actual DSU for the go.
Project.
And you show here at the bottom 9 miles is that.
Can you describe what that's referring to?
Yeah that's a rough estimate from the first well B on the left to the last well B prime which is in section 27 I believe.
And to make sure it's clear were these parameters that you used in preparing your original hearing exhibits.
Yes.
OK and to be clear this is only for the bone spring case right.
That's correct.
OK because we're talking about the Avalon and the 3rd bone spring.
That's correct.
Yep we're talking about the Avalon the 3rd bone spring carb and the 3rd bone spring Saint.
OK.
Is there anything else on this slide that you?
Wanted to point out.
I do want to point out that I this is a 5 well cross section and in the maps to come it looks like there's a 6 well cross section but the the Section 28 well is not present in this cross section.

So I did make a mistake on drawing the the B to B prime.
And that's on the subsequent exhibit.
Yep so there's only one.
Well that is east of the Madeira federal 24 number one.
OK.
And I'm looking at the next page of this exhibit which is page 156.
Of the filed PDF.
And did you prepare this exhibit and did you compile all of the information that's included here.
Yes I did.
I did.
And did you do that in evaluating the different zones that conoco Phillips or marathon is proposing to develop.
Yes.
And is this part of your geological analysis of those zones.
Yes this is how I identify similar targeting to make sure that we are looking at wells that are drilled in the same target interval that we can use as proxies for what we expect to see.
And then we do a risking on top of that for any kind of reservoir quality that might.
Change and what is shown here on this slide is.
Gonna be the.
Madeira federal 24 number one is the log the arrow is pointing to where these wells are landed that are showing up on the map.
That's in the middle.
And then it's B to B prime which is going to be that first cross section that I've prepared minus there is no well in 28 on that 5 will cross section.
So it goes straight from the star to the B prime.
And then I used these AP is and I pulled just some parameters from.
Data I pulled data from inverse actually and then I spot checked a few of them with the on the OCD website to make sure that they were similar.
And then I just put in some some different variability.
So what I'm trying to do is tie the production variability to some of the geologic parameters that we see.
OK and in referring to the production data that you hold that's is that shown here on the right in the table OK and does that data include any type of.

Yes.
Forecasting or projections.
No it does not.
Is it pulled directly from OCD or from the available public data for these wells production?
It should be yes OK.
And.
I think you might have already said this but to make sure I ask is this the data you relied on in determining that the upper Avalon was a risky formation for development at this time.
Yes this is what I relied on to show that there is some variability in the upper Avalon and it also shows that most of the the PD PS in this area are going to be to the northwest closer to the B well and where we do see elev.
Porosity.
And so we do see the porosity drop off and the Madeira 24 federal number one.
And so we think we would have we would have lower reservoir quality and we don't think that's represented in some of those wells but we do see pretty significant variability in the production numbers.
That I pulled.
And you obtained all of this data and compiled it yourself is that correct.
That is correct.
You didn't use any reservoir engineering analysis or data.
In compiling this information is that correct.
That's correct.
Yep it was all actual production information that's been reported.
And.
If the?
Upper Avalon was proven was a proven reservoir at a later date would you be able to come back and drill it at that time.
Yes if it's if we derisk the upper Avalon we have the opportunity to come back and get those reserves at a later date.
I think there's significant delta in TBD between any of the wells that we are proposing that depletion risk would be very very minimal.
And is there anything else that you wanted to point out or take away from this.
Slide.

No I think that pretty much covers it.
You know here.

Chakalian, Gregory, EMNRD 27:07
Miss Hardy does that.
Miss Hardy, does that slide have a separate? Is this all B5?
I'm trying to find out. OK, OK.

27:14
Yes it's it's all part of exhibit B 5.

Chakalian, Gregory, EMNRD 27:17
Perfect. Thank you.
And Mr. Patrick, you're using an acronym I don't understand. And for the record, what is PDP?
Is that what you're saying?

27:27
Yes Sir it's proved developed producing.
So it's going to be any well that's actively producing.

Chakalian, Gregory, EMNRD 27:31
Thank you.
Thank you.

27:37
And you have a note here that the north Blondie wells have less than 12 months of production.
Yep so there was limited production in some of these wells and so I was trying to pull as much analog information as I could.
So with having less than 12 months of production I focus on the 6 month production numbers.
OK.
I'm going to the next page which is page 157 of the PDF which is also part of exhibit B 5.

555 And can you explain what this slide shows.
556 It's that same cross section and it's also the same adiro 24 federal number one.
557 Well which is what we're expecting.
558 To see in the Goliath project and really what it's showing here is there's just not very
559 many wells in this area altogether.
560 And so we think that that immediately makes it a high risk reservoir just because
561 there isn't.
562 A good subset of analog wells that are landed in this exact interval.
563 And similar questions to before.
564 Did you prepare the slide and obtain the data that's shown on it?
565 Yes I did.
566 And did you do that as part of your geological analysis of the risk of the zone.
567 Yes there's just not much proven developed producing wells in this area that are
568 landed in this target.
569 And if this target zone was proved at a later time would you be able to come back
570 and develop it.
571 Yes we will have the option to come back and develop this interval at a later date
572 when we consider it not high risk.
573 Anything else on this slide that you need to point out.
574 Do want to note that some of these wells are actually located in Texas and so they
575 will not have production numbers on the OCD website?
576 And where did you get the production numbers for those walls.
577 I pulled them from infra.
578 In is inverse a database yes.
579 This was part of your geological analysis right.
580 This was Yep this is how I identify targeting.
581 OK and then going to the next page page 158 of the PDF which is also part of exhibit
582 B 5.
583 Did you prepare this slide?
584 Yes ma'am I did.
585 And did you compile all of the data that's shown on it.
586 I did.
587 Yes ma'am.
588 And can you explain what is shown here on the.
589 Slide.

So it's gonna be very similar to the 3rd one spring carpet slight this is gonna be once again the B to B prime.
That's the 5 wheel cross section that was on the first I guess page of the exhibit and then this is showing the arrow where they're the wells were being proposed and the 3rd bone spring sand.
And then this is showing the proved develop producing wells that were landed in that similar interval and there's just once again not very many wells in this area.
Is this a zone that you could come back and develop later if it's proved?
Yes.
OK.
Is there anything else on the slide that you wanted to discuss?
I don't believe so.
OK and I think that those were all of the slides that Tumblr had objected to but this was also this is exhibit supplemental exhibit B 6.
Is this a slide that you also prepared?
I did prepare this yes.
And was this prepared in response to Mister McClure 's request I believe.
I.
He requested the gun barrel yes OK.
And can you explain what this shows.
It shows our.
Development plan.
OK our current proposed development plan.
Thank you.
And those are all of my questions for Mister Tyler.
I would move the admission of exhibit B 5 and B 6.
They weren't already admitted and I couldn't remember that if they were actually from the hearing last week.

CE **Chakalian, Gregory, EMNRD** 31:37
I don't think they were because we were allowing Michigan a chance to.
Wader the witness.
So, Miss Shaheen, why don't we start with, let's just begin with your objection. As it stands now.

Shaheen, Sharon 32:03

As it stands now, it it stands on the reasons that were stated in our in our objections and that is that to the extent his testimony veers off into engineering testimony, we object to that testimony.

And to the extent that his testimony goes beyond the scope of his testimony, we continue to object on that basis as well.

Chakalian, Gregory, EMNRD 32:30

All right, so Miss Shaheen, I'm gonna give you a chance to validate your the witness now.

Please ask him whatever questions you want to support.

Your objection so that I can make a ruling on the objection and then you can go ahead and cross examine him once the slides are either admitted into evidence or redacted or whatever decision I make. So go ahead and do your void here on the witness.

Shaheen, Sharon 32:59

This part will go to the testimony that Mister Patrick previously offered, and to the extent his testimony today will relate to Reservoir Engineering and Mr. Patrick, I'm sure you may recall.

That in the prior hearing, you testified that you submit wells, you identify wells and submit those to the reservoir engineering group and then the Reservoir Engineering Group conducts their evaluation based on spacing and completion size.

Do you recall that test?

33:33

I believe so.

Shaheen, Sharon 33:34

And you confirmed again my analysis is to come up with component wells to hand over to the reservoir engineering group to put numbers to it.

Do you recall that?

33:45
Yes based on targeting yes ma'am.

Shaheen, Sharon 33:47
And you further said, quote, I'm not a reservoir engineer, so I don't create type curves, you testified.
That's also your testimony, correct?

33:57
That is correct.

Shaheen, Sharon 33:58
So any reference to EUR determination or economic risk that would require an engineer to calculate that would fall within an engineering or reservoir engineer's testimony, is that right?

34:18
Geologic risk that we place on projects goes into the economic risking.

Shaheen, Sharon 34:26
But any testimony that you offer in terms of economic risk that would relate only to geological factors is or parameters. Is that right?

34:37
Yes.

Shaheen, Sharon 34:38
And you yourself are offering no reservoir engineering analysis today.
Are you?

34:44
That's correct.

Shaheen, Sharon 34:45

And so your role in this process is to identify wells within a defined area that are quote analogues for a particular target and apply a geologic risk for each of those targets based on certain geologic parameters, so that an engineer may then determine EUR's and potential econom.
Risk is that a fair characterization?

35:09
I'm going to.
Object to the form of the question as being infusing.

SS **Shaheen, Sharon** 35:16
Let me try again.
I'll try to break it.

CE **Chakalian, Gregory, EMNRD** 35:17
I will.
I hold on. Hold on. I understood the question.
Which is saying something because I sometimes I don't understand half of what you people are saying. But Mr. Patrick, did you understand the question?

35:32
I'd like to hear it again if possible.

CE **Chakalian, Gregory, EMNRD** 35:34
But of course it is. If you don't understand the question, you can ask Miss Shaheen to rephrase. So by all means. OK, so objection sustained.
Please rephrase.

SS **Shaheen, Sharon** 35:43
Your role in this process, Mr. Patrick, is to identify wells within a defined area that are quote analogs for a particular target. Is that right?

35:56
Yes I identify wells that are landed in very similar geologic targets yes.

Shaheen, Sharon 36:03
And then you apply a geologic risk for each of those targets based on certain geologic parameters, so that an engineer may then determine EUR S and potential economic risk.
Is that a fair characterization?

36:21
Yes.

Shaheen, Sharon 36:28
At this time, Mr. Herring examiner, those are the only questions I have with respect to qualifications and scope of testimony.
There are others related questions throughout my cross examination outline, which is why I was going to reserve the right to object at the end of his testimony.

Chakalian, Gregory, EMNRD 36:45
Thanks.
Oh well, I need to make a decision on whether these come in or not before you can go ahead and cross examine him on them.
So I understand.
I understand from the wadier that you just conducted Miss Shaheen.
That.
I understand the limited scope.
Of a geologist, he's been recognized as a geologist.
What? I'm not piercing together so far, and I'll give you an opportunity to argue it and then miss Miss Hardy.
We can rebut the argument if she so chooses, is how do these exhibits fall outside the scope that you just?
Outlined with this gentleman.

Shaheen, Sharon 37:31
I think that that will become more apparent as I cross examine him.

Chakalian, Gregory, EMNRD 37:35
Oh.

Shaheen, Sharon 37:37
But with respect to any characterization of the numbers that are included in exhibit B5 and with respect to any characterization as to risk that is outside of a geologic assessment, for example, the production numbers, the cumulative oil.
Cumulative oil per foot of.
Lateral that kind of thing is ordinarily delegated to an engineer, and I understand that.
Mr. Patrick looked at some numbers and did some division.
Right. I mean I could have done that too.
So to the extent that's fact data, I don't think we're objecting to that. But to the extent he starts to opine on that in a way that may implicate the expertise of an engineer, we would object to that.

Chakalian, Gregory, EMNRD 38:32
So Miss Shaheen, I understand what you're saying.
M's Hardy did did Mr. Patrick?
Supply an additional self affirmed statement.

38:46
No because Mister McClure had just requested the the data.

Chakalian, Gregory, EMNRD 38:47
OK.
OK, OK, OK. OK.

38:50
So that's what we submitted.

Chakalian, Gregory, EMNRD 38:53
So then really what we have here.
But I can see machine is data that is supplied by Mr. Patrick in response to what?

Mr. McClure asked.
So what I'll do is I'll give you some more time to, as you say, go through your questions with this expert and then you can make your argument and show me because so far I'm not seeing what you're objecting to.
So far, however, maybe you'll show me something along the way.
So do you want to pull up an exhibit?
Are we going to go through these exhibit by exhibit machine?

Shaheen, Sharon 39:24
Yes, we will as as I proceed through my questions.

Chakalian, Gregory, EMNRD 39:29
Are you gonna share your screen?

Shaheen, Sharon 39:30
I will.

Chakalian, Gregory, EMNRD 39:32
Are you ready?

Shaheen, Sharon 39:33
I am ready.

Chakalian, Gregory, EMNRD 39:34
Alright, go right ahead.

Shaheen, Sharon 39:37
Good afternoon, Mr. Patrick.

39:40
Afternoon.

Shaheen, Sharon 39:42
I had a few threshold questions that I think are maybe irrelevant now that I know that you're in the room with Miss Hardy because I feel fairly confident that you don't have

a device by which someone can communicate with you and tell you how to answer a partic.
Question and is that is that true?

40:03
I I have my computer here.
I'm I'm not sure what you're exactly asking.

Shaheen, Sharon 40:08
OK.
Well, I'm asking whether someone can communicate with you to provide you with an answer to a question that I might have.

40:18
I yeah I suppose someone could yeah.

Shaheen, Sharon 40:21
And so I would ask that you put that device away so that no one is communicating with you while you were testifying.

40:29
I won't see the exhibits.
Just on my computer I'm not not sure.

Shaheen, Sharon 40:34
Well, perhaps.
Maybe you close your e-mail or you close your chat or whatever you have that would allow you someone to ping you if you will with an answer to a question.

40:47
That's team I'm I have to.
This is through teams.
I can't close.
No I'm not gonna get any information from people but I I don't see how I can close teams and still be able to see the exhibits.

Shaheen, Sharon 40:59
OK.
So can you just for the record confirm that no one will be communicating with you while you were testifying other than your attorney in the room?
Who can object if if she doesn't like my question?

41:11
Yes that's that's gonna be true.

Shaheen, Sharon 41:13
OK. And do you have any documents in front of you other than the unadulterated exhibits that were filed on behalf of Marathon?

started transcription

Shaheen, Sharon 41:18
The unadulterated exhibits that were filed on behalf of Marathon.

41:24
No ma'am.
OK.

Shaheen, Sharon 41:25
OK.
OK.
And I believe.
Mr.
Hearing the hearing hearing Examiner asks you about Mr.
Shaheen, Sharon 0:03
The unadulterated exhibits that were filed on behalf of Marathon.

0:08
No ma'am.
OK.

Shaheen, Sharon 0:09
OK.
OK.
And I believe.
Mr.
Hearing the hearing hearing Examiner asks you about Mr.
Mcclure's ask of you in the last hearing and I just want to review that to make sure we're all on the same page. As I recall, and I've looked at your transcript, the technical examiner asked you quote, if I would ask you for additional exhibits, which PROV.

Tschantz, Freya, EMNRD stopped transcription

Shaheen, Sharon 0:44
Us with the parameters and screening that went into making that determination.
Your determination with respect to risk, you understand what I'm asking for.
And you answered.
Yes, Sir. It would also entail a conversation with my reservoir engineer.
Do you recall that exchange at the last hearing?

1:05
Yes.

Shaheen, Sharon 1:06
And.
Earlier in your testimony, you stated, quote, the way that we risk it from a geologic standpoint is to the EUR economic risking basis based on geologic concern.
End Quote.
Those are your words, isn't that right?

1:26
Yes.

Shaheen, Sharon 1:27

And then, Mr. hearing examiner Shakali clarified.
I think what he's asking for is what analysis did you do and what parameters did you use to come up with whatever you came up with in your expert opinion, that's what he's asking for.
Do you recall hearing examiner Shakali's clarification in the last hearing?

1:52
Yes.

Shaheen, Sharon 1:53
And you recall what information?
Mr. McClure asked you to provide right with respect to your analysis of wells relating to the Upper Avalon, the Third Bone Spring CARB and the Third Bone Spring sand, he said.
And the parameters and this API's that were used by Marathon's geologists to make a high risk determination of those three different target zones.
Do you recall that instruction from Mr. McClure?

2:22
Yes.

Shaheen, Sharon 2:23
OK.
You also testified, referring to the Upper Avalon quote.
I submit those wells to the reservoir engineering group and they conducted their evaluation based on spacing and completion size.
Do you recall that testimony?

2:44
Yes.

Shaheen, Sharon 2:45
And again, you confirmed my analysis is to come up with component wells to hand over to the reservoir engineering group to put numbers to it, End Quote.
Do you recall that testimony?

2:58

Yes.

Shaheen, Sharon 2:59

OK.

I.

I I realize now I'm I'm reiterating the the questions that we already went through.

So I'm going to move on to the next.

Turning now to your cross section and I will share my screen now.

Do you see the cross section?

3:35

Yes.

Chakalian, Gregory, EMNRD 3:37

Miss Shaheen, would you identify when you show the witness something by exhibit number and page number?

Shaheen, Sharon 3:45

Yes, this is the first page of supplemental exhibit B5 PDF, page 155 of 292.

Chakalian, Gregory, EMNRD 3:53

Thank you.

Shaheen, Sharon 3:58

In exhibit B5, you state quote Upper Avalon and 3rd Bone Spring intervals vary in thickness, structural depth lithology and porosity.

These geologic heterogeneities and structural differences are a couple of factors that increase the production variability in the area.

Did I read that correctly?

4:22

Yes.

Shaheen, Sharon 4:23
Are these all of the geologic characteristics that you used?
In performing your geologic concerns, high risk analysis that led to selecting the component wells in your API list.

4:37
Specific targeting is also a parameter that I use.

Shaheen, Sharon 4:43
And what are the numerical boundaries that you apply to each of these characteristics that lead to your determination of high risk in this analysis?

4:57
What are the numerical boundary?
Say that again I'm sorry.

Shaheen, Sharon 5:03
Yes, what are the?
How do you define for example? Is there a range that you use with respect to each of these geologic parameters that you rely on to determine whether a whether a well should be a on your list of API wells?

5:27
So the list starts with the targeting.
That's I get the list of AP is specifically based on geologic targeting.

Shaheen, Sharon 5:39
OK. And and when you say geologic targeting, are you looking at particular depths?

5:47
I'd be looking at particular stratigraphy.
So I don't want to pull a well that is in the middle Avalon for instance I want to make sure it's in the upper Avalon.

So I'm looking for targeting that is gonna be pretty similar to what we're looking at.
For the DSU would be proposing wells in.

Shaheen, Sharon 6:12
And how do you determine what is the same target as the wells that Tumblr is proposing?

6:20
So it's not always the exact same target but I'm looking for similar and I correlate on well logs so just like I've.
So it's not always the exact same target but I'm looking for similar and I correlate on well logs so just like I've.

Shaheen, Sharon 6:27
And when?
And excuse me, I'm sorry if you'll just answer my question as succinctly as possible.
And then I'll, I'll if I have a follow up, I'll ask it.
You mentioned the word similarities.
What similarities are you referring to?

6:44
Stratigraphy.

Shaheen, Sharon 6:47
OK. And is there a range of strateg?
Y that guides your analysis.

6:58
A range of stratigraphy that guides my analysis.
I'm not sure I understand the question.

Shaheen, Sharon 7:07
What about what?
Excuse me.

What stratigraphic characteristics are you looking for to determine that it's the similar? It's a similar target.

7:23

It would be based on my tops that I correlate.

Shaheen, Sharon 7:30

Correlate with what?

7:33

With well logs.

Shaheen, Sharon 7:35

The tops of the formations that you correlate with well logs.

7:40

Yes.

Shaheen, Sharon 7:46

And so that goes.

How does that?

Well, let's turn now to thickness.

You you stated that you examined the thickness as a geological parameter.

First, first, let me ask you this.

You you stated thickness, structural depth.

Is structural depth what you mean when you're talking about stratigraphy?

8:16

The depth would be determined based on my correlations yes.

Shaheen, Sharon 8:22

So you you've referenced thickness, structural depth, lithology and porosity.

Are these all of the geologic characteristics that you used in performing your geologic concern?

High risk analysis that led to selecting the wells in your API list.

8:42

Those are all factors that go into variability of reservoirs these APIs were purely selected on identifying the same stratigraphy that's being proposed.

Shaheen, Sharon 9:00

So if I understand correctly, you chose the wells based on stratigraphy, is that right?

9:07

Yes that's correct Yep.

Shaheen, Sharon 9:09

And stratigraphy. How does that?

Actually, let let me just let me just back up.

So that is the only.

Factor that you used in selecting the wells on your list. Is that right?

9:26

Yes.

Shaheen, Sharon 9:31

And how did you determine which wells to include and which wells to exclude?

9:39

Based on the targeting similar statist.

Shaheen, Sharon 9:47

Turning to thickness.

What did you consider with respect to thickness when you applied?

That parameter to your analysis.

10:07

That just goes into the variability.

Shaheen, Sharon 10:16

And what is there some sort of measurement with respect to thickness that you use when you considered that parameter?
In reaching your conclusions about variability.

10:34
It'd just be a delta between the stratigraphy the tops that I picked.

Shaheen, Sharon 10:41
Between the tops that you picked and what?

10:45
In the well logs.

Shaheen, Sharon 10:48
But if I understand correctly, you're saying it's a difference between the tops and something else.
And so my question is, what's the something else?

10:58
This in another well so be the changing and thickness of.
The different stratigraphic intervals in different areas of the basin.

Shaheen, Sharon 11:12
OK.
So maybe I should ask a more general question.
What are the parameters or cutoffs that you use to determine a well as high risk?

11:35
Will it be the lack of data?
In the area of similar targeting.
I don't know if that answers your question.

Shaheen, Sharon 11:52
So you're saying you didn't use any parameters or cut offs, you just relied on the fact that that you had a lack of data.

12:02
Objection mistakes testimony.

Shaheen, Sharon 12:05
You can answer if you understand.

Chakalian, Gregory, EMNRD 12:05
Over. Hold on, miche.

Shaheen, Sharon 12:07
I'm sorry, go ahead.
My bad.

Chakalian, Gregory, EMNRD 12:11
Overruled. Go ahead.
Is there a question there machine.

12:20
Can you ask it again?

Shaheen, Sharon 12:21
Yes, yes.
So if I understand correctly, you didn't actually use any numeric quantifiers.
To determine whether a well is high risk, you just relied on your lack of data. Is that right?

12:42
The lack of data.
Is a big driver of the uncertainty yes?

Shaheen, Sharon 12:50
So you did not rely on any quantities. Quantitative factors, is that right?

12:59

Oh we do look at quantitative factors yes.

Shaheen, Sharon 13:01

What quantitative factors or parameters did you look at?

13:06

Rossi is a big one.

Shaheen, Sharon 13:10

And is there a range, a high and a low for porosity that you use to determine whether a well, a well is high risk?

13:22

Is there a range of porosity that I use to determine if a well is high risk? Was that the question?

Shaheen, Sharon 13:28

Yeah. Yes, that's the question.

13:35

Not in the specific analysis no.

Shaheen, Sharon 13:41

Consider with respect to porosity.

13:51

That it's present.

Shaheen, Sharon 13:55

That it's present in in, in what quantity or what met? How do you measure whether it's present or not?

14:04

Specific analysis I was looking at the density porosity.
So we measure row B and then we adjust it for what we expect the density of the reservoir to be and then it gives us a percent porosity which would be the void space and the reservoir that would be filled with fluid.

Shaheen, Sharon 14:17
OK. And I'm sorry, I didn't mean to interrupt you.

14:22
OK it just tells us what it quantifies the amount of fluid that could be available in the stratigraphy.

Shaheen, Sharon 14:30
And so are there numbers that you use when you make that determination?

14:38
Yes.

Shaheen, Sharon 14:39
And what numbers are those?

14:43
But it'd be zero to 100% I guess.
So zero.
There's no porosity so it's all rock.
100% would be 100% porosity and then.
1% porosity can still give you fluid 0% camp.

Shaheen, Sharon 15:11
Turning now to lithology.
How did you apply the lithology parameter in determining whether a well is high risk?

15:23
I was looking at the what I would consider or interpret as carbonates as non

productive intervals.
And I was looking for the sands silt and shells as productive intervals.

Shaheen, Sharon 15:36
OK. And how did you determine?
Did you use some numerical?
Factor to determine to make that determination.

15:51
On mythology.

Shaheen, Sharon 15:53
Yes.

15:54
Yes I would use the gamma ray.
To interpret lithology.
Along with the resistivity.
To.
Interpret lithology.

Shaheen, Sharon 16:07
What ranges for the lithology and the resistivity did you use to determine that well as high risk?

16:20
I would use a very low camra.
To interpret that as being a carbonate interval which is not going to be productive in some areas.

Shaheen, Sharon 16:31
And what do you when you say a very low gamma ray?
Is there a number you can put to that?

16:38
But not specifically no.

Shaheen, Sharon 16:40
What? What did you use as a guide then?

16:47
My experience as being a geologist.

Shaheen, Sharon 16:52
I'm just trying to get get an idea what you mean by low.

16:57
Got less than 50.

Shaheen, Sharon 17:00
Less than 50.
So if if the mythology if the gamma ray was less than 50 then you would consider it a high risk well.

17:14
No I would consider that.
Potentially a carbonate.

Shaheen, Sharon 17:23
OK. And how, I'm sorry.

17:23
Or salts.
Or salts.
Or or it would be any the gamma ray would be showing anything that has a low radioactive material in it and so that can be several different materials but that's one of the ways that I was trying to interpret.
Lithology.

Shaheen, Sharon 17:45
And how does that apply to determining whether well is high risk?

17:53
So if it's carbonate based on my interpretation and it does not have any porosity that would reduce the net to gross in the area of that reservoir which would reduce the amount.
Of.
Fluid you could produce.

Shaheen, Sharon 18:13
So looking at your log, are you saying that there's not any porosity in the Upper Avalon?

18:22
I am not saying.

Shaheen, Sharon 18:27
What are you saying?
With respect to porosity in the Upper Avalon.

18:35
That there's variability in it.

Shaheen, Sharon 18:38
And what is the range of variability?

18:44
Well if you look at the well on the far left I would say is I would estimate it has about 3 times as much porosity in the upper Avalon compared to the wealth that's in the Goliath the SU.

Shaheen, Sharon 19:03
You're looking at this well here, where my hand is.

19:06
That's correct.

Shaheen, Sharon 19:15
And that's with respect to porosity.
Am I?
Am I on the right page here?

19:20
Mm-hmm that's correct.

Shaheen, Sharon 19:22
OK. And then going back to lithology, let's talk about.
How you what numbers you applied in your considerations relating to lithology?

19:46
Was that a question I'm sorry?

Shaheen, Sharon 19:48
Yes, let's talk about what numerical parameters you may have used in your analysis relating to lithology.
Can you tell me what numbers were used to determine whether a well is high risk?

20:05
On the lithology would be based on if we think that is a pay lithology or if it's a non pay lithology so it goes into the net to gross.
Estimate.
Or evaluation and.
The carbonates to be productive in this area.
Those.

Shaheen, Sharon 20:27
What percentage of carbonate to sand to organics do you find in any of these wells?

20:40
What percent carbonate?

Shaheen, Sharon 20:47
Yes.

20:55
It.

Shaheen, Sharon 21:00
And is there a range of that percentage that you use to determine whether well as high risk?

21:14
Wells in the area that were landed in that interval.

Shaheen, Sharon 21:23
And so you're saying that you don't have a percentage of carbonate as it relates to Sand organics, is that right?
OK. And you've not done that with any of these wells that are on your API list, is that right?

21:48
Not.
No.

Shaheen, Sharon 21:52
That wasn't my question.
My question is with respect to any of the wells that you've provided in your API list.
Even though you didn't.
Perform that analysis.
You still use these parameters to identify the component wells in all of your slides.
Regarding the Avalon, the Third Bone spring carbonate and the Third Bone Spring sand, is that right?

22:57
Stratigraphy.

Shaheen, Sharon 23:02
Right, But how did you then apply those to determine that the wells were high risk?

23:16
It would be the variability and.
Queue per foot analysis.
Or.
Math.

Shaheen, Sharon 23:30
Does the first Bone Spring sand and the second Bone spring sand that Conoco is targeting show variation across this cross section with respect to porosity?

23:41
Yes.

Shaheen, Sharon 23:43
Does it?
Does it show variation across the cross section on conoco's targeted formations with respect to structural debt?
That was a yes.
I'm sorry, I didn't hear.

23:58
Correct yes.

Shaheen, Sharon 24:00
And does the first Bone Spring sand and the second Bone spring sand that conco is targeting our marathon?
Show variation across this cross section with respect to lithology.

24:14
Yes.

Shaheen, Sharon 24:15
Same question with respect to thickness.

24:19
There is variability yes.

Shaheen, Sharon 24:29
Now to the next slide which will be PDF. I wanna say 50 sick.
We need to make it a little smaller here.
Is this the well list you use to make a high risk determination for the Upper Avalon?

25:06
Yes.

Shaheen, Sharon 25:10
Is this the well list you gave to your engineers to generate conoco's type curves?
You identify these wells as quote analogs.
What are these wells analogous to?
And how does that compare to the target that Tumblr is proposed?

26:00
It would be the same stratographic area.

Shaheen, Sharon 26:06
And how would you?
How would you describe that stratigraphic area?

26:15
The lower portion of the upper Avalon.

Shaheen, Sharon 26:20

The lower portion of the Upper Avalon and so.
With respect to these wells being analogs, is it fair to say they're not analogous as to the other geological parameters that we've discussed?

26:41
Object to the.
I.

Shaheen, Sharon 26:45
I can ask it. Oops, sorry.

Chakalian, Gregory, EMNRD 26:50
Machine I was looking at another document.
When you asked that question, so I didn't hear the question, would you ask it again so I can hear it.

Shaheen, Sharon 26:58
Yes, yes, so.
And and maybe I should.
Preface it so that the previous testimony of Mr.
Patrick.
Is there as the background?
So.
If I understand correctly, the only analog with respect to these wells is the stratigraphic.
Parameter. Is that right?

Chakalian, Gregory, EMNRD 27:35
Wait, hold on.
You're you're just repeating the question to me so I can make a ruling.

Shaheen, Sharon 27:41
Oh, OK, so I I had asked the the question is these wells are not analogous as to the geological, the other geological parameters that we've been discussing.

Chakalian, Gregory, EMNRD 27:42
What is the question?

Shaheen, Sharon 27:55
Is that right? That's the question.

Chakalian, Gregory, EMNRD 27:59
Miss Hardy, you feel that's that's confusing.

28:03
Yes I do because I I'm not sure.
What miss Shaheen is referencing as to other geological parameters?

Chakalian, Gregory, EMNRD 28:14
OK.
All right, so Miss Shaheen, I'm gonna sustain the objection without going through a whole bunch of back and forth.
Just rephrase it.
I'm sure you can do it.
You can do that.

Shaheen, Sharon 28:23
OK.
Yes, I can.
So Mr. Mr. Patrick, if I understand correctly, your testimony is that these wells are analogous to the stratigraphic target.
Of that of the wells that Tumblr is proposing in the Upper Avalon. Is that right?

28:40
That's correct.

Shaheen, Sharon 28:42
And they are not analogous with respect to porosity, correct?

28:48
Correct.

Shaheen, Sharon 28:49
And they're not analogous with respect to structural depth.
Is that right?

28:59
There is some differences yes.

Shaheen, Sharon 29:01
And they're not analogous with respect to lithology. Is that correct?
That's my question is whether the wells that you've chosen are analogous to.
Are also analogous with respect to.
Structural depth.
Did you consider structural depth when you determined whether a well is analogous?

29:40
Only chose these wells based on stratigraphic targeting.

Shaheen, Sharon 29:44
OK. And did you consider thickness when you determined whether a well was an analog well?
Turning to your list here, you'll see that the first well is the Brunson well.
You see that I can make it a little bigger.

30:20
Yep Brunson I see it.

Shaheen, Sharon 30:28
What is the thickness, porosity, lithology and structural depth of the Brunson well?

30:35
Tell you specifically the top of my head.

Shaheen, Sharon 30:38
Do you know whether it's the same as the Upper Avalon target that Tumblr proposed to drill?

30:45
No.

Shaheen, Sharon 30:46
You don't know.
Is that right?

30:51
Correct.

Shaheen, Sharon 30:55
With respect to the Jackson trust wells.
Here we go right here.
Do you see where my hand is?

31:02
Yes ma'am.

Shaheen, Sharon 31:05
Same questions.
What? What is the thickness, porosity, lithology and structural depth of the Jackson Trust, C-12?
Well.

31:18
I can't tell you off the top of my head.

Shaheen, Sharon 31:21
And do you know whether it's the same as the Upper Avalon target that Tumblr's proposed to drill?

31:28
I would assume it's different.

Shaheen, Sharon 31:30
With respect to the North Blondie wells, what is the thickness, porosity, lithology and structural depth of the North Blondie wells?

31:43
I can't tell you specifically no.

Shaheen, Sharon 31:45
Do you know whether that those wells target the Upper Avalon target that Tumblr has proposed to drill?

31:56
Target of a similar area similar stratigraphic interval yes.

Shaheen, Sharon 32:02
Turning to the rail splitter well.
What is the thickness, porosity, lithology and structural depth of the rail splitter well?

32:13
It would have to be estimated.

Shaheen, Sharon 32:16
Have you estimated?

32:19
We could go through that process together if you want.

Shaheen, Sharon 32:22
I'm asking you, have you done that?
Have you done that?

32:30
Alright no not specifically no.

Shaheen, Sharon 32:36
And do you know whether the rail splitter targets the same Upper Avalon target that Tumblr has proposed to drill?

32:44
It should be similar.

Shaheen, Sharon 32:47
What do you mean? It should be similar.

32:49
It should be drilled in the upper Avalon from my correlation.

Shaheen, Sharon 32:55
Do you know how the thicknesses, porosity, lithology and structural depths of any of the wells we've just talked about compare with tumblers target?

33:07
It's variable yes.

Shaheen, Sharon 33:11
I'm not sure that answers my question.
How do those thicknesses, porosity lithology and structural depths compare with tumblers target?

33:27
There would be differences.

Shaheen, Sharon 33:31
Do you know what those differences are?

33:35
Off the top of my head.

Shaheen, Sharon 33:37
Have you considered those differences?

33:41
Yes we consider those.
Think that the variability in the upper Avalon increases the uncertainty of what we expect the wells to perform in the Goliath unit.
Therefore.
We made a determination or I made the determination that there was geologic risk.

Shaheen, Sharon 34:07
I'm I'm a little confused because if I understand the answers to your questions that I just asked you, you had not looked.
You don't know what the thickness, porosity, lithology and structural death of of those wells were.
Didn't you answer that in the negative?

34:29
Yes because it's variable yes.

Shaheen, Sharon 34:35
Mr. McClure asked for the parameters.
What are the parameters that you apply to those characteristics?

34:50
Those yeah be the thickness structural depth pathology porosity Yep.

Shaheen, Sharon 35:00
And if you don't know what they are with respect to each of these wells, how do you know what?
How do you know that they're different?

35:15
By looking at the variability on the logs.

Shaheen, Sharon 35:20
For each of these wells.

35:25
I pulled logs in the area.

Shaheen, Sharon 35:30
But you didn't look for the logs for. Look at the logs for each of these wells that are on your well list, did you?

35:40
No.

Shaheen, Sharon 35:41
What are the cut offs for those parameters?
Thickness porosity lithology and structural depth.

35:57
I didn't use cut offs.
That would be more of a pay determination.

Shaheen, Sharon 36:09
Where similar rock properties used to establish this well list.

36:17
No this well list was derived specifically from stratigraphic targeting.

Shaheen, Sharon 36:24
In your well list, is there a certain distance that you use to select the wells?

36:33

I tried to keep it within the bounds of major structural differences such as the central basic platform of the east antelope bridge to the north or the depo centre of the basin to the West.
So I tried to make sure that we weren't pulling wells from different major geologic features.

Shaheen, Sharon 36:55
So could you estimate the mile range of that area that you've looked at for wells that you believe are analog?

37:05
I believe this map is showing roughly 100 square miles.

Shaheen, Sharon 37:16
This exhibit also displays quote analog.
Six month cumulative production ranges between.
4 to 13 barrels of oil per foot, would you agree with that?
Let me and let me scoot this over so that you can see.

37:37
Umm.
This does show cume per foot oil production for the first 6 months.

Shaheen, Sharon 37:49
Do you agree that that what you've shown here ranges between 4 and 13 barrels of oil per foot?

38:01
Yeah looks like 4 point.
18 on the low end and 13.92 on the high yes.

Shaheen, Sharon 38:10
And six month cumulative production is is literally a measurement of production after completion and not a geologic property of the rock, correct.

38:24
You correct.

Shaheen, Sharon 38:26
I'm sorry you said correct.

38:28
That's correct yes.

Shaheen, Sharon 38:30
If you excuse me. Sorry. I'm. I'm making a a switch here.
Do geological parameters affected by operational conditions such as parent child interference, take away constraints, artificial lift, and choke management?
Our geological parameters affected by those.
Things.

39:02
No.

Shaheen, Sharon 39:05
Do you know if six month production may be affected by many other factors unrelated to geology?

39:13
Candy.

Shaheen, Sharon 39:18
And so six month production is not a geologic parameter for selecting analogous wells, is that right?

39:29
It is not that's correct.

Shaheen, Sharon 39:30

And and so it's. It's not a geologic parameter for determining whether a well is high risk, right?

39:43

It is a parameter yeah.

Yeah it could be because the variability.

Shaheen, Sharon 39:47

It could be a geologic parameter.

39:50

Well we would.

Shaheen, Sharon 40:02

Into the gunner. 8 wells that you show here on your list.

You've got six gun or eight wells, is that right?

Would you say that the geologic parameters between those wells exhibit high variability?

40:19

It.

I would assume that would be moderate variability since they're all in the same unit.

Shaheen, Sharon 40:36

What do you mean by moderate variability?

How much?

40:48

Qualitative it's a it's a qualitative statement.

Shaheen, Sharon 40:54

You mean that subjective?

You you don't have an objective measure.

For that variability, do you?

41:14
No.

Shaheen, Sharon 41:22
Yet as well show wide range of variability and results. If you look over here in the last column to the right.
You'll see a range from 5.66 barrels of oil per foot to 13.88 barrels of oil per. Do you see that?

41:42
No.

Shaheen, Sharon 41:44
You don't see that.

41:44
I Oh yeah 13.8 the yes ma'am I do.

Shaheen, Sharon 41:48
OK and.
Did the geology change between when?
The first well was spud in October of 2011. In the last well was spud on July 27th of 2015.

42:02
Geology did not change no.

Shaheen, Sharon 42:04
Is it possible that other factors contributed to this variability in barrels of oil per foot since the geology is not highly variable between the wells?

42:17
There are several factors that go into that yes.

Shaheen, Sharon 42:24
If you were to exclude the wells drilled prior to 2013 from this list of wells, what would the effective range of results become?

42:37
I can't tell you without actually doing the work.

Shaheen, Sharon 42:41
Well, take a minute there.
Take a look at your table.

42:45
Exclude the ones before when.

Shaheen, Sharon 42:48
Exclude the wells prior to 2013.

43:02
4.
And you know it should be up 41310.
Looks like it would be 13.92.
2.
That's 4.06.
To 5.01 I believe.
2016.

Shaheen, Sharon 43:42
And if you were to perform the same exercise with respect to wells drilled prior to 2016, what would the effective range of results become?

43:55
Else drilled before 2016.

Shaheen, Sharon 43:57

No. If you were to exclude the wells drilled prior to 2016.
What would the range of barrels of oil?
1st, for the first six months look like.

44:19
So that's 16 and 13.
Those are all.
48484.
So.
North Blondie.
And rail splitter.
I believe.
9.1.
2.
To 13 point no no no 13.93.

Shaheen, Sharon 45:02
Our geological parameters affected by the advances in completion designs between 2010 and 2025.

45:17
No.

Shaheen, Sharon 45:19
You just testified that production can change based on engineering, didn't you?

45:29
I don't think so.

Shaheen, Sharon 45:31
Well, I asked you earlier.
Let's see if I can find that line of questioning.
Well, let me just ask it again.
Umm.
Can production change based on engineering?

46:10
Yes.

Shaheen, Sharon 46:12
So all you're trying to establish here in this slide is that production exhibits variability within the area that you've identified, but you haven't established how or how much geology contributes to the variability, isn't that right?

46:33
I provided the cross section so you could look at the geologic variability.

Shaheen, Sharon 46:39
How much did the geology affect variability 40%?

46:54
I don't have a specific percentage.

Shaheen, Sharon 46:57
How much did the production?
Is it just a production variability?

47:13
Sorry is just what a production variability.

Shaheen, Sharon 47:18
Is the variability that you're trying to establish here in this slide with respect to the Upper Avalon? Does that simply result of production variabilities?

47:36
I am showing variability in the production in this table yes.

Shaheen, Sharon 47:45
What geological parameter do you contend affected variability in this production?

48:05

I would.

Say the.

Biggest geologic parameter would be porosity.

Shaheen, Sharon 48:15

But you've already testified that you didn't look at porosity with respect to each of these wells, correct?

48:23

It's on the first slide of this exhibit you can.

Shaheen, Sharon 48:27

Well, my question is with respect to this list of wells on this slide, the Upper Avalon wells, you didn't examine porosity with respect to each of these wells, did you?

48:38

No.

Shaheen, Sharon 48:40

How much does geologic variability contribute to the production variability?

48:51

I would say it would have a range most likely.

Shaheen, Sharon 48:56

And what is that range?

49:01

Zero to 100%.

Shaheen, Sharon 49:07

But you haven't established a range with respect to these wells, have you?

49:19
Not in these exhibits no.

Shaheen, Sharon 49:22
And have you otherwise somewhere else that we haven't seen?

49:30
Are you asking if I've quantified the variability in the geology?

Shaheen, Sharon 49:34
I'm asking you, what have you quantified the range of geologic?
Of how much geologic variability contributes to production variability?

49:49
Not need exhibits no.

Shaheen, Sharon 50:00
How much does geologic variability contribute to production variability on a well by well basis?

50:10
Do we have a range?

Shaheen, Sharon 50:14
I'm sorry. Do you have a range?
I don't have any ranges.
I'm not a geologist.
I have to rely on you for the ranges.

50:23
I mean it could be zero to 100%.

Shaheen, Sharon 50:29
Well, if if I ask that same question, I'm I'm asking it with respect to your well list

which well on this list can you explain to me on any of these wells on your list how much geologic variability contribute contributes to the production variability on any particular well?
In this list.

50:57
No I guess not.

Shaheen, Sharon 51:03
Turning now to the next slide, which is PDF 157.
Let me make this a little smaller.
This slide relates to the third bone carb. Is that correct?

51:24
Yes ma'am.

Shaheen, Sharon 51:26
And here is your well list.
Here it's four wells.
Let me make that a little bit bigger.
Is this the well list you use to make a high risk determination for the third Bone Spring carb?

51:48
Yes.

Shaheen, Sharon 51:51
Well, Liz, you gave to your engineers to generate conoco's type curves.

51:57
No.

Shaheen, Sharon 51:59
Why is there a difference between the two?

52:06
Well.
I I guess I'm an object we don't.
We haven't filed any type curves in this case so.
I don't know what.
He was talking about.

Shaheen, Sharon 52:16
Yes, in in his previous testimony, Mr. Patrick testified that he selects wells and he provides them to his engineers so they can do their type curves.
And so I'm asking him, is this the well list that he gave to the engineers to perform?
Conoco's type curve for this formation.
And the third Bone spring carb.

Chakalian, Gregory, EMNRD 52:36
But, but Miss Shaheen?
What the test?
So you're relating these questions this question now back to former testimony from the contested hearing.

Shaheen, Sharon 52:49
That's correct.

Chakalian, Gregory, EMNRD 52:50
All right, now we're not reopening this entire hearing.
We've only reopened the evidentiary record to accept these supplemental exhibits and the direct and cross have to be within the same scope.
And so we don't have that scope here.

Shaheen, Sharon 53:14
My understanding is that.
He testified that he selects the wells.
Based on geologic parameters that he then provides.
To conoco's engineers to generate their type curves. That was his testimony and Mr.

Chakalian, Gregory, EMNRD 53:30
I'm not. I I'm not disputing that, Michelle.
That's not the point. I'm trying to make here is we're not here to reopen the entire hearing.
We're not going back over.
An entire contested hearing to to be to allow you to cross examine him on every subject that came up at the contested hearing.
That's over with.
We're only here to deal with these exhibits that you objected to.
So I I I'm gonna sustain that objection because it's outside the scope of his direct.
When it comes to these exhibits.

Shaheen, Sharon 54:05
OK.
I'll move on.

Chakalian, Gregory, EMNRD 54:06
Thank you.

Shaheen, Sharon 54:09
Again, here you identify these wells.
Well, you identify these particular wells as analog wells and again we, we've already talked about analog wells.
I just want to confirm for the record that with respect to the third bound spring carb, these these are analog wells based on the excuse me, stratigraphic considerations relating to the targeted.
Zone. Is that right?

54:38
That's correct.

Shaheen, Sharon 54:39
They're not an analogue with respect to any of the any geological parameters, right?

54:48
Only the stratigraphic targeting.

Shaheen, Sharon 54:54
How are these wells analogous to the target that Tumblr is drilling?

55:02
Similar to the stratographic targeting that Tumblr was proposing.

Shaheen, Sharon 55:10
As the thickness, porosity, lithology and structural depth of the queen Robin wells that you have identified here.

55:18
I can't tell you specifically.

Shaheen, Sharon 55:20
You haven't considered that.

55:25
No.

Shaheen, Sharon 55:25
Correct.
Same question with respect to the Los Veccharos wells.
Do you know what the thickness, porosity, lithology and structural depth of the laser wells are?

55:49
No.

Shaheen, Sharon 55:50
And so you don't know how those.

Parameters of those wells compare with Tumblr's target, do you?
We're similar rock properties used to establish this well list.

56:06
No only stratigraphic targeting.

Shaheen, Sharon 56:09
Again in this well list, is there a certain distance that you use to select these wells?

56:16
I believe this is also a roughly 100 square miles.

Shaheen, Sharon 56:23
This exhibit also displays.
Six month cumulative oil per foot, correct.

56:33
Correct.

Shaheen, Sharon 56:37
And we talked earlier.
This is really a measurement of production after completion and not a geologic property of the rock, right?

56:47
Correct.

Shaheen, Sharon 56:49
And you can't testify as to whether A9 barrel of oil per foot six month cumulative production for well as economically viable, can you?

57:00
No.
No.

Shaheen, Sharon 57:02
Does the small map in the lower right hand corner and I'll make this bigger.
This map right here.
Does this map display all of the wells that are analogs as you defined earlier?
Or are there other wells in the same target located in this larger roughly 180 square mile area?

57:38
I don't know.
I provided this screenshot so you could see the well names listed.

Shaheen, Sharon 57:44
And so.

57:44
For the wells.

Shaheen, Sharon 57:47
You you don't know whether there are other wells in the same target area that are nearby.

57:55
That are inside this map view.

Shaheen, Sharon 57:58
Yes.

57:59
There potentially could be.

Shaheen, Sharon 58:02
Have you included every well in the formation?

58:08
No.

Shaheen, Sharon 58:10
Does this well list represent all of the wells within the distance that you've identified?

58:22
No.

Shaheen, Sharon 58:25
Does this map in this list represent all the wells in in your range?

58:34
That map is showing the 4 wells that identified on the other map.
The field of view is different.

Shaheen, Sharon 58:58
Does this Wellness represent all of the wells that relate to the stratigraphic target?

59:13
The.
V.
Similar stereographic targeting in the field of view of the other map yes.

Shaheen, Sharon 59:42
Are you familiar with the ludman wells?
The 202 H and the 1408H that are operated by Conoco.

59:56
I guess not.

Shaheen, Sharon 59:58
Now those wells are within 5 miles of the David development.

I'll represent that to you, but those wells do not appear in your list or on your map, do they?

1:00:10

I do not see them listed.

SS **Shaheen, Sharon** 1:00:11

Why were those wells excluded?

1:00:19

It would have to be.

I interpreted them as being in a different stratographic interval.

SS **Shaheen, Sharon** 1:00:35

Focusing again on the smaller map.

Are there any other third bounce spring carb wells within this area?

1:00:46

There could be potentially.

SS **Shaheen, Sharon** 1:00:49

Would you agree that this map is a little misleading because it doesn't include all of the wells in the third bone sprain carb?

1:00:55

Object to the question is being argumentative.

CE **Chakalian, Gregory, EMNRD** 1:01:00

I sustained that.

Miss Shaheen, would you please rephrase that question?

SS **Shaheen, Sharon** 1:01:07

Do you agree that this map is inaccurate because it doesn't include all of the wells in the Third Bone Spring carb?

1:01:16
Same objection.

Chakalian, Gregory, EMNRD 1:01:19
That's overruled.
Please answer the question.

1:01:27
There is a different field of view between the 2 maps.

Shaheen, Sharon 1:01:34
Why didn't you include those wells in your analysis?

1:01:43
I must have interpreted him to be landed in different stratigraphic interval.

Shaheen, Sharon 1:01:49
Turning now to the next slide.
Let me make sure I'm going to the next slide.
Believe it's 158.
And this slide relates to the third bone sand.
3rd Bone spring sand correct.
Oops.

1:02:20
That's specifically the middle.
What I interpreted as the middle 3rd bone spring sand?

Shaheen, Sharon 1:02:27
And is this the well list you use to make a high risk determination for the third Bone spring sand?

1:02:36
Yes.

Shaheen, Sharon 1:02:38
And did you give this well list to the engineers to generate comicose type curves?

1:02:45
Objection same objection I made earlier.

Chakalian, Gregory, EMNRD 1:02:49
Outside the scope.

1:02:50
Yes outside the scope we're not talking about type curves.

Chakalian, Gregory, EMNRD 1:02:55
Jane.

Shaheen, Sharon 1:02:57
That's fine.
I'll move on.

Chakalian, Gregory, EMNRD 1:02:59
Thank you. Sustained.

Shaheen, Sharon 1:03:04
Again, you identify these wells as analogs.
And to what are these wells analogous?

1:03:12
Similar stratigraphic targeting.

Shaheen, Sharon 1:03:16
Similar stratigraphic targeting to what?

1:03:21

To the.
Mid 3rd bone springs sand wells that Tumblr proposed.

Shaheen, Sharon 1:03:30
And is the target interval the only way that these wells are analogous to the target? That Tumblr is drilling.

1:03:43
That is how I selected this wellest yes.

Shaheen, Sharon 1:03:50
Do you know what the thickness, porosity, lithology and structural depth of the queen robinwell is?

1:03:59
Not off the top of my head no.

Shaheen, Sharon 1:04:03
Do you know whether it's the same as that part of the Third Bone Spring sand that Tumblr proposes to target?
Do you know what the thickness, porosity, lithology and structural depth of the greeby well is?

1:04:22
No.

Shaheen, Sharon 1:04:23
Do you know whether it's the same as that portion of the third Bone Springs sand that Tumblr proposes to target?

1:04:33
No.

Shaheen, Sharon 1:04:35
And can I assume that your answers to those same questions would to those same

questions would be the same answers with respect to the Tatanka wells and the Judge Baylor wells?

1:04:47

Oh yes.

Shaheen, Sharon 1:04:50

Where similar rock properties used to establish this well list.

1:04:54

No.

Shaheen, Sharon 1:04:56

And in this particular well list, is there a certain distance that you use to select the wells?

1:05:04

I was trying to stay off the major GLA **** structures or features in the area so I believe this is once again roughly that 100 square mile distance.

Shaheen, Sharon 1:05:17

Did you use that distance to to limit the wells that you considered?

1:05:27

To stay away from major geologic structures.

Shaheen, Sharon 1:05:40

And here you've got we're looking again at your list.

Do you know that the mean green well was drilled in 2015?

1:05:51

I I do not know the specific date it was drilled.

Shaheen, Sharon 1:05:54

Are you aware that the mean green well is the oldest? Well on this list?

1:06:03
I guess I am now.

Shaheen, Sharon 1:06:06
Do do you know that the greevey calm? Well as a child?
Well, that was drilled four years after an under underlying Wolfcamp AWELL.

1:06:18
No.

Shaheen, Sharon 1:06:20
If you were to exclude the grey be well and the mean green well, what would be the range of six month cumulative production in this list of wells?

1:06:38
The range of 6 month cume per foot would be.
1416.24.
To agree.
Is it 6.98?
Yeah I believe that's right.

Shaheen, Sharon 1:07:09
The phrase mid third bone spring sand appears for the first time in your amended exhibit B5, doesn't it?

1:07:20
I believe so.

Shaheen, Sharon 1:07:23
That term doesn't appear in your written testimony or any prior marathon geologic exhibits, does it?

1:07:33

OK.

I guess not.

Shaheen, Sharon 1:07:35

There are no regional stratigraphic markers or tops.

Published by the Oil Conservation Division, defining a mid third bone spring sand are there.

1:07:46

There is not.

Shaheen, Sharon 1:07:47

You introduced that label solely for this October submission, is that right?

1:07:53

Yes.

Shaheen, Sharon 1:07:55

So it's your own interpretation, not an established geologic interval recognized by the division, correct?

1:08:04

It's where I interpreted Tumblr 's proposals in the 3rd bone spring sand.

Shaheen, Sharon 1:08:11

And what's the difference between the mid Third Bone spring sand and the lower?

And the lower third bone spring sand.

1:08:26

Oh that would be an internal correlation.

Shaheen, Sharon 1:08:30

So there's no and when you say internal internal to Conoco.

1:08:35
Yes.

Shaheen, Sharon 1:08:40
Is there a difference in porosity between the mid Third Bone spring sand and the mid third?
Sorry in the lower.
3rd Bone spring sand.

1:08:52
I would assume so.

Shaheen, Sharon 1:08:55
You would assume so. What would you base that assumption?

1:09:00
Logs I would look at the proxy logs.

Shaheen, Sharon 1:09:02
Have you looked at the porosity logs of each of these wells?

1:09:09
I doubt these wells have ferocity logs run on them unless it was case toll but I have not looked at them.

Shaheen, Sharon 1:09:15
Have you looked at any porosity logs?

1:09:16
If there?

Shaheen, Sharon 1:09:19
Porosity logs with respect to the mid Third Bone spring sand as you call it.

1:09:30
Yeah they're on that first page with the cross section and I think there's a will here.

Shaheen, Sharon 1:09:35
No. Have you?
I'm sorry. Have you looked at porosity with respect to these wells that you attribute as landing in the mid third bone sand?

1:09:52
Uh.
In these horizontals.

Shaheen, Sharon 1:10:00
In the wells that are identified on this list on Slide 158 of 292.

1:10:08
No I've not looked at the proxy logs of those wells.

Shaheen, Sharon 1:10:12
Have you looked?
Have you looked at porosity with respect to any wells in the lower?
3rd Bone spring sand.

1:10:25
No.

Shaheen, Sharon 1:10:27
Is there a frat barrier within the Third Bone Spring sand that separates the mid Third Bone spring sand from the remainder of the Third Bone Spring sand?

1:10:47
I don't believe so.
You're asking the lower to the mid.
3rd sand.

Shaheen, Sharon 1:10:54
I'm asking is there any frac barrier within the Third Bone Spring sand that separates the mid from the remainder of the formation?

1:11:09
I don't think so.

Shaheen, Sharon 1:11:13
You considered spud dates important in the other two slides, did you not?

1:11:19
I provided them yeah.

Shaheen, Sharon 1:11:21
Why did you omit those spud dates in this slide?

1:11:26
It was Aaron my part and I forgot to copy that column.

Shaheen, Sharon 1:11:32
Isn't it fair to say that your testimony is simply you don't know what reserves are in the Avalon or the third Bone Springs? Isn't that right?

1:11:40
Objection I think that misstates testimony.
And it's also.

Chakalian, Gregory, EMNRD 1:11:48
Miss. Miss Shaheen, would you ask that question differently, please?

Shaheen, Sharon 1:11:55
If I understand your testimony today.
You don't really know what reserves are in the Avalon, is that correct?

1:12:09
Do not have it quantified?

Shaheen, Sharon 1:12:12
And you don't know how to tie six month cumulative production.
To Eurs, right.
That's outside of your expertise.

1:12:24
That's correct.
I do not do any forecasting.

Shaheen, Sharon 1:12:27
And you don't know what reserves are in the third Bone spring, either correct?

1:12:34
Do not have a quantified?

Shaheen, Sharon 1:12:44
And you don't know whether six month production is how it relates to whether a well is economically viable, right?

1:13:00
I don't economics.

Shaheen, Sharon 1:13:05
Don't know how geologic parameters impact six month production.
Do you?

1:13:14
No I don't.
But I do interpret differences in geologic factors.

Shaheen, Sharon 1:13:23

But you don't know how geologic and parameters impact six month production with any kind of quantitative certainty, do you?

1:13:38

I mean if there's zero porosity then you have zero fluid available to be produced so I mean.

Shaheen, Sharon 1:13:48

Have you examined any wells that indicate there's zero porosity throughout these these three intervals?

1:13:56

No.

Shaheen, Sharon 1:13:59

OK, Mr. Examiner, I may be close to being done. If I could have just a couple minutes with my client, we may be able to wrap this up.

Chakalian, Gregory, EMNRD 1:14:09

OK.

Well, then, there's still gonna be questions from Mr. McClure and any redirect from Miss Hardy.

So maybe you'll mean wrap up your cross. Why don't we take a 5 minute break? And we'll come back on the record at 347. Thank you.

Shaheen, Sharon 1:14:21

That sounds good.

Thank you.

Chakalian, Gregory, EMNRD 1:23:47

All right.

Thank you.

It is 3:51 PM. We had a little break. Miss Shaheen, please continue.

Shaheen, Sharon 1:23:54

Thank you. I I think I have three, maybe four questions and then we'll be done.
So I'd like to share my screen again.
Turning to the log over here that you have.
Mr. Patrick.

1:24:19
Yes ma'am.

Shaheen, Sharon 1:24:20
Can you show me?
Where?
The third bone spring.
Sorry, can you show me where the mid third bone spring sand starts?

1:24:34
It's not on this log.

Shaheen, Sharon 1:24:38
Can you tell me what depth the mid third Bone spring sand starts?

1:24:47
No it would just only be an estimate.

Shaheen, Sharon 1:24:54
Where does it end? Do you know?

1:24:57
I'd have to be an estimate right now I don't have it plotted on this log.

Shaheen, Sharon 1:25:04
Are there any geologic parameters that relate specifically to the mid Third Bone Spring sand?

1:25:12
Correlation that we make and it's to help identify specific targeting for wellbors.

Shaheen, Sharon 1:25:21
There are more wells targeting the third Bone Springs sand.
Than you've depicted on your map. Is that right?

1:25:32
Yes that's a larger interval than where the wells were specifically being proposed.

Shaheen, Sharon 1:25:37
And you know how thick that mid third bone Spring interval is?

1:25:45
No I do not have a plot on the lock.

Shaheen, Sharon 1:25:51
Those are all of my questions.
Thank you very much, Mr. Patrick.

1:25:55
Yes ma'am.

Chakalian, Gregory, EMNRD 1:25:55
Shaheen, Mr. McClure.

McClure, Dean, EMNRD 1:25:58
Thank you, Mr. Herring. Examiner, Mr. Patrick.
Can I draw your attention to your third Bone Spring slide if we could share that, Miss Hardy?

1:26:11
Let me pull that up.
The.
This one Mister McClure or the.

McClure, Dean, EMNRD 1:26:32

The sand. The next one, yeah.
Oh, it should be the last of the slides, I believe.

1:26:36
This one.
OK 158.

McClure, Dean, EMNRD 1:26:38
Yeah, there you go.
Thank you, Miss Hardy and Mr. Patrick, do you see what we're looking at on the screen there?

1:26:45
Yes Sir.

McClure, Dean, EMNRD 1:26:48
OK. So I mean this kind of covers some, I guess.
What miss Shaheen's questions were, but just to summarize and make sure I'm on the same page, is it accurate to say that the small map does not include all wells within the Third Bone spring sand?

1:27:09
So that's correct.

McClure, Dean, EMNRD 1:27:20
Summarize.
Maybe what marathon's position is here.
Is it accurate to say that what went into producing these exhibits is that you identified the wells within the target formation like specifically here the Third Bone Spring?
And then you just.
Include it all the wells within a certain radius.
In your table, is that correct?

1:27:54

I refined the Wellness down specifically on where they were targeting within the formation so I was only looking for wells that were landed close to the middle point of the 3rd bone spring sand and not wells that were drilled almost on the interface or drills wells that were.
Just below the second bone spring sand.
So I was trying to specifically hone in on specific targeting even refiner than just what formation.

McClure, Dean, EMNRD 1:28:24
Is that accurate for the third Bone spring carbonate?

1:28:28
Yes Sir.

McClure, Dean, EMNRD 1:28:30
OK.
For the third Bone Spring sand, why did you select the middle of the third Bone spring sand?

1:28:40
That was where I correlated Tumblr 's proposed development.

McClure, Dean, EMNRD 1:28:58
OK, then is it accurate to? Is it accurate to say?
That high risk.
Is determined based upon the echarmonic variables involved.
Actually, let me rephrase that.
Is it accurate to say that marathon's considering it high risk if there's a concern they may not make back their initial investment from production from the boil?

1:29:31
We're determining this is high risk due to the uncertainty around the lack of data.
In the area.
Production data that we could tie back to expected performance.

McClure, Dean, EMNRD 1:29:53
On this slide here is it not correct that you identified?
Eight. Well, that looks like that you're drawing data from.

1:30:09
Believe so.

McClure, Dean, EMNRD 1:30:16
Does marathon not produce a for?
Does marathon not complete into a formation unless there's greater than 8 wells in the area showing production?

1:30:34
I don't know specifically.
I don't think there's a specific cut off on.
A number of wells that we would then produce or drill a well in that area.
Or zone.

McClure, Dean, EMNRD 1:30:57
Isn't your testimony is that?
Those zones are high risk.
But you don't know what the cutoff is for that. I mean, how did you make the determination that's high risk, I guess.

1:31:12
I'd be the geologic variability that we see in the logs and then the lack of or the the minimal production data that we can tie back to those.
Specific targets.

McClure, Dean, EMNRD 1:31:28
Well beyond giving us the cross section isn't the only data you gave us. Was these production numbers.

1:31:37
Yes Sir.

McClure, Dean, EMNRD 1:31:41
So are you.
It was marathon making the determination.
Reduction numbers.

1:31:50
But you you cut out for a second.
Could you repeat that?

McClure, Dean, EMNRD 1:31:54
Is it accurate to say that Marathon made its high risk determination based off of these production numbers?

1:32:10
These production numbers were provided to show the variability.
That we see in the in this interval based on the specific targeting that I identified.
That goes into the variability increases uncertainty.
So then we apply a risk to it.

McClure, Dean, EMNRD 1:32:41
All right. So then Marathon made a high risk determination.
Because it doesn't know how much oil it it would produce if it drilled these wells. Is that accurate?

1:32:56
That's accurate.
Yes Sir.

McClure, Dean, EMNRD 1:32:59
How many barrels per within the six months?
With a well need to produce for Marathon 2, drill a well.

1:33:11

I.

I.

I wouldn't know specifically.

McClure, Dean, EMNRD 1:33:18

Know what value you're looking for.

How are you able to make the determination, I guess?

1:33:31

That it's high risk.

McClure, Dean, EMNRD 1:33:33

Correct.

1:33:37

I think that would be more of the lack of data that we have.

We and then once we once more data is collected then we could consider it derisked and then we would have the opportunity to come back and develop those intervals.

McClure, Dean, EMNRD 1:33:58

And earlier, M's Hardy asked you a question specifically about this third Bone Spring sand.

She asked you if Marathon would be able to come back and complete this zone at a later time.

Do you recall that question?

1:34:13

Yes Sir.

McClure, Dean, EMNRD 1:34:15

And your response was that marathon could come back at a later time and complete this zone.

Is that correct?

1:34:22
Yes Sir.

McClure, Dean, EMNRD 1:34:24
What were you basing that determination off of?

1:34:29
Acquiring more data and de risking this interval.

McClure, Dean, EMNRD 1:34:36
Did you take into account the existence of Wolfcamp A wells in the area?

1:34:47
We would in the analysis.

McClure, Dean, EMNRD 1:34:52
In your response to M's Hardy, that marathon could come back and complete the Bone Spring 3 sand at a later time.
Did you take into account that marathon would also have wells within the Wolfcamp A at that time?

1:35:09
We would factor that into our evaluation yes Sir.

McClure, Dean, EMNRD 1:35:13
Yeah, I understand that marathon would factor that in at later point.
Did you factor it in currently in your current response that Yes, Marathon can go back and produce it.

1:35:36
Did I factor?

McClure, Dean, EMNRD 1:35:41
Yes, you came to. Do you want me to re ask the question, Mr. Patrick?

1:35:44

Yes I just I don't quite understand.

McClure, Dean, EMNRD 1:35:47

OK, you made an affirmative statement.

That marathon could come back in at a later point and place wells in the Third Bone Spring sand, correct?

1:36:01

Yes Sir.

McClure, Dean, EMNRD 1:36:03

Now, in this hypothetical future where marathon determines it is economically viable to put in wells, were you considering the fact that Wolfcamp A wells would likely be already producing at that point?

1:36:20

Yes Sir.

McClure, Dean, EMNRD 1:36:31

Familiar with.

Completions of wells.

1:36:39

Yes Sir.

McClure, Dean, EMNRD 1:36:45

And you considered the vertical height difference between the Wolfcamp A and wells within the Bone Spring 3 sand and frack barriers associated in between?

1:36:59

Yes Sir we would put a degradation on that.

McClure, Dean, EMNRD 1:37:05

You referenced we but.
Are you referencing your own testimony or somebody else with that, I guess.

1:37:14
I'm referencing workflows.
I've worked with my team on other projects but.
Not specifically by testimony.

McClure, Dean, EMNRD 1:37:37
No, no further questions.
Thank you, Mr. Patrick. Thank you, Mr. Herring examiner.

1:37:41
Yes Sir.

Chakalian, Gregory, EMNRD 1:37:41
Thank you, Mr. McClure, miss Hardy.

1:37:45
Yes thank you.
I do have some questions.
Mister Patrick.
When miss Shaheen was questioning you earlier you testified that these slides?
And I'm referring to.
Pages 156 through 158.
Of the PDF that you selected these wells based on stratigraphic targeting correct.
Yes ma'am.
OK and can you explain what that means.
It would be based on where these wells are landed compared to where the wells are being proposed and then most of my or my tops in this example are or lithostratographic tops and so it take into consideration the log parameters.
For the interval.
It in your experience as an asset geologist is that a reasonable and reliable way to evaluate risk of a geologic interval.
Yes.

Why?
Using lithostatographic correlations means you should be in similar reservoirs but we still understand that there is variability inside those reservoirs.
And michi.
He asked you a number of questions about whether you looked at lithology thickness and porosity for each well listed on your slides.
Do you recall those questions?
Yes Sir.
Well first of all are there logs available for each of these wells.
Most likely not.
And did you need to look at the lithology thickness and porosity for each individual.
Well to make an assessment of geological risk of the zone.
No we look at offset logs and then we interpret and make maps.
To assume what the reservoir porosities thickness lithologies will be for those wells.
OK.
And is that what you've done here.
Yes that's what I did.
And in your cross section here the first page of supplemental exhibit B 5.
Is that what you were showing with this cross section?
Yes ma'am.
So based on your analysis the wells on the cross section are representative of what you believe would be what is shown in the geology in this area.
And with respect to the the 2 different maps that are shown here on on each slide.
Can you just explain so it's clear what the differences is are and what you're showing?
Of the small map in the bottom right.
Was just a courtesy that I put on the slide so that you could put the will name to the specific well?
And are the wells listed in your slides based on your geological analysis the best available analogs that you have to evaluate risk in these zones.
They are the best representation of wells that were drilled in the same stratigraphic interval.
And within a certain.
Within a certain distance from the wells here right.
Yes I was trying to stay away from some of the major geologic differences.
And.

So I think you mentioned earlier 100 square miles but if you're looking at a radius from the wells here the Goliath proposed wells approximately what's the mileage radius for these analogs that you were using.
123 looks like roughly 5 miles.
And was that.
In your analysis in your opinion the best distance to use to address geologically similar areas.
It kept us away from some major features in the area.
We have the center basin platform that influences.
The reservoirs to the east if we go to the West we have the depo center of the Delaware basin.
OK.
So I was trying to keep it out of some of these major.
Differences.
And you know similar as you go north.
We have the antelope bridge so and some major faulting so I was trying to keep it to a more constrained radius.
Get further out than say 10 miles.
Does the geology change?
It does.
And so that's part of the reason you use these wells is that correct.
That went into my analysis Yep.
And I think several times you mentioned a lack of data.
Does that impact the risk assessment?
It increases our uncertainty which increases our risk and our interpretation.
And.
Is the lack of data more prevalent in some zones here than others?
Yes.
In which which zones primarily are subject to a lack of data.
We would consider the 3rd bone spring carb.
Having very limited data and also the 3rd bone spring sand.
Urinalysis that creates risk.
That creates risk yes.
And then in the Avalon is there a lack of data or is it a variability variability issue.
We think the reservoir variability.

From the existing approved develop producing wells to where the Goliath project is is significant.
So we have wells that are landed stratigraphically similar but we do see a variability in the reservoir quality.
And that's specifically within this radius shown on your map on slide 156 right.
Yes.
And that's about a 5 mile radius.
Thank you I think those are all of my questions.

CE **Chakalian, Gregory, EMNRD** 1:44:42
Thank you, miss Shaheen.
Is there any additional cross on those questions?

SS **Shaheen, Sharon** 1:44:53
Thank you, Mr. Examiner.
I believe we only have one question M's Hardy was asking Mr. Patrick about the lack of data.
And so my question is, is that a lack of data with respect to production data or a lack of data with respect to well logs?

1:45:09
That's focused on production data.

SS **Shaheen, Sharon** 1:45:12
Thank you.

CE **Chakalian, Gregory, EMNRD** 1:45:14
Mr. McClure, any follow up cross on on the redirect?

ME **McClure, Dean, EMNRD** 1:45:19
No, Mr. Examiner, I do not.

CE **Chakalian, Gregory, EMNRD** 1:45:21
All right, perfect.
This witness may be excused.

Thank you, Mr. Patrick.
Miss Shaheen, do you have a witness?

Shaheen, Sharon 1:45:30
We do not.

Chakalian, Gregory, EMNRD 1:45:31
OK, alright, Miss Shaheen, you had made an objection. I don't think we've resolved your objection.

Shaheen, Sharon 1:45:39
I.
I believe we're willing to stand down on that. Objection.

Chakalian, Gregory, EMNRD 1:45:43
OK. And thank you. Based on the research I had done, the these exhibits fall squarely within the expertise of a geologist and don't creep into a reservoir engineer. We will give these exhibits the way we think they deserve, M's Hardy.
I believe that resolves the only issue that was really before.
The division. Is there anything else, Miss Hardy?

1:46:13
No I don't believe so.
I think we were going to submit after this hearing.
And the revised statement of Mister Miller.
Statement of Mister Miller to delete those paragraphs that michahean objected to that you had ruled should be excluded.
So we need to do that and we will.

Chakalian, Gregory, EMNRD 1:46:34
OK.
OK. And so you'll when when can you do that?

1:46:42
We can do that by the end of the week.

Chakalian, Gregory, EMNRD 1:46:44
OK, excellent.
And then we have to come up with a new deadline for closing arguments.

1:46:52
Yes.

Chakalian, Gregory, EMNRD 1:46:54
So, Miss Hardy, we're we're talking to you right now.
So what's good for you?

1:46:59
I I would propose well are we.
Will there be a transcript or are we having an AI transcript?

Chakalian, Gregory, EMNRD 1:47:06
There will be an AI transcript for today's hearing, yes.

1:47:11
And do we know when that will be available.

Chakalian, Gregory, EMNRD 1:47:14
Immediately. I mean it's it's within an hour.

1:47:16
OK OK.

Chakalian, Gregory, EMNRD 1:47:16
We get it. We'll post it.
And I think Freya will also post the YouTube video too.
Freya, have I said anything that's incorrect?

Tschantz, Freya, EMNRD 1:47:26

No. The transcript takes about an hour to download, so I'll probably do it tomorrow and I'll post the recording of today's hearing to YouTube probably tomorrow.

Chakalian, Gregory, EMNRD 1:47:36
Perfect. Let me just remind the parties that the official transcript of today's hearing is the recording.
It is not the AI transcript.
It makes mistakes, but you can certainly use the transcript to find the place, like a log note. OK.

1:47:54
Right OK.

Chakalian, Gregory, EMNRD 1:47:56
When so, does that help inform you on the closing argument question?

1:48:00
Yes you know if we could have if we could have 2 weeks from today until November 5th.

Chakalian, Gregory, EMNRD 1:48:06
OK, miss. Miss Shaheen, are you?
Are you OK with that?

Shaheen, Sharon 1:48:11
That works for me.

Chakalian, Gregory, EMNRD 1:48:12
Excellent, excellent.
Now machine we have a we spoke about the revised exhibit from Miss Miss Hardy to be submitted by Friday.
Close of business.
Are there any other issues that you have?

Shaheen, Sharon 1:48:27
Not that I can think of at the moment.

Chakalian, Gregory, EMNRD 1:48:29
All right. Excellent.
Well, Mr. McClure, is there anything I'm missing?

McClure, Dean, EMNRD 1:48:34
Nothing from me, Mr. herring examiner.

Chakalian, Gregory, EMNRD 1:48:37
All right.
Thank you.
All right.
Thank you, Freya.
And we're off the record.
Everyone have a good day.

Shaheen, Sharon 1:48:43
Bye everyone.

Chakalian, Gregory, EMNRD 1:48:44
Bye.

Shaheen, Sharon 1:48:46
Awesome.

Tschantz, Freya, EMNRD stopped trans