

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

STATE OIL AND GAS BOARD OF ALABAMA

Tuscaloosa, Alabama

September 10, 2013

Testimony and proceedings before the Hearing Officer  
in Regular Session in the Board Room of the State Oil and  
Gas Board Building, University of Alabama Campus,  
Tuscaloosa, Alabama, pursuant to adjournment, on this 10th  
day of September, 2013.

ORIGINAL

BEFORE

Mr. Marvin Rogers.....Attorney

STAFF

Dr. Berry H. (Nick) Tew, Jr.....Secretary and  
Supervisor

Dr. David E. Bolin.....Deputy Director

Ms. April Merritt.....Hearing Administration

10/24/13  
~~JHO~~  
MR  
10/24/13

1	I N D E X	
2	INDEX OF EXAMINATION	
	Witnesses	Page:
3	ROBERT WOOD	
	(ITEMS 10 & 11) DIRECT EXAMINATION BY MR. TYRA	9
4	KEN HANBY	
	(ITEMS 10 & 11) DIRECT EXAMINATION BY MR. TYRA	17
5	DAVID HIGGINBOTHAM	
	(ITEM 12) DIRECT EXAMINATION BY MR. WATSON	21
6	DAVID SKIDMORE	
	(ITEM 13) DIRECT EXAMINATION BY MR. WATSON	32
7	STEVE HALE	
	(ITEM 13) DIRECT EXAMINATION BY MR. TYRA	43
8	JOHN ROSS	
	(ITEM 16) DIRECT EXAMINATION BY MR. COLEMAN	52
9	INDEX OF EXHIBITS OFFERED	
10	(Items 10 & 11) Affidavit of Notice was offered	6
	(Items 10 & 11) Affidavit of Confidentiality was	7
11	offered	
	(Items 10 & 11) Exhibits 1-13 were offered	18
12	(Item 12) Exhibits 1-7 were offered	27
	(Item 13) Exhibits 1-5 were offered	39
13	(Item 15) Affidavit of Notice was offered	44
	(Item 15) Exhibits 1-6 were offered	49
14	(Item 16) affidavit of ownership of lease hold	51
15	and drilling rights, amended affidavit, and Affidavit of Notice were offered	
16	RECEIVED	
	(Items 10 & 11) Affidavit of Notice was received	6
17	(Items 10 & 11) Affidavit of Confidentiality was	7
	received	
18	(Items 10 & 11) Exhibits 1-13, A & B were	19
	received	
19	(Item 12) Affidavit of Notice was received	20
	(Item 12) Exhibits 1-7 were received	27
20	(Item 12) Affidavit of Notice was received	28
	(Item 13) Exhibits 1-5 were received	39
21	(Item 15) Affidavit of Notice was received	44
	(Item 15) Affidavit of Confidentiality was	46
22	received	
	(Item 15, Exhibits 1-6, A and B were received	49
23	(Item 16) affidavit of ownership of lease hold	51
	and drilling rights, amended affidavit, and	
24	Affidavit of Notice were received	
25		

1 (The hearing is in session at 10:00 a.m.)

2 MR. ROGERS: Let the record reflect that it's  
3 10:00 a.m. The hearing is in session. Dr. Tew, have the  
4 items for the September 10th and September 12th, 2013,  
5 meetings been properly noticed?

6 DR. TEW: The items for the September 10th and  
7 September 12th, 2013 docket have been properly noticed and  
8 the docket is due to be admitted into the record.

9 MR. ROGERS: The Board's Staff have received and  
10 compiled the proofs of publication for the items appearing  
11 on the docket for the first time. The proofs of publication  
12 received for the items on the September 10 and September 12,  
13 2013, docket are admitted into the record.

14 Furthermore, copies of the information posted  
15 on the web site of the Alabama Secretary of State announcing  
16 these two meetings of the Oil and Gas Board on September 10  
17 and September 12, 2013, and a confirmation of successful  
18 postings from the Secretary of State's office are also  
19 admitted into the record.

20 I have an order of the State Oil and Gas Board  
21 appointing me as Hearing Officer to conduct this hearing on  
22 behalf of the Board. The order will be made a part of the  
23 record at this time.

24 DR. TEW: Before we get started, Mr. Rogers, I  
25 want to go ahead and apologize to everyone, I have to duck

1 out around 10:30 to be on another call, or a call, so Dr.  
2 Bolin will take over for me at that time.

3 MR. ROGERS: And, Dr. Tew, the Staff and I were  
4 just talking with Ms. Merritt that the regulations that  
5 address hydraulic fracturing, we have two different  
6 regulations, one with coal bed and one with just the general  
7 oil and gas regulations, those rules and regulations go into  
8 effect today.

9 The procedure for this meeting is as follows:  
10 The Hearing Officer and the Staff will hear the uncontested  
11 items on the docket today and certain other items. The  
12 State Oil and Gas Board will hear the recommendations of the  
13 Hearing Officer, the contested items, and certain other  
14 items beginning at 10:00 on Thursday, September 12, 2013,  
15 here in the office of the State Oil and Gas Board in  
16 Tuscaloosa.

17 I will recommend that the following petitions  
18 be dismissed without prejudice: Item 1, Docket No.  
19 12-11-12-01, petition by Sklar Exploration Company, LLC;  
20 Item 2, Docket No. 6-18-13-04, petition by Escambia  
21 Operating Company, LLC; and Item 14, Docket No. 9-10-13-08A,  
22 petition by Sklar Exploration Company, L.L.C.

23 I will recommend that the following petitions  
24 be continued: Item 3, Docket No. 6-18-13-12, petition by  
25 Cinco NRG, LLC; Item 4, Docket No. 7-30-13-10, petition by

1 Black Warrior Methane Corporation; Item 7, Docket No.  
2 9-10-13-01, petition by Durango Operating, LLC; Item 8,  
3 Docket No. 9-10-13-02, petition by Durango; and Item 9,  
4 Docket No. 9-10-13-03, petition by Durango.

5 The following matters are set for hearing by  
6 the Board at the hearing on Thursday: Item 5, Docket No.  
7 8-14-13-01, petition by Ram Petroleum, LLC; Item 6, Docket  
8 No. 8-14-13-02A, petition by Ram Petroleum, LLC; Item 17,  
9 Docket No. 7-20-10-07, a motion by the Board to show cause  
10 why certain wells operated by S. Lavon Evans, Jr. Operating  
11 should not be ordered plugged and abandoned.

12 Any corrections or comments on those  
13 recommendations?

14 (No corrections or comments.)

15 MR. ROGERS: All right. We will start with the  
16 first petition for today: Item 10, Docket No. 9-10-13-04A,  
17 petition by Venture Oil & Gas, Incorporated.

18 MR. TYRA: Mr. Rogers, I have two witnesses to  
19 be sworn in, please.

20 MR. ROGERS: State your name.

21 MR. WOOD: Robert Wood, Tuscaloosa, Alabama.

22 MR. HANBY: Ken Hanby, Tuscaloosa, Alabama.

23 (The Hearing Officer swears in the witnesses.)

24 MR. TYRA: Mr. Rogers, I'm John Tyra here on  
25 behalf of Venture Oil & Gas, Inc. I would like to

1 consolidate, if you would, Items 10 and 11 on the docket.

2 MR. ROGERS: That request is granted.

3 MR. TYRA: All right, sir. Our Item Number 10,  
4 Docket 9-10-13-04 is a request to establish a new gas field  
5 in Monroe County, Alabama. We are suggesting the name of  
6 the Northwest Goodway Field and we are asking that Special  
7 Field Rules be adopted for it. We are asking the field  
8 limits consist of 160 acres to be the North Half of the  
9 Northwest Quarter of Section 14 and the South Half of the  
10 Southwest Quarter of Section 11, all in Township 4 North,  
11 Range 6 East, in Monroe County, Alabama.

12 Docket No. 9-10-13-05 is a request that the  
13 40-acre drilling unit for the Marion Johnson 14-3 No. 1 Well  
14 which is the discovery well for this field be reformed to a  
15 160-acre producing unit, which will be the same unit as the  
16 proposed field limits.

17 I have previously filed an Affidavit of Notice  
18 in this matter -- in both of these matters and would ask  
19 that they be made a part of the record, please.

20 (Whereupon, (Items 10 & 11) Affidavit of  
21 Notice was offered into evidence.)

22 MR. ROGERS: They are admitted.

23 (Whereupon, (Items 10 & 11) Affidavit of  
24 Notice was received into evidence.)

25 MR. ROGERS: Why don't you describe who you

1 notified?

2 MR. TYRA: All right, sir. Pursuant to the  
3 rules of the State Oil and Gas Board, we gave notice to all  
4 of the owners in the proposed unit, the North Half of the  
5 Northwest Quarter of Section 14 and the South Half of the  
6 Southwest Quarter of Section 11, Township 4 North, Range 6  
7 East. And then at the direction of the Board, we also gave  
8 notice to all the owners in the South Half of the Northwest  
9 Quarter of Section 14 inasmuch as that would have been a  
10 regular governmental unit of the Northwest Quarter.

11 So in effect, we gave notice to everyone in the  
12 Northwest Quarter of Section 14 and in the South Half of the  
13 Southwest Quarter of Section 11.

14 MR. ROGERS: That affidavit is admitted.

15 MR. TYRA: Also, we have pre-filed an Affidavit  
16 of Confidentiality. We have Exhibits 4, 5 and 6 that would  
17 be considered confidential, and we ask that this proprietary  
18 information be held in confidence and collected at the end  
19 of the hearing.

20 (Whereupon, (Items 10 & 11) Affidavit of  
21 Confidentiality was offered into evidence.)

22 MR. ROGERS: The Affidavit of Confidentiality is  
23 admitted and these exhibits that you named are designated to  
24 be proprietary and unavailable for public disclosure.

25 (Whereupon, (Items 10 & 11) Affidavit of

1 Confidentiality was received into evidence.)

2 MR. TYRA: All right. I will start with my two  
3 witnesses. Mr. Wood, I'll start with you first. If you  
4 would, tell your name again to the Board.

5 MR. WOOD: Robert Wood.

6 MR. TYRA: And have you testified before this  
7 board on numerous occasions?

8 MR. WOOD: I have.

9 MR. TYRA: And your Affidavit of Qualifications  
10 is on file with the Board?

11 MR. WOOD: It is.

12 MR. TYRA: Are you familiar with the allegations  
13 that we have made in the two petitions concerning the  
14 matters to be addressed this morning?

15 MR. WOOD: Yes, I have.

16 MR. TYRA: And have you prepared exhibits in  
17 support of those?

18 MR. WOOD: I have.

19 MR. TYRA: All right, sir.

20

21 ROBERT WOOD,  
22 having been first duly sworn, was examined and testified  
23 as follows:

24

25

1 (ITEMS 10 & 11) DIRECT EXAMINATION BY MR. TYRA:

2 Q. Let's turn to your exhibits then, your first exhibit.

3 And if you would, explain what that shows?

4 MR. ROGERS: We will just note that he is  
5 recognized as an expert.

6 MR. TYRA: Thank you.

7 A. Yes. Exhibit Number 1 is simply a location map  
8 showing the location of this discovery in Southwest Alabama.  
9 It's located in the southern portion of Monroe County and  
10 it's a few miles North of the Old Vocation Field. We are  
11 proposing today to call this the Northwest Goodway Field.

12 Q. All right. And your area map?

13 A. Yes. The area map shows the location of the  
14 discovery well, which is a Marion Johnson 14-3 No. 1 Well.  
15 It was drilled by Venture Oil & Gas, State Permit Number  
16 16816-B. It was directionally drilled to a bottomhole  
17 location that is to the Southwest of the surface location.  
18 The well was originally drilled on a 40-acre drilling unit  
19 which is shown on this exhibit today. We are proposing to  
20 reform that drilling unit to a 160-acre production unit  
21 consisting of the North Half of the Northwest Quarter and the  
22 South Half of the Southwest Quarter -- well, the North Half  
23 of the Northwest Quarter of Section 14 and the South Half of  
24 the Southwest Quarter of Section 11.

25 This is a gas condensate discovery. The normal

1 spacing for a Smackover of this depth would be 640-acre  
2 spacing, but this productive area will be shown to be  
3 contained within this proposed production unit, and we are  
4 asking today for 160-acre production unit. This is located  
5 in Township 4 North, Range 6 East of Monroe County.

6 Q. Okay. Look at your Exhibit 3.

7 A. Exhibit Number 3 is a structure map based on the top  
8 of the Smackover formation. The proposed Northwest Goodway  
9 Field is shown highlighted in yellow and red and this is for  
10 the discovery well, the Marion Johnson 14-3 No. 1 Well, which  
11 is shown with a red circle.

12 The well was drilled, as I said before, as a  
13 directionally drilled well. It was an exceptional location  
14 on a 40-acre drilling unit. The exceptional location was  
15 approved by affidavit by the Board, and the bottomhole  
16 location is shown with the blue circle to the Southwest of  
17 the surface location. The datum for this map is subsea true  
18 vertical depth based on the drilling information of the wells  
19 that are shown on this exhibit.

20 As you can see, the top of the Smackover was  
21 found in this discovery well at 13,551 feet subsea true  
22 vertical depth. Also used for constructing this structure  
23 map is the 3D seismic information which will be subject to  
24 the next three exhibits. The contour spacing for this  
25 structure map is 50 feet and it shows an anticline structural

1 closure and that structural closure is split between areas of  
2 two governmental sections.

3 As you can see, the discovery well was drilled  
4 in the Northwest Quarter of Section 14 in the structure to a  
5 closing contour of 13,625 feet which is the lowest possible  
6 gas or the spill point of this structural closure, is what we  
7 are showing today.

8 The gas that was found we'll show the subsequent  
9 exhibits occurred in the top of the Smackover, that is the  
10 same stratigraphic interval as the Goodway Field to the  
11 Southeast of this discovery well, but the Goodway Field  
12 occurs structurally higher and has a gas/water contact in  
13 that field. This discovery was entirely -- the elevation was  
14 below the accumulations that is in the Goodway Field so this  
15 is a separate and distinct structure, separate and distinct  
16 accumulation. Also shown on this exhibit is the Northeast  
17 Goodway Field. It was also a Venture Oil & Gas discovery and  
18 that is an oil production from lower in the Smackover is what  
19 we have referred to as middle Smackover, and that is that  
20 area shown based on -- identical to previous exhibits that I  
21 submitted for that discovery well and establishment of the  
22 Northeast Goodway Field.

23 Q. Thank you, sir.

24 A. I would also like to point out cross-section A - A'  
25 which is the subject of Exhibit 7, but, first, we will look

1 at the seismic exhibits which will be in the other exhibit  
2 booklet that Mr. Tyra handed you.

3 Exhibit Number 4 is the seismic data map showing  
4 the 3D grid that the seismic for these discoveries was shot  
5 on. The traces are over on the left. They are East/West  
6 trending traces and the appropriate number for the grid is  
7 shown. The lines are North/South lines and are shown across  
8 the bottom of the map. The structure that you see on this  
9 exhibit is identical to the structure map or Exhibit Number  
10 3. And also shown on this exhibit are two ARB lines which  
11 are the subjects of the next two exhibits, ARB line one and  
12 ARB line two. And this basically locates the wells, ties the  
13 seismic information and the ARB lines together.

14 Q. All right, sir. Look at that ARB line one.

15 A. Exhibit Number 5 is ARB line one. I would like to  
16 point out that on this exhibit North is to the right and  
17 South is to the left. The appropriate lines and traces are  
18 shown across the top of the seismic display here. This is a  
19 line that runs due North and due South, it's all along line  
20 1759. And then as it changes and crosses other traces, those  
21 are shown across the display.

22 Also shown over on the left-hand portion of this  
23 seismic display in time along the left-hand margin -- this  
24 display is in time. The location of the Venture Oil & Gas  
25 Marion Johnson 14-3 No. 1 Well is shown and you can see the

1 wellbore path for the directionally drilled well as it  
2 deviates along this line towards the South. It encountered  
3 the top of the Smackover which is labeled in blue and a  
4 mapping horizon is also shown in the pink color.

5 This shows a configuration on top of the  
6 Smackover which is limited to the area of the proposed unit.  
7 The proposed unit boundaries were shown in the red and white  
8 dashed lines, vertical lines, and this shows the structural  
9 closure with steep dip to the South in a more subtle  
10 structural saddle to the North, and that corresponds with the  
11 time depth conversions to the spill point that was shown on  
12 Exhibit 3.

13 Q. All right, sir. Your second ARB line?

14 A. Yes, if you would note that ARB line two is a --  
15 North on this display is to the left. This actually trends a  
16 little bit North to Northwest to the South/Southeast. I  
17 added this ARB line because it extends through the Goodway  
18 Field and the Coffin Well which was also a gas condensate  
19 discovery in the Goodway Field, and the relation of this  
20 proposed Northwest Goodway structure is evident as being a  
21 separate and distinct structure.

22 All the other attributes of the seismic display  
23 that I'm showing here are identical to the previous exhibit.  
24 It does show the relationship of some other dry holes that  
25 were drilled before this seismic 3D was shot, including the

1 White 14-7 No. 1 Well which is between this current discovery  
2 well and the Coffin 14-10 Well.

3 Q. Thank you. Go back to our regular exhibit book,  
4 please, and Exhibit 7?

5 A. Yes, Exhibit Number 7 is the structural cross-section  
6 that parallels the previous exhibit. The ARB line extends  
7 from the left to the Northwest to the Southeast on the right.  
8 It goes through the proposed Northwest Goodway Field, the new  
9 discovery, and it shows the relationship to the offset  
10 Goodway Field. The Goodway Field is the Coffin Well 14-10  
11 and I am showing the structural closure and I have  
12 highlighted with blue dashed lines in the Goodway Field a  
13 gas/water contact of 13,555. That was taken from Mr. Cox's  
14 exhibit for Docket No. 6-20-11-05 and I believe that that  
15 was taken from the White 14-7 Well which can be seen between  
16 these two, and as you can see is evident the Northwest  
17 Goodway Field at the discovery in the Johnson Well occurs at  
18 a lower structural position than the gas/water contact in the  
19 Goodway. These are separate, distinct fields with a saddle  
20 in between, and so they are separate. And the subsea true  
21 vertical depth of the accumulation in the Johnson 14-3 is  
22 shown that it is appropriate subsea depth of 13,568 feet  
23 subsea true vertical depth, as is the lowest possible gas  
24 accumulation of 13,625 which would be the limits of this  
25 reservoir.

1                   Exhibit Number 8 is Net Pay Isopach Map for the  
2                   Smackover Oil Pool for the proposed Northwest Goodway Field.  
3                   The zero line is the 13,625-foot structural closure, and what  
4                   I am depicting here is -- a contour is ten feet which is --  
5                   represents ten feet above that zero line. The datum for this  
6                   map is the structure map, and also the 12 feet of greater --  
7                   six percent or greater porosity net pay that occurred in the  
8                   discovery well, and this is a net pay isopach map for this  
9                   new field discovery.

10                   If you would turn to Exhibit Number 9, which is  
11                   the type log for definition of the Smackover Gas Pool in the  
12                   Northwest Goodway Field. This is using the discovery well  
13                   type log, which is a platform express/array induction/gamma  
14                   ray/thermal neutron/density/Delta T/PE are all displayed on  
15                   this type log.

16                   The top of the Smackover Gas Pool is defined at  
17                   13,969 feet measured depth to a base of the Smackover Gas  
18                   Pool at 14,012 feet measured depth in this same well.

19                   Q.           And your last exhibit?

20                   A.           Last exhibit is Number 10, which is the survey plat  
21                   prepared by Engineering Service, Incorporated showing the  
22                   original drilling unit.

23                   Today, we are proposing to reform that drilling  
24                   unit to a production unit consisting of the North Half of the  
25                   Southwest Quarter and the South Half of the Southwest Quarter

1 of the two respective sections. The bottomhole location  
2 would occur at 878 feet from the South line and 1,078 feet  
3 from the West line -- I'm sorry, from the East line, and so  
4 there is no exceptional location, but this is an irregular  
5 split unit as the structure was discovered crossing the  
6 section line.

7 Q. Thank you. In your opinion, would the granting of  
8 the petition prevent waste and protect correlative rights?

9 A. Yes, it will.

10 Q. Thank you.

11 MR. TYRA: Mr. Hanby, I'll ask you the same  
12 question I have asked Mr. Wood. Have you previously  
13 testified before this Board?

14 MR. HANBY: Yes, sir, I have.

15 MR. TYRA: As a petroleum engineer; is that  
16 correct?

17 MR. HANBY: Yes, sir.

18 MR. TYRA: And your affidavit of qualifications  
19 is on file; is that correct?

20 MR. HANBY: It is.

21 MR. TYRA: Are you familiar with the allegations  
22 of the petitions that were filed in this matter?

23 MR. HANBY: Yes, sir.

24 MR. TYRA: And have you prepared exhibits in  
25 support of those allegations as well?

1 MR. HANBY: Yes, sir, I have.

2 MR. TYRA: I would ask that Mr. Hanby be  
3 recognized as an expert petroleum engineer.

4 MR. ROGERS: He is so recognized.

5

6 KEN HANBY,

7 having been first duly sworn, was examined and testified  
8 as follows:

9

10 (ITEMS 10 & 11) DIRECT EXAMINATION BY MR. TYRA:

11 Q. Mr. Hanby, if you will, turn to your OGB-9 which is  
12 Exhibit 11 and tell us what this shows.

13 A. Exhibit 11 is a copy of the form OGB-9 filed on the  
14 first production test and I have highlighted certain things  
15 on there, including the operator and the well name. The well  
16 was perforated from 13,970 to 13,990 feet and was initially  
17 tested on July 30th of 2013 for a 24-hour period. You will  
18 see the flow rates have produced at 925 Mcf of gas per day,  
19 232 barrels of condensate with a flowing tubing pressure of  
20 1,992 psi, exhibiting a gas/liquid ratio of 3,987.

21 Q. Okay, sir. And then your PVT test on Exhibit 12?

22 A. Yes, sir. Exhibit 12 shows pertinent data from the  
23 PVT study. I have also highlighted on this pertinent  
24 information. The sample was collected on July 18th of 2013.  
25 The production information for the time during testing is

1 highlighted. And then in the results summary, it shows that  
2 the analysis in the laboratory was an undersaturated gas. It  
3 exhibited a retrograde dew point at 3,905 psig. Bottomhole  
4 pressure was conducted resulting in an initial bottomhole  
5 pressure of 6,000 pounds. And the reservoir temperature is  
6 251 degrees. This is a gas reservoir and it is at virgin  
7 condition based on the pressure survey that was conducted.

8 Q. Okay, sir. And finally, your Exhibit 13?

9 A. The last exhibit, Exhibit 13 shows the production  
10 data on the well. There is three curves on here. The first  
11 being the gas production is shown in red. The condensate  
12 production is shown in green, and the flowing tubing pressure  
13 is shown in black. It also shows the period of time when the  
14 well was shut in to conduct the bottomhole pressure test.  
15 The well currently is producing about 9,000 Mcf of gas and a  
16 lot more than 200 barrels of condensate a day.

17 Q. Okay, sir. In your opinion, would the granting of  
18 the petition establishing this field and reforming the unit  
19 prevent waste and protect correlative rights?

20 A. Yes, sir, it would.

21 MR. TYRA: I would ask the exhibits to the  
22 testimony of Mr. Wood and Mr. Hanby be made a part of the  
23 record.

24 (Whereupon, (Items 10 & 11) Exhibits 1-13  
25 were offered into evidence.)

1 MR. ROGERS: All the exhibits are admitted.

2 (Whereupon, (Items 10 & 11) Exhibits 1-13, A  
3 & B were received into evidence.)

4 MR. TYRA: That is our presentation. We do  
5 tender the witnesses for any questions at this time.

6 MR. ROGERS: Just for the record, the exhibits  
7 in the exhibit book and the confidential exhibits, they are  
8 Exhibits 1 through 13, The Affidavit of Notice is Exhibit A  
9 and the Affidavit of Confidentiality is Exhibit B.

10 DR. BOLIN: The Staff has no questions.

11 MR. ROGERS: The only question I have is you  
12 stated this, state this, Mr. Wood, that the reservoir is  
13 encompassed -- is this correct, that the reservoir is  
14 encompassed within the proposed unit?

15 MR. WOOD: Yes, sir, it is.

16 MR. ROGERS: Anything else, Mr. Tyra?

17 MR. TYRA: Just clarify that the confidential  
18 exhibits are 4, 5, and 6 and the rest of the Exhibits, 1  
19 through 13, are the regular exhibits. And with your  
20 permission, I'll collect those confidential exhibits.

21 MR. ROGERS: Correct, and you can collect those  
22 exhibits.

23 The Staff will review the evidence and make a  
24 recommendation to the Board.

25 The next item is Item 12, Docket No.

1           9-10-13-06A, petition by Land & Natural Resource  
2           Development, Incorporated.

3                   MR. WATSON: Mr. Rogers, I have one witness. I  
4           would like to have him sworn in, please, sir.

5                   MR. ROGERS: State your name and address.

6                   MR. HIGGINBOTHAM: David Higginbotham,  
7           Tuscaloosa, Alabama.

8                   (The Hearing Officer swears in the witness.)

9                   MR. WATSON: Mr. Rogers, I have pre-filed an  
10          Affidavit of Notice in this matter wherein we have noticed  
11          all working and royalty interest owners in the Southeast  
12          Quarter of the Southeast Quarter of Section 27 in Pickens  
13          County, Alabama and --

14                   MR. ROGERS: The Affidavit of Notice is  
15          admitted. Go ahead, Mr. Watson.

16                   (Whereupon, (Item 12) Affidavit of Notice was  
17          received into evidence.)

18                   MR. WATSON: And the operators of record in this  
19          field.

20                   MR. ROGERS: The Affidavit of Notice is  
21          admitted.

22                   MR. WATSON: We are asking the Board in this  
23          particular petition, Mr. Rogers, to amend Rule 1 of the  
24          Special Field Rules for the Chicken Swamp Branch Oil Field  
25          in Pickens County to add the Southeast Quarter of Section

1           27, Township 18 South, Range 15 West, Pickens County,  
2           Alabama to the field and to establish a Southeast Quarter of  
3           the Southeast Quarter of said Section 27 as a permanent  
4           production unit for the L.P. McGahey 27-16 No. 1 Well.

5                       My witness, David Higginbotham, has appeared  
6           before you and has on file an affidavit of his  
7           qualifications as a petroleum geologist.

8                       Mr. Higginbotham, are you familiar with the  
9           petition that has been called for hearing today?

10                      MR. HIGGINBOTHAM: Yes, I am.

11                      MR. WATSON: And have you prepared exhibits in  
12           support of the petition?

13                      MR. HIGGINBOTHAM: Yes, I have.

14                      MR. WATSON: I have handed those up to the  
15           Board. Mr. Rogers, I tender Mr. Higginbotham as an expert  
16           petroleum geologist for giving testimony on this item.

17                      MR. ROGERS: He is recognized as an expert.

18

19

20                               DAVID HIGGINBOTHAM,

21           having been first duly sworn, was examined and testified

22           as follows:

23

24           (ITEM 12) DIRECT EXAMINATION BY MR. WATSON:

25           Q.           If you would turn in your exhibit booklet,

1 Mr. Higginbotham, to the first exhibit. Describe to the  
2 Board what is shown there, please, sir, or the Staff.

3 A. If you will please turn to Exhibit Number 1, Exhibit  
4 Number 1 is a well location plat. The scale is one inch  
5 equals 1,000 feet. Outlined in red is the production unit  
6 for the McGahey 27-16 No. 1 Well. Outlined in blue is the  
7 proposed addition to the Chicken Swamp Branch Oil Field, and  
8 this consists -- the proposed addition will consist of the  
9 Southeast Quarter of Section 27.

10 Q. All right, sir. Look at your Exhibit Number 2,  
11 Mr. Higginbotham, and describe the information shown on that  
12 exhibit, please.

13 A. Exhibit Number 2 is a structure contour map on top of  
14 the Penn A Sand. Superimposed upon that is an Isopach map of  
15 the Penn A Sand. Also listed on this is a line of  
16 cross-section A - A'.

17 First, I'll address the structure map. The  
18 scale is one inch equals 1,000 feet. The contour interval on  
19 the structure map is one inch is 50 feet, 50-foot contours.  
20 Next to each well is listed the structural position of the  
21 top of the Penn A Sand. Next to each well is also listed the  
22 values for how much actual sand was there used to making the  
23 Isopach map, the gross amount of Penn A Sand is listed at the  
24 top, and then below that is listed the feet of permeability  
25 as defined by microlog separations. Outlined in purple is

1 the existing Chicken Swamp Branch Field limits. And over to  
2 the West outlined in a bluer color is the proposed addition  
3 to the Chicken Swamp Branch Field. The trap on the Chicken  
4 Swamp Branch Field is a Northwest/Southeast trending down to  
5 the Northeast normal fault. The structure dips off to the  
6 West and the Penn A Sand is -- shows that there is 40 feet of  
7 sand in all -- more than 40 feet of sand in all the wells.

8 Q. I believe if I could correct one thing, this is  
9 showing a portion of the Chicken Swamp Branch Field. We will  
10 have the full field shown in our Exhibit Number 6. You have  
11 zeroed in on the area that is the subject of this hearing to  
12 add the Southeast Quarter of 27 and the geology as it relates  
13 to that and the McGahey Well on this exhibit; is that  
14 correct?

15 A. Right, that is correct.

16 Q. All right, sir. Go to your next Exhibit Number 3,  
17 Mr. Higginbotham. Tell us what is shown on that exhibit.

18 A. Exhibit Number 3 is a type log for the productive  
19 McGahey 27-16 Well. This is the well that we wish to add to  
20 the Chicken Swamp Branch Field. This log is a microlog. It  
21 illustrates the permeability. Listed on the log are the  
22 zones within the sand that were perforated, and this well was  
23 later fracked and it is presently producing oil.

24 Q. All right, sir. So you have two zones here that you  
25 have perforated as shown on this Exhibit Number 3; is that

1 correct?

2 A. That is correct.

3 Q. All right. Look at the next exhibit,

4 Mr. Higginbotham, Exhibit 4, your OGB-9.

5 A. Exhibit 4 is an OGB-9 and this lists the first  
6 production that was turned in to the Board on the McGahey  
7 Well. This illustrates that the McGahey Well tested  
8 initially 27 barrels of oil per day.

9 Q. All right, sir. Is there any water production from  
10 this well?

11 A. Yes, sir.

12 Q. Okay.

13 A. The well makes approximately 50 percent water.

14 Q. All right. Let's look at your next exhibit which is  
15 your line of cross-section A - A'.

16 A. The next exhibit is a line of cross-section A - A'.  
17 The line of cross-section is shown on the structure contour  
18 map. This is a structural cross-section on top of the Penn A  
19 Sand. This also illustrates the stratigraphic continuity of  
20 the Penn A Sand and it illustrates that the structure of the  
21 Penn A Sand is a West-dipping monocline off a trapping  
22 Northwest/Southeast trending down to the Northeast normal  
23 fault.

24 For each well listed, the McGahey 27-16 the  
25 McGahey 26-13 and the Elliott 26-14, for each well labeled is

1 the top of the Penn A Sand and the base of the Penn A Sand.  
2 The thickness of the Penn A Sand is graphically illustrated  
3 on the cross-section. The subsea tops are given for each  
4 well and the subsea base is given for each well. Again, this  
5 cross-section illustrates the stratigraphic continuity of the  
6 three wells in question. The two wells, the Elliott and  
7 McGahey, are currently in the existing Chicken Swamp Branch  
8 Field, and the cross-section, the structure map and the  
9 Isopach map illustrate that the McGahey 27-16 is indeed a  
10 productive extension of the oil pool in the Chicken Swamp  
11 Branch Field.

12 Q. All right, sir. Now, Mr. Higginbotham, this  
13 cross-section in your Exhibit Number 5, in preparing this  
14 cross-section, you did not use the log section, but you  
15 represent what you have just testified to graphically, but  
16 you have prepared a log section using the logs, the actual  
17 logs on these wells, have you not?

18 A. Yes, sir, I have got log sections here and I have  
19 also got with me the complete original logs on all three  
20 wells.

21 Q. All right.

22 MR. WATSON: I'm going to hand up one of these  
23 log sections. And, Mr. Rogers, I'm going to ask that you  
24 mark this either as Exhibit 5A or exhibit -- the last  
25 exhibit we have is Exhibit 6. You can mark this as

1 Exhibit 7.

2 MR. ROGERS: All right. We will mark it as  
3 Exhibit 7. This is a log from each well?

4 MR. WATSON: This is the log from all three of  
5 the wells that we just testified to.

6 MR. ROGERS: Oh, I see.

7 MR. HIGGINBOTHAM: Everything on the  
8 cross-section is -- comes straight off of the logs.

9 MR. ROGERS: All right. These are the logs from  
10 these three wells. They will be marked for identification  
11 as Exhibit 7.

12 Q. (BY MR. WATSON:) And what you have done in this  
13 Exhibit 7, Mr. Higginbotham, is simply take the log section  
14 itself and mark the Penn A Sand as it runs across just like  
15 you have shown on this Exhibit Number 5; is that correct?

16 A. That is correct.

17 Q. All right, sir. Let's go to your next exhibit,  
18 Exhibit Number 6, this is the Board's field map of Chicken  
19 Swamp Branch Oil Field and it shows on here, does it not, the  
20 160-acres being the Southeast Quarter of Section 27 that we  
21 proposed to add to the Chicken Swamp Branch Field?

22 A. Yes, sir, that is correct.

23 Q. It also shows the 40-acre unit for the McGahey Well  
24 being the Southeast Quarter of the Southeast Quarter of  
25 Section 27?

1 A. Yes, sir.

2 Q. I also see on this map as is indicated on your  
3 Exhibit Number 1, another well in the Southeast Quarter, the  
4 Prater 27-15 Well. Tell us about that well.

5 A. We drilled that well about three weeks ago. We  
6 logged it, we cored it, we set pipe, we perforated it, we  
7 fracked it and we are currently running a bottomhole pressure  
8 test. And the logs on that well in the cores are currently  
9 being held confidential by the State in accordance with the  
10 rules of the Oil and Gas Board.

11 Q. Is that well, in your opinion, a part of the Penn A  
12 Sand and will it be when it is declared as such a part of the  
13 Chicken Swamp Branch Oil Field?

14 A. Absolutely.

15 MR. WATSON: Mr. Rogers, I would ask that you  
16 receive into evidence Exhibits 1 through 7 to the testimony  
17 of Mr. Higginbotham.

18 (Whereupon, (Item 12) Exhibits 1-7 were  
19 offered into evidence.)

20 MR. ROGERS: The exhibits are admitted.

21 (Whereupon, (Item 12) Exhibits 1-7 were  
22 received into evidence.)

23 Q. Mr. Higginbotham, if the Staff sees fit to recommend  
24 the approval of our petition to the Board amending the field  
25 limits and declaring the L.P. McGahey 27-16 No. 1 Well as a

1 production unit, will that promote orderly development in the  
2 Chicken Swamp Branch Field, prevent waste and protect  
3 correlative rights?

4 A. Yes, sir.

5 Q. So this field is still in a developmental stage in a  
6 highly competitive situation, a lot of activity around this  
7 field; is that correct?

8 A. That is correct.

9 MR. WATSON: I tender my witness to you,  
10 Mr. Rogers, and members of the Staff for any questions you  
11 have.

12 MR. ROGERS: Just a note here, that the  
13 Affidavit of Notice is admitted and that is Exhibit A.

14 (Whereupon, (Item 12) Affidavit of Notice was  
15 received into evidence.)

16 MR. WATSON: All right, sir.

17 MR. ROGERS: Any questions from the Staff? Mr.  
18 McQuillan?

19 MR. MCQUILLAN: Mr. Higginbotham, in your  
20 exhibits -- let's see. The Exhibit 2 and 3 and 5 and  
21 perhaps 5A and 7, you refer to the Penn A Sand. Now, in the  
22 Special Field Rules for this field, it defines the pool as  
23 the Pottsville A Sand Oil Pool shall mean those strata of  
24 the Pottsville A Sand productive of hydrocarbons. Is the  
25 Penn A Sand in your exhibits the same as the Pottsville A

1 sand in the Special Field Rules?

2 MR. HIGGINBOTHAM: Yes, sir, the Penn A Sand is  
3 simply an acronym or a shortened industry nomenclature term  
4 used to describe the Pennsylvania Pottsville A Sand,  
5 Pennsylvania and Pottsville A Sand.

6 MR. MCQUILLAN: Thank you.

7 MR. ROGERS: The question is: You have noted  
8 the Prater 27-15 with just a circle. That is the well that  
9 you discussed that was drilled recently; is that right,  
10 Mr. Higginbotham?

11 MR. HIGGINBOTHAM: Yes, sir.

12 MR. ROGERS: Any other questions from the Staff?

13 (No response.)

14 DR. BOLIN: Mr. Higginbotham, in regard to the  
15 Prater 27-15, that was the one you were indicating has been  
16 tested; is that correct?

17 MR. HIGGINBOTHAM: We logged it about three  
18 weeks ago, we cored it, we set pipe, we perforated it, we  
19 fracked it, and we presently are running bottomhole pressure  
20 tests on it.

21 DR. BOLIN: But you have -- not conducted an  
22 official test?

23 MR. HIGGINBOTHAM: No, right after -- what we do  
24 is right after we frac these wells, we swab it for a couple  
25 of days and then shut it in and then take a bottomhole

1           pressure and then put a pump on it and then pump all the  
2           frac fluid off and then get a test.

3                       DR. BOLIN:  And on the basis of your setting  
4           pipe, I would assume that you would consider the well -- you  
5           anticipate the well to be productive?

6                       MR. HIGGINBOTHAM:  Yes, sir.

7                       DR. BOLIN:  In the same sand, the Pottsville A  
8           Sand?

9                       MR. HIGGINBOTHAM:  Right.  And actually, I  
10          didn't put the values of the sand on the well because the  
11          well is being held confidential.  But when those values are  
12          put onto the map, it will fit precisely.

13                      DR. BOLIN:  Can you tell me with the area to the  
14          North of the Prater and the McGahey 27-16 Well that you are  
15          asking to be added to the field at this time, do you  
16          anticipate drilling additional wells in that area?

17                      MR. HIGGINBOTHAM:  Yes, sir, for sure.

18                      DR. BOLIN:  That is all the questions we have.

19                      MR. ROGERS:  Anything else, Mr. Watson?

20                      MR. WATSON:  That is all we have.

21                      MR. ROGERS:  The Staff will review the evidence  
22          and make a recommendation to the board.  Thank you.

23                      The next item is Item 13, Docket No.

24          9-10-13-07, petition by Ventex Operating Corporation.

25                      MR. WATSON:  Mr. Rogers, I have one witness to

1           be sworn in.

2                           MR. ROGERS: State your name and address.

3                           MR. SKIDMORE: David Skidmore, Dallas, Texas.

4           (The Hearing Officer swears in the witness.)

5                           MR. WATSON: These are confidential

6           (indicating). Mr. Rogers, this is a petition by Ventex  
7           Operating Corporation asking the Board to approve a  
8           nongovernmental exceptional 40-acre Wildcat Drilling Unit  
9           for the proposed Craft-Brown 20-13 No. 1 Well consisting of  
10          the East Half of the Southeast Quarter of the Southeast  
11          Quarter of Section 19 and the West Half of the Southwest  
12          Quarter of the Southeast Quarter of Section 20, Township 5  
13          North, Range 5 East in Monroe County, Alabama as an  
14          exception to Rule 400-1-2.02(2)(a) of the Administrative  
15          Code.

16                          My witness is David Skidmore who has on file an  
17                          affidavit of his qualifications as a petroleum geologist.  
18                          Mr. Skidmore, have you prepared exhibits in support of this  
19                          petition that I have just outlined?

20                          MR. SKIDMORE: I have.

21                          MR. WATSON: I tender him as an expert witness  
22                          for giving testimony in this item, Mr. Rogers.

23                          MR. ROGERS: He is so recognized.

24

25   DAVID SKIDMORE,

1 having been first duly sworn, was examined and testified  
2 as follows:

3

4 (ITEM 13) DIRECT EXAMINATION BY MR. WATSON:

5 Q. All right. Mr. Skidmore, turn to your first exhibit  
6 and tell us what that exhibit is and describe the information  
7 shown on it, please, sir.

8 A. Exhibit 1 is a survey plat prepared by Engineering  
9 Services. It shows the Sections 19 and 20 in Township 5,  
10 Range 5 North and 5 East. It shows the surface location of  
11 our proposed well and the bottomhole location, likewise, of  
12 the proposed Craft-Brown 20-13 No. 1 Well, surface location  
13 being in generally the Southeast corner of Section 19 with  
14 the bottomhole location being in the Southwest corner of  
15 Section 20.

16 Also shown in a red outline around a 40-acre  
17 proposed drilling unit is the West Half of the Southwest of  
18 the Southwest of 20 and then the East Half of the Southeast  
19 of the Southeast of 19. Distances to the respective section  
20 lines are also annotated on the plat as well.

21 Q. Mr. Skidmore, is it your information from your land  
22 department that the South Half of Section 19 and the South  
23 Half of Section 20 are all common ownership by Cedar Creek  
24 Land & Timber Company?

25 A. That is correct.

1 Q. All right, sir. Turn to your Exhibit Number 2,  
2 please, sir. Tell us what the exhibit is and describe the  
3 information that you are showing on that exhibit, please,  
4 sir.

5 A. Exhibit 2 is a structure contour map on top of the  
6 Smackover formation, scale of one inch equal 1,000 feet,  
7 contour interval of 50 feet. This map is derived from  
8 integration of a 3D seismic volume that we shot last year.  
9 We shot several hundred square miles of data and this  
10 prospective structure is not in the perimeter, but generally  
11 in the middle of the data volume. And so we have taken that  
12 seismic data and integrated the subsurface data throughout  
13 the data volume and come up with a Smackover depth map which  
14 is presented here as the structural depth map on top of the  
15 Smackover.

16 One well penetration in these four sections is  
17 shown to the South. It's the Amoco Brown Foundation Well  
18 intercepted the top of the Smackover at minus 13,762 feet  
19 subsea. The contour interval again is 50 feet and you can  
20 see from the Amoco Well, which is drilled on a structural  
21 nose, as you move to the North and go through a syncline and  
22 then come up on anticlinal feature which is what we intend to  
23 test at the apex with the drilling of our Craft-Brown 20-13  
24 Well.

25 We anticipate that we will be structurally high

1 to the Amoco Brown Foundation Well which was a dry hole in  
2 the Smackover. Also shown on this cross-section are two --  
3 or, excuse me, on the structure map are two lines of  
4 cross-section, an A - A' and B - B'.

5 The following Exhibit Number 3 will be a  
6 structural cross-section incorporating the Amoco Brown log  
7 with our proposed location, and then we have two seismic  
8 sections that have been extracted from the 3D data volume,  
9 one also along the same line as the structural cross-section,  
10 the geological section for A -A', and then B - B' is an  
11 East/West seismic line through the structure. Those will  
12 demonstrate clearly that it's an anticlinal structure  
13 separate from the Amoco Well.

14 MR. WATSON: At this point and before we get to  
15 those seismic exhibits, Mr. Rogers, I have pre-filed an  
16 affidavit requesting that the seismic lines be kept  
17 confidential. I would ask that you rule that those lines  
18 when we get to those two exhibits, 4 and 5, are, in fact,  
19 confidential and not available to the public?

20 MR. ROGERS: The Affidavit of Confidentially is  
21 admitted and the Staff -- the Hearing Officer rules that  
22 these exhibits are confidential and proprietary and  
23 unavailable for public disclosure.

24 Q. (BY MR. WATSON:) All right, sir. Let's go to your  
25 next line. This is a graphic line of cross-section, your

1 Exhibit Number 3, Mr. Skidmore.

2 A. A geological cross-section simply incorporating the  
3 well log of the Amoco Brown Foundation and our proposed  
4 location. Annotated on the Amoco Well are the correlation  
5 markers for Haynesville Marker, it's not the top of the  
6 Haynesville section but a correlative marker that we are able  
7 to find in the wellbores and correlate around the top of the  
8 Buckner section, and then the top of the Smackover again  
9 shown at minus 13,762 subsea in the Amoco Brown Foundation  
10 29-13 Well.

11 As you move from the Brown Foundation Well on  
12 the right, you move to the North. You go through a syncline  
13 approximately equal distance between that wellbore and our  
14 proposed location. And as depicted, based on the seismic,  
15 you come up on to an anticlinal feature that we would test at  
16 the apex of that structure with our proposed Craft-Brown  
17 Well. As you continue to the North, you fall off structure  
18 and dip off to the North.

19 Q. All right. Let's go now to your Exhibit 4 which is  
20 the first confidential seismic line that demonstrates through  
21 the 3D seismic tool what you have shown here graphically. So  
22 describe the seismic line on Exhibit 4.

23 A. This line is again along the line of section that is  
24 on Exhibit 2. It's A - A' and so it's generally North/South  
25 seismic line going through the Brown Foundation Well which is

1 shown on the right-hand side of Exhibit 4. The dark seismic  
2 peak amplitude at approximately 2.7 seconds is the top of the  
3 Smackover. Again, that is derived from interfacing all of  
4 the well data with our seismic data.

5 So as you go from the Amoco Well to the North,  
6 you go -- dip to the North into a syncline and then that  
7 syncline turns around and you gain structure then back to our  
8 proposed location. As you continue North, you fall off of  
9 the apex of the structure again to North dip.

10 So clearly at our proposed location as shown on  
11 that section, we are anticipating to drill the apex at the  
12 top of the structure which is a necessity for asking for an  
13 exceptional unit.

14 Q. All right, sir. And your Exhibit Number 5?

15 A. Exhibit 5 is an East/West cross-section again shown  
16 on the structure map, Exhibit 2, it's B - B' and it's simply  
17 a seismic line through the apex of the structure running  
18 East/West. The tie line is shown in red which also is  
19 coincident with our location of the proposed Brown Well,  
20 Craft-Brown. And, again, that shows clearly that the  
21 location that we anticipate drilling is at the apex of the  
22 structure.

23 Q. All right, sir. Now, looking at your Exhibit 2 in  
24 these seismic lines 4 and 5, if you were to drill this well,  
25 the Craft-Brown Well at a regular governmental quarter

1 quarter section, it would be, it looks to me like a pretty  
2 extreme exceptional location; is that correct?

3 A. That is correct.

4 Q. Would it be off the apex of the structure, of course;  
5 is that correct?

6 A. Well, if we were to move the location to the -- to a  
7 legal location, then, yes, we would be losing structural --  
8 losing structural position from the apex of the structure as  
9 we have it interpreted.

10 Q. So this is based on information you have from the 3D,  
11 this is the optimum geological point from which to test this  
12 structure?

13 A. That is correct.

14 Q. And then the 40-acre split unit is necessary to put  
15 this well somewhat at a legal location on a split unit,  
16 correct?

17 A. That is correct, and it places the wellbore  
18 approximately in the East to West geographic center of that  
19 proposed unit.

20 Q. So tell us, Mr. Skidmore, should this well be  
21 completed as a commercial producer, you, of course, would  
22 have to come back to this Board to ask for a production unit.  
23 Can you kind of tell us based on this structure and the  
24 pre-drill information that you have how you might propose an  
25 ultimate production unit assuming 160 acres?

1           A.           Yes. We would take certainly the data that we gained  
2           from drilling this well, the well data, and assuming it is  
3           productive, core data and the well test data, we would take  
4           the new point of subsurface control, reincorporate that into  
5           our seismic interpretation, tie in our seismic and our sonic  
6           logs from the wellbore, and the structural interpretation we  
7           do not anticipate would change substantially. We would  
8           reintegrate that new data. And based upon the oil column  
9           that we see in that wellbore and well test data, we would  
10          propose to form a unit that would cover the productive area  
11          of this structure.

12          Q.           And if that 160-acre unit would not cover the  
13          productive area after the new information comes in, then you  
14          would have at your option, assuming that we could meet the  
15          statutory obligations, up to a 240-acre unit to encompass all  
16          of the structure for potentially productive structure?

17          A.           Yes, that is correct. The maximum closure on this  
18          structure encapsulates approximately 200 acres of maximum  
19          closure within the contours. And so that would be the  
20          maximum size of the structure that we would anticipate if we  
21          are lucky enough that it would be full to the spill point.

22          Q.           And just in case there could be some hanging out, and  
23          I use the term "hanging out," beyond the limits of the  
24          production unit, the area is in common ownership and you have  
25          leases on the entire area; is that right?

1 A. That is correct, in those two sections.

2 Q. All right, sir.

3 MR. WATSON: Mr. Rogers, I would ask that you  
4 receive into the record of this hearing Exhibits 1 through 5  
5 to the testimony of Mr. Skidmore.

6 (Whereupon, (Item 13) Exhibits 1-5 were  
7 offered into evidence.)

8 MR. ROGERS: The exhibits are admitted.

9 (Whereupon, (Item 13) Exhibits 1-5 were  
10 received into evidence.)

11 Q. (BY MR. WATSON:) Mr. Skidmore, would the granting of  
12 this petition promote orderly development, prevent waste and  
13 protect correlative rights?

14 A. Yes, it would.

15 MR. WATSON: I tender my witness to you for any  
16 questions you have, Mr. Rogers, and the Staff.

17 MR. ROGERS: The Affidavit of Confidentially is  
18 admitted as Exhibit B and the Affidavit of Notice is  
19 admitted as Exhibit A. One question I had, Mr. Watson, with  
20 all these people here, I'm a little confused now, common  
21 ownership, these are --

22 MR. WATSON: We gave a larger area. We noticed  
23 a larger area and some to the South of this proposed unit.

24 MR. ROGERS: But the South Half of each section  
25 is --

1 MR. WATSON: Common.

2 MR. ROGERS: -- owned by?

3 MR. WATSON: Cedar Creek Land & Timber. When  
4 you get down in Sections 29 and 30, it's diverse.

5 MR. ROGERS: All right. Well, I just need to  
6 say that we don't want to -- we will just have to look at  
7 the evidence to consider the unit at the time. We  
8 understand that you are asking for this unit because the  
9 optimum location would be an extreme exceptional location if  
10 it were on a regular unit, but we don't want to any way  
11 assume that your statements that they are accepted at this  
12 hearing, you understand that, Mr. Watson?

13 MR. WATSON: As far as the ultimate unit?

14 MR. ROGERS: As far as the ultimate unit.

15 MR. WATSON: Yes, sir. We were just giving you  
16 some idea about what we would be looking at should it be  
17 successful.

18 MR. ROGERS: All right.

19 MR. WATSON: And many of these people listed on  
20 this are working interest owners. We noticed working and  
21 royalty.

22 MR. ROGERS: So the same identical working  
23 interest is in both of the sections, South Half of Section  
24 19 and South Half of 20 and the same -- in the same  
25 percentages?

1                   MR. SKIDMORE: Yes. Working interest owners is  
2                   common in all four of those sections.

3                   MR. ROGERS: All right. Well, we just don't  
4                   need to -- I don't think we need to get into that anymore  
5                   about whether you are required to drill two wells if you  
6                   can't get your productive area within the 160 or the 240,  
7                   and so we don't want to give any indication that we support  
8                   that. We just want to tell you that depending on the  
9                   evidence, you will come back to the Board for a unit -- and  
10                  the normal process, if you decide to go with a large unit,  
11                  you will have to petition the Board for a production unit  
12                  and then come back and enlarge that.

13                  MR. WATSON: Absolutely. We are not trying to  
14                  prejudge anything. We were just kind of giving you our idea  
15                  there.

16                  MR. ROGERS: We appreciate that. Any questions  
17                  from the Staff?

18                  DR. BOLIN: No questions.

19                  MR. ROGERS: Anything else, Mr. Watson?

20                  MR. WATSON: That is all we have.

21                  MR. ROGERS: The Staff will review the evidence  
22                  and make a recommendation to the Board.

23                  MR. WATSON: Mr. Skidmore reminds me, Dr. Bolin  
24                  and Kirk, that we are currently drilling the Laurie well  
25                  close to this well. And as soon as that well finishes, it's

1 moved to this well. So time is kind of in the essence on  
2 the permitting. We understand you have got to make a  
3 recommendation to the Board, but we plan to move a rig on  
4 within the next two weeks if the Board approves it.

5 MR. MCQUILLAN: That shouldn't be a problem.

6 MR. ROGERS: The next item is 15, Docket No.  
7 9-10-13-09, petition by JL Resources, LLC.

8 MR. TYRA: Mr. Rogers, I have one witness to be  
9 sworn in, please.

10 MR. HALE: Steve Hale, San Antonio.

11 (The Hearing Officer swears in the witness.)

12 MR. TYRA: Mr. Rogers, I'm John Tyra here on  
13 behalf of JL Resources, LLC. We have filed a petition  
14 asking this Board to approve an exceptional 40-acre drilling  
15 unit for the proposed James A. Bell 5, No. 1 Well. The  
16 exceptional unit is nongovernmental. It is to consist of  
17 the South Half of the Northeast Quarter of the Northeast  
18 Quarter and the North Half of the Southeast Quarter of the  
19 Northeast Quarter of Section 5, Township 11 North, Range 4  
20 West in Choctaw County, Alabama.

21 This would be an exception to Rule  
22 400-1-2-.02(2)(a) of the State Oil and Gas Board of Alabama  
23 Administrative Code. I have one witness who has been sworn  
24 in, Mr. Steve Hale. Have you previously testified before  
25 this Board, sir?

1 MR. HALE: Yes, sir, I have.

2 MR. TYRA: And your Affidavit of Qualifications  
3 is on file with the Board; is that correct?

4 MR. HALE: Yes, sir.

5 MR. TYRA: Are you familiar with the petition  
6 that has been filed in this matter and the allegations made  
7 therein?

8 MR. HALE: Yes, I am.

9 MR. TYRA: Have you prepared exhibits in support  
10 of that petition?

11 MR. HALE: Yes.

12 MR. TYRA: I tender Mr. Hale as an expert  
13 petroleum geologist.

14 MR. ROGERS: He is so recognized.

15

16 STEVE HALE,  
17 having been first duly sworn, was examined and testified  
18 as follows:

19

20 (ITEM 13) DIRECT EXAMINATION BY MR. TYRA:

21 Q. If you would, turn to your exhibits, Exhibit 1 and  
22 explain what that shows, please.

23 A. This is just referencing our proposed 40-acre  
24 exceptional unit Section 5, 11 North, 4 West in Western  
25 Choctaw County. Also shows our proposed location and it

1 includes the -- some of the control that we are keying off  
2 of, the Esenjay Bell 5-8 Well to the South of us and the  
3 recently drilled Alta Mesa Harrell-Carney Well back up to the  
4 Northeast.

5 MR. TYRA: All right, sir. Before we go any  
6 further, I have previously filed an Affidavit of Notice in  
7 this matter, Mr. Rogers. We gave notice to everyone in the  
8 Northeast Quarter of Section 5, Township 11 North, Range 4  
9 West upon the directions of this Board. I would like for  
10 that Affidavit of Notice to be made a part of the record.

11 (Whereupon, (Item 15) Affidavit of Notice was  
12 offered into evidence.)

13 MR. ROGERS: The affidavit is admitted.

14 (Whereupon, (Item 15) Affidavit of Notice was  
15 received into evidence.)

16 MR. TYRA: I apologize for that interruption.

17 Q. (BY MR. TYRA:) I apologize, Mr. Hale. If you would,  
18 move to Exhibit 2 and tell us what that is.

19 A. This is a time map, a structure map from the 3D data  
20 set on top of our Smackover event. It's showing our proposed  
21 location, our area of structural closure, also indicates the  
22 position of some faulting that occurs at the crest of this  
23 structure. You have got one North/South oriented fault that  
24 is down to the West. Another fault that is East/West  
25 oriented that terminates into the previous fault that is down

1 to the South that cuts some section out of our key well, our  
2 Esenjay 5-8 Well. And also, again, it indicates the position  
3 of our 40-acre unit, our proposed location which would just  
4 be backing away from the previously drilled Esenjay Well, but  
5 still staying in a structurally advantageous unit relative to  
6 our seismically indicated structural closure.

7 The exhibit also references a  
8 Northeast/Southwest oriented line of section that is the next  
9 exhibit and shows the structural separation between our area  
10 of interest in Section 5 and the well back up to the  
11 Northeast, the Alta Mesa recently drilled well.

12 Q. All right, sir. Turn to that Exhibit 3.

13 A. The next exhibit is running Northeast/Southwest  
14 structural cross-section. It includes the Texas City No. 1  
15 Bell Unit back down to the South of our location. It has a  
16 thick Buckner anhydrite section in that well and a thick well  
17 developed Smackover interval.

18 The well that we would be keying directly off of  
19 is the Esenjay No. 1 Bell 5-8. And what you are seeing in  
20 this well is a truncated section within the Smackover  
21 partially faulted out and partially just thinned over the  
22 preMesozoic section that this interval is compactionally  
23 draped across, and then our proposed location which would be  
24 back to the Northeast of the Esenjay Well where we would  
25 anticipate encountering a full section of the Buckner

1 anhydrite top seal and Smackover reservoir section.

2 Q. So that Bell 5-8 Well, the Esenjay Well, it had oil  
3 shows; is that correct?

4 A. It did, but just very limited section.

5 Q. All right, sir.

6 MR. TYRA: We have some confidential exhibits  
7 now, Exhibit 4 and 5. I had previously filed an Affidavit  
8 of Confidentiality concerning these matters asking that these  
9 two exhibits be held proprietary and confidential.

10 MR. ROGERS: The Affidavit of Confidentiality is  
11 admitted and the exhibits are ruled to be confidential and  
12 proprietary and unavailable for public disclosure.

13 (Whereupon, (Item 15) Affidavit of  
14 Confidentiality was received into evidence.)

15 MR. TYRA: Thank you.

16 Q. (BY MR. TYRA:) All right, sir. If you will, turn to  
17 your Exhibit 4.

18 A. Exhibit 4 again just shows our time map at the top of  
19 Smackover where five mil contour interval indicates our area  
20 of structural closure and references the ARB line one and  
21 East/West in an East/West orientation that runs through our  
22 proposed location and continues onto the West and catches  
23 part of the North/South oriented fault down to the West fault  
24 that cross cuts this, the crestal position on this structure,  
25 that is the next exhibit. And the line indicates the top of

1           Smackover as the purple trough and the top of Buckner as the  
2           green peak immediately above it. And in this view, you can  
3           clearly see the displacement at top of Smackover on one of  
4           the faults that we can pick up with on the data set and then  
5           indicates our proposed location relative to the faulting and  
6           the most advantageous structural crestal position on this  
7           feature.

8           Q.           So you are looking to drill this well at the apex of  
9           that structure; is that correct?

10          A.           We would be a slightly off the crestal position in  
11          order to pick up a more complete and porous Smackover section  
12          just with respect to the old Esenjay Well that is back down  
13          to the South of us, but still at it, at close to the crestal  
14          position for -- at Smackover depth.

15          Q.           So considering all the factors, in your opinion,  
16          would this be the optimum location of the proposed well?

17          A.           Yes.

18          Q.           Okay, sir. If you will, look at Exhibit 6 and  
19          describe what that shows, please.

20          A.           This is our proposed drilling unit which would give  
21          us our location that is indicated on the previous exhibits  
22          and would also take advantage of the best surface location as  
23          far as logistics and facility.

24          Q.           Okay, sir. That plat is showing the proposed  
25          drilling unit as the South Half of the Northeast of the

1 Northeast and the North Half of the Southeast of the  
2 Northeast of Section 5; is that correct?

3 A. Yes, sir.

4 Q. Now, if you were to drill this well on a governmental  
5 quarter quarter as required by the rules consisting of the  
6 Northeast Quarter of the Northeast Quarter you would be  
7 33 feet off of the South line of that Northeast Quarter of  
8 the Northeast Quarter, would you not?

9 A. Yes.

10 Q. And that is an extremely exceptional location,  
11 correct?

12 A. Correct.

13 Q. So the purpose of the split unit is to have it at the  
14 optimum geological location and avoiding the extreme  
15 exceptional location that a governmental quarter quarter  
16 would require; is that correct?

17 A. Correct.

18 Q. In your opinion, would the granting of the petition  
19 prevent waste and protect correlative rights?

20 A. Yes.

21 Q. Would it also avoid the drilling of unnecessary  
22 wells?

23 A. Yes.

24 MR. TYRA: I would ask that the exhibits to the  
25 testimony of Mr. Hale be made a part of record at this time.

1 (Whereupon, (Item 15) Exhibits 1-6 were  
2 offered into evidence.)

3 MR. ROGERS: The exhibits are admitted. And  
4 let's see, they are Exhibits 1 through --

5 MR. TYRA: 1 through 6 with Exhibits 4 and 5  
6 being confidential.

7 MR. ROGERS: 1 through 6, Exhibits 4 and 5 being  
8 confidential, the Affidavit of Notice will be Exhibit A and  
9 affidavit of confidentiality will be Exhibit B.

10 (Whereupon, (Item 15, Exhibits 1-6, A and B  
11 were received into evidence.)

12 MR. TYRA: I would tender the witness for any  
13 questions that the Staff or you may have, Mr. Rogers.

14 DR. BOLIN: The Staff has no questions.

15 MR. ROGERS: The only question, just a  
16 clarification, you've testified to this, your interpretation  
17 there is potential communication from the Bell Well and the  
18 proposed well, communication there?

19 MR. HALE: Very limited. They lost essentially  
20 all of the top of the Smackover interval that is typically  
21 the zone that we complete in so --

22 MR. TYRA: But there may be minimal  
23 communication?

24 MR. HALE: Yeah, there is some of that section  
25 preserved. We have the porosity logs on that well and you

1 do see some development. But we would be hoping to pick up  
2 an entire -- you know, a complete upper Smackover section  
3 that they for the most part lost in that well, although they  
4 did have some mud log and log shows in their thin section.

5 MR. ROGERS: All right. Anything else?

6 MR. TYRA: That is all, Mr. Rogers. Thank you.

7 MR. ROGERS: The Staff will review the evidence  
8 and make a recommendation to the Board.

9 The next item is Item 16, Docket No.  
10 9-10-13-10, petition by Fletcher Petroleum Corporation.

11 MR. COLEMAN: Mike Coleman for Fletcher  
12 Petroleum Corporation. I have one witness, Mr. John Ross.

13 MR. ROGERS: State your name.

14 MR. ROSS: John Ross, Altoona, Alabama.

15 (The Hearing Officer swears in the witness.)

16 MR. COLEMAN: Mr. Rogers, this is a petition by  
17 Fletcher Petroleum Corporation to force pool without risk  
18 compensation the Northwest Quarter of Section 26, Township 4  
19 North, Range 12 East in Conecuh County, Alabama as a  
20 160-acre drilling unit as a productive extension of the  
21 Brooklyn Field. And in that regard, an affidavit -- I will  
22 refer to an affidavit of ownership of lease hold and  
23 drilling rights and an amended affidavit in the same manner  
24 of Mr. Ross have been filed for record and my Affidavit of  
25 Notice has also been filed and I would ask that those be

1           made a part of the record at an appropriate time.

2                   (Whereupon, (Item 16) affidavit of ownership  
3                   of lease hold and drilling rights, amended  
4                   affidavit, and Affidavit of Notice were  
5                   offered into evidence.)

6                   MR. ROGERS: I'll go ahead and admit those,  
7           Mr. Coleman.

8                   (Whereupon, (Item 16) affidavit of ownership  
9                   of lease hold and drilling rights, amended  
10                  affidavit, and Affidavit of Notice were  
11                  received into evidence.)

12                  MR. COLEMAN: Thank you, sir.

13                  MR. ROGERS: Mr. Ross, the amended affidavit,  
14           the original affidavit and the Affidavit of Notice.

15                  MR. COLEMAN: We have filed an original petition  
16           and that petition has been amended and the Docket Number has  
17           now got the suffix A on it. And the main purpose of that  
18           amendment was to reflect that this is a proposed drilling  
19           unit which is as a productive extension of the Brooklyn  
20           Field, and also the amended petition does change the number  
21           slightly since another lease has come in, so I just wanted  
22           to make you aware of that.

23                  The personal resume of Mr. Ross has been  
24           submitted to Mrs. Merritt and is with the Board right now  
25           and I would like to ask Mr. Ross to briefly state for the

1 record his educational and work experience as it relates to  
2 the oil and gas industry.

3 MR. ROSS: I obtained a bachelor's degree in  
4 business in 1978, started working in the oil industry in  
5 1979 performing title work, lease acquisitions, abstracting  
6 title curative, division order analysis, also Fieldwide  
7 Unitization and federal communitization agreements as well  
8 as acquisitions of right of ways, accessing sites for the  
9 wells. I worked for several major oil companies and several  
10 independents in the Southeast Region, primarily in Alabama,  
11 Mississippi, Northwest Florida and Louisiana.

12 MR. COLEMAN: Okay. Based on the personal  
13 resume of qualifications and Mr. Ross's testimony, I would  
14 ask that he be recognized as an expert petroleum landman.

15 MR. ROGERS: He is so recognized.

16

17 JOHN ROSS,

18 having been first duly sworn, was examined and testified  
19 as follows:

20

21 (ITEM 16) DIRECT EXAMINATION BY MR. COLEMAN:

22 Q. Mr. Ross, have you been engaged in connection with  
23 the proposed Benjamin 26-4 Well to be drilled in Conecuh  
24 County, Alabama by Fletcher Petroleum Corporation?

25 A. Yes, I have.

1 Q. And have you had the primary responsibility for  
2 obtaining leases in connection with this 160-acre tract?

3 A. That is correct.

4 Q. And, in fact, have you been involved with this  
5 project since the year 2011?

6 A. Since early 2011.

7 Q. You had occasion to speak with a title attorney in  
8 Mobile concerning the title to this property?

9 A. Yes, I have.

10 Q. Have you had occasion to look at an abstract relating  
11 to this property?

12 A. I have.

13 Q. And have you had numerous occasions to update that  
14 abstract and work in connection therewith?

15 A. Yes, sir, I have on a weekly and monthly basis.

16 Q. You have heard me state to the Staff that an  
17 affidavit of what I will refer to as ownership of lease hold  
18 and drilling rights of yourself has been submitted as well as  
19 an amended affidavit; is that correct?

20 A. Yes, sir.

21 Q. And are you familiar with the matters set forth in  
22 that affidavit?

23 A. Yes, I am.

24 Q. Are they true and correct to the best of your  
25 knowledge, information and belief?

1 A. Yes, sir, they are.

2 Q. And do they fairly and accurately portray the  
3 outstanding interest in this proposed unit to the best of  
4 your knowledge, information and belief?

5 A. Yes, sir, they do.

6 Q. And those figures, as I understand it, approximate  
7 4.2396 percent mineral interests outstanding in the unit as a  
8 whole which is a 160-acre unit; is that correct?

9 A. Yes, sir, that is correct.

10 Q. And that would translate to approximately 6.7834 net  
11 mineral acres that are currently outstanding; is that  
12 correct?

13 A. Yes, sir.

14 Q. All right, sir. And you are familiar with the  
15 proposed Benjamin 26-4 Well; is that correct?

16 A. Yes, sir, that is correct.

17 Q. And in your opinion as an expert petroleum landman,  
18 would the granting of this petition prevent waste, protect  
19 the correlative rights of the owners in the proposed unit and  
20 avoid the drilling of unnecessary wells?

21 A. Yes, sir, that is my belief.

22 Q. All right, sir.

23 MR. COLEMAN: I would submit this matter to the  
24 Board based on the affidavits and the testimony of Mr. Ross  
25 and I would tender him as a witness to the Staff for any

1 questions which they may have.

2 MR. ROGERS: All right. Any questions from the  
3 Staff? We have admitted the Affidavit of Notice as Exhibit  
4 A, the Affidavit of Ownership is Exhibit B and the  
5 affidavit -- amended Affidavit of Ownership as Exhibit C.

6 DR. BOLIN: The Staff has no questions.

7 MR. ROGERS: No questions. Anything else,  
8 Mr. Coleman?

9 MR. COLEMAN: No, sir, that is all.

10 MR. ROGERS: We will review the evidence and  
11 make a recommendation to the Board.

12 MR. COLEMAN: Thank you very much.

13 MR. ROSS: Thank you.

14 MR. ROGERS: The hearing is adjourned.

15

16 (The hearing was adjourned at 11:20 a.m.)

17

18

19

20

21

22

23

24

25

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

C E R T I F I C A T E

STATE OF ALABAMA)  
JEFFERSON COUNTY)

I hereby certify that the above and foregoing proceedings were taken down by me in stenotype, and the questions and answers thereto were reduced to typewriting under my supervision, and that the foregoing represents a true and correct transcript of the proceedings given by said witness upon said hearing.

I further certify that I am neither of counsel nor of kin to the parties to the action, nor am I in anywise interested in the result of said cause.

/s/ Teresa Turquitt Davis  
TERESA TURQUITT DAVIS, CCR, RPR  
CCR #162, Expires 09/30/14  
Commissioner for the  
State of Alabama at Large  
My Commission Expires: 12/03/16

**WORD INDEX****< 0 >****03** 56:24**09** 56:22**< 1 >****1** 4:18 6:13 9:7,

14 10:10 12:25

14:1 19:8, 18

20:23 21:4 22:3,

4, 6 27:3, 16, 25

31:9 32:8, 12

39:4 42:15

43:21 45:14, 19

49:4, 5, 7

**1,000** 22:5, 18

33:6

**1,078** 16:2**1,992** 17:20**10** 1:4 2:3, 4, 10,

10, 11, 16, 17, 18

3:12, 16 5:16

6:1, 20, 23 7:20,

25 9:1 15:20

17:10 18:24 19:2

**10**, 6:3**10:00** 3:1, 3 4:14**10:30** 4:1**10th** 1:9 3:4, 6**11** 2:3, 4, 10, 10,

11, 16, 17, 18 6:1,

10, 20, 23 7:6, 20,

25 9:1 17:10, 12,

13 18:24 19:2

42:19 43:24 44:8

**11**. 7:13 9:24**11:20** 55:16**1-13** 2:11, 18

18:24 19:2

**12** 2:5, 12, 19, 19,

20 3:17 4:14

15:6 17:21, 22

19:25 20:16

21:24 27:18, 21

28:14 50:19

56:24

**12**, 3:12**12-11-12-01** 4:19**12th** 3:4, 7**13** 2:6, 7, 12, 20  
18:8, 9 19:8, 19  
30:23 32:4 39:6,

9 43:20

**13,551** 10:21**13,555** 14:13**13,568** 14:22**13,625** 11:5

14:24

**13,625-foot** 15:3**13,762** 33:18

35:9

**13,969** 15:17**13,970** 17:16**13,990** 17:16**14** 4:21 6:9 7:5,

9, 12 9:23 11:4

56:22

**14,012** 15:18**14-10** 14:2, 10**14-3** 6:13 9:14

10:10 12:25

14:21

**14-7** 14:1, 15**15** 2:13, 13, 21,

21, 22 21:1 42:6

44:11, 14 46:13

49:1, 10

**1-5** 2:12, 20 39:6,

9

**16** 2:8, 14, 23

50:9 51:2, 8

52:21 56:24

**1-6** 2:13, 22 49:1,

10

**160** 6:8 37:25

41:6

**160-acre** 6:15

9:20 10:4 38:12

50:20 53:2 54:8

**160-acres** 26:20**162** 56:22**16816-B** 9:16**17** 2:4**1-7** 2:12, 19

27:18, 21

**17**, 5:8**1759** 12:20**18** 2:11 21:1**18th** 17:24**19** 2:18 31:11

32:9, 13, 19, 22

40:24

**1978** 52:4**1979** 52:5**< 2 >****2** 4:20 22:13

28:20 31:14

33:5 35:24

36:16, 23 42:22

44:18

**2**, 22:10 33:1**2.7** 36:2**20** 2:19 31:12

32:9, 18, 23 40:24

**20**. 32:15**200** 18:16 38:18**2011** 53:5**2011**. 53:6**2013** 1:4 3:7, 13,

17 17:17

**20-13** 31:9 32:12

33:23

**2013**, 3:4 4:14**2013**. 1:10 17:24**21** 2:5**232** 17:19**240**, 41:6**240-acre** 38:15**24-hour** 17:17**251** 18:6**26** 50:18**26-13** 24:25**26-14** 24:25**26-4** 52:23 54:15**27** 2:12, 19

20:12 21:1, 3

23:12 24:8

26:20, 25

**27**. 22:9**27-15** 27:4 29:8,

15

**27-16** 21:4 22:6

23:19 24:24

25:9 27:25 30:14

**28** 2:20**29** 40:4**29-13** 35:10**< 3 >****3** 4:24 10:7

12:10 23:18, 25

28:20 34:5 35:1

**3**, 23:16**3,905** 18:3**3,987**. 17:20**3**. 10:6 13:12

45:12

**30** 40:4 56:22**30th** 17:17**32** 2:6**33** 48:7**39** 2:12, 20**3D** 10:23 12:4

13:25 33:8 34:8

35:21 44:19

**3D**, 37:10**< 4 >****4** 4:25 6:10 7:6,

16 10:5 12:3

19:18 24:4, 5

34:18 35:19

36:1, 24 42:19

43:24 44:8 46:7,

18 49:5, 7 50:18

**4**. 35:22 46:17**4.2396** 54:7**40** 23:6, 7**400-1-2.02** 31:14**400-1-2-.02** 42:22**40-acre** 6:13

9:18 10:14

26:23 31:8

32:16 37:14

42:14 43:23 45:3

**43** 2:7**44** 2:13, 21**46** 2:21**49** 2:13, 22**< 5 >****5** 5:6 7:16

12:15 19:18

25:13 26:15

28:20 31:12, 13

32:10, 10 34:18

36:14, 15, 24

39:4 42:15, 19 43:24 44:8 45:10 46:7 48:2 49:5, 7 5, 32:9 50 10:25 22:19 24:13 33:7, 19 50-foot 22:19 51 2:14, 23 52 2:8 5-8 44:2 45:2, 19 46:2 5A 25:24 28:21	9-10-13-02 5:3 9-10-13-03 5:4 9-10-13-04 6:4 9-10-13-04A, 5:16 9-10-13-05 6:12 9-10-13-06A 20:1 9-10-13-07 30:24 9-10-13-08A, 4:21 9-10-13-09 42:7 9-10-13-10 50:10 925 17:18	acres 6:8 37:25 38:18 54:11 acronym 29:3 across 12:7 action 56:13 activity 28:6 actual 22:22 25:16 add 20:25 23:12, 19 26:21 added 13:17 30:15 addition 22:7, 8 23:2 additional 30:16 address 4:5 22:17 address. 20:5 31:2 addressed 8:14 adjourned 55:16 adjourned. 55:14 adjournment 1:9 Administration 1:19 Administrative 31:14 42:23 admit 51:6 admitted 3:8, 13, 19 7:23 20:15 28:13 34:21 39:18, 19 46:11 49:3 55:3 admitted. 6:22 7:14 19:1 20:21 27:20 39:8 44:13 adopted 6:7 advantage 47:22 advantageous 45:5 47:6 Affidavit 2:10, 10, 13, 14, 14, 15, 16, 17, 19, 20, 21, 21, 23, 23, 24 6:17, 20, 23 7:14, 15, 20, 22, 25 8:9 10:15 16:18 19:8, 9 20:10, 14, 16, 20 21:6 28:13, 14 31:17	34:16, 20 39:17, 18 43:2 44:6, 10, 11, 13, 14 46:7, 10, 13 49:8, 9 50:21, 22, 23, 24 51:2, 4, 4, 8, 10, 10, 14, 14 53:17, 19, 22 55:3, 4, 5, 5 affidavit, 51:13 affidavits 54:24 again 35:8 ago 27:5 29:18 agreements 52:7 ahead 3:25 20:15 51:6 ALABAMA 1:1, 2, 8, 9 3:15 6:5 20:13 21:2 31:13 42:22 50:19 52:24 56:3, 23 Alabama, 52:10 Alabama. 5:21, 22 6:11 9:8 20:7 42:20 50:14 all 7:3 38:15 all. 55:9 allegations 8:12 16:21, 25 43:6 also 3:18 Alta 44:3 45:11 Altoona 50:14 am. 21:10 43:8 53:23 amend 20:23 amended 2:14, 23 50:23 51:3, 9, 13, 16, 20 53:19 55:5 amending 27:24 amendment 51:18 Amoco 33:17, 20 34:1, 6, 13 35:3, 4, 9 36:5 amount 22:23 amplitude 36:2 an 20:9 29:21 31:13, 16 34:10, 15 36:12 37:24 53:16
< 6 > 6 2:10, 16 5:7 6:11 7:6, 16 10:5 19:18 23:10 25:25 26:18 47:18 49:5, 7 6,000 18:5 6.7834 54:10 6-18-13-04 4:20 6-18-13-12 4:24 6-20-11-05 14:14 640-acre 10:1	< A > a 6:14 7:9 10:12 11:4 12:18 13:3, 15, 20 14:12 18:15 19:2, 8, 23 24:18 25:9 27:11, 25 28:5, 25 30:7 31:7 34:5 37:6 42:2 45:7, 15 49:15 50:19 54:7 56:9 A' 11:24		
< 7 > 7 2:10, 17 5:1 11:25 14:4, 5 26:3, 13 27:16 28:21 7. 26:1, 11 7-20-10-07 5:9 7-30-13-10 4:25	< A > A. 28:13 A'. 22:16 24:15, 16 a.m 3:3 a.m. 3:1 55:16 abandoned. 5:11 able 35:6 Absolutely 41:13 Absolutely. 27:14 abstract 53:10, 14 abstracting 52:5 accepted 40:11 accessing 52:8 accumulation 11:16 14:21, 24 accumulations 11:14 accurately 54:2 acquisitions 52:5, 8		
< 8 > 8 15:1 8, 5:2 8-14-13-01 5:7 8-14-13-02A 5:8 878 16:2			
< 9 > 9 2:3 15:10 9, 5:3 9,000 18:15 9-10-13-01 5:2			

<b>analysis</b> 18:2 52:6	<b>approximately</b> 24:13 35:13 36:2 37:18 38:18 54:10	<b>B</b> 49:10	<b>blue</b> 10:16 13:3 14:12 22:6
<b>and</b> 1:7, 16 2:14, 23 3:6, 7, 9 9:9 11:17 12:11, 16 22:7 25:6 28:20 33:21 34:22 38:22 39:12 40:20 41:9 43:21 46:11, 20 47:5, 18 49:3, 8 50:22 54:19 55:10	<b>April</b> 1:19	<b>B.</b> 19:9 49:9	<b>bluer</b> 23:2
<b>anhydrite</b> 45:16 46:1	<b>ARB</b> 12:10, 11, 12, 13, 14, 15 13:13, 14, 17 14:6 46:20	<b>bachelor's</b> 52:3	<b>BOARD</b> 1:1, 7, 8 3:16, 20, 22 4:12, 15 5:6, 9 7:3, 7 8:7, 10 10:15 16:13 20:22 21:15 22:2 24:6 27:24 30:22 31:7 37:22 41:9, 11 42:3, 4, 14, 22, 25 43:3 44:9 51:24 54:24
<b>annotated</b> 32:20 35:4	<b>are</b> 9:10 10:3 12:17 19:7 30:11, 14	<b>back</b> 14:3 36:7 37:22 41:9, 12 44:3 45:10, 15, 24 47:12	<b>Board.</b> 8:4 19:24 27:10 41:22 50:8 55:11
<b>announcing</b> 3:15	<b>are.</b> 54:1	<b>base</b> 15:17 25:1, 4	<b>Board's</b> 3:9 26:18
<b>answers</b> 56:8	<b>area</b> 9:12, 13 10:2 11:20 13:6 23:11 30:13, 16 38:10, 13, 24, 25 39:22, 23 41:6 44:21 45:9 46:19	<b>based</b> 10:7, 18 11:20 18:7 35:14 37:10, 23 38:8 52:12 54:24	<b>Bolin</b> 4:2 19:10 29:14, 21 30:3, 7, 13, 18 41:18, 23 49:14 55:6
<b>anticipate</b> 30:5, 16 33:25 36:21 38:7, 20 45:25	<b>areas</b> 11:1	<b>basically</b> 12:12	<b>Bolin.Deputy</b> 1:18
<b>anticipating</b> 36:11	<b>array</b> 15:13	<b>basis</b> 30:3	<b>book</b> 19:7
<b>anticlinal</b> 33:22 34:12 35:15	<b>as</b> 8:23 17:8 21:22 25:25 26:2 28:22 32:2 37:8 43:18 47:22 52:19 53:18	<b>basis.</b> 53:15	<b>book,</b> 14:3
<b>anticline</b> 10:25	<b>ask</b> 6:18	<b>be</b> 10:2 17:2 37:20 40:16 42:8 45:23 48:6 50:25	<b>booklet</b> 12:2
<b>Antonio.</b> 42:10	<b>asked</b> 16:12	<b>bed</b> 4:6	<b>booklet,</b> 21:25
<b>any</b> 39:15 44:5 49:12 54:25	<b>asking</b> 6:6, 7 10:4 20:22 30:15 31:7 36:12 40:8 42:14 46:8	<b>been</b> 29:15 51:23	<b>bottom</b> 12:8
<b>anymore</b> 41:4	<b>assume</b> 30:4 40:11	<b>BEFORE</b> 1:12 42:24	<b>bottomhole</b> 9:16 10:15 16:1 18:3, 4, 14 27:7 29:19, 25 32:11, 14
<b>anywise</b> 56:14	<b>assuming</b> 37:25 38:2, 14	<b>beginning</b> 4:14	<b>boundaries</b> 13:7
<b>apex</b> 33:23 35:16 36:9, 11, 17, 21 37:4, 8 47:8	<b>at</b> 14:17 15:16 35:15 40:6	<b>behalf</b> 3:22 5:25 42:13	<b>Branch</b> 20:24 22:7 23:1, 3, 4, 9, 20 25:7, 11 26:19, 21 27:13 28:2
<b>apologize</b> 3:25 44:16, 17	<b>attorney</b> 53:7	<b>being</b> 49:7	<b>briefly</b> 51:25
<b>appeared</b> 21:5	<b>attributes</b> 13:22	<b>belief</b> 53:25 54:4	<b>Brooklyn</b> 50:21 51:19
<b>appearing</b> 3:10	<b>available</b> 34:19	<b>belief.</b> 54:21	<b>Brown</b> 33:17 34:1, 6 35:3, 9, 11, 25 36:19
<b>appointing</b> 3:21	<b>avoid</b> 48:21 54:20	<b>believe</b> 14:14 23:8	<b>Buckner</b> 35:8 45:16, 25 47:1
<b>appreciate</b> 41:16	<b>avoiding</b> 48:14	<b>Bell</b> 42:15 44:2 45:15, 19 46:2 49:17	<b>Building</b> 1:8
<b>appropriate</b> 12:6, 17 14:22 51:1	<b>aware</b> 51:22	<b>Benjamin</b> 52:23 54:15	<b>business</b> 52:4
<b>approval</b> 27:24	< B >	<b>Berry</b> 1:16	<b>but</b> 25:15 45:4
<b>approve</b> 31:7 42:14		<b>best</b> 47:22 53:24 54:3	
<b>approved</b> 10:15		<b>between</b> 14:15	
<b>approves</b> 42:4		<b>beyond</b> 38:23	
<b>approximate</b> 54:6		<b>bit</b> 13:16	
		<b>Black</b> 5:1 18:13	

by 4:24, 25 5:5  
50:16 56:10

< C >

**C.** 55:5  
**call** 4:1, 1 9:11  
**called** 21:9  
**Campus,** 1:8  
**can** 33:19 47:2  
**case** 38:22  
**catches** 46:22  
**cause** 5:9  
**cause.** 56:14  
**CCR** 56:22, 22  
**Cedar** 32:23 40:3  
**center** 37:18  
**certain** 4:11, 13  
5:10 17:14  
**certainly** 38:1  
**certify** 56:6, 12  
**change** 38:7  
51:20  
**changes** 12:20  
**Chicken** 20:24  
22:7 23:1, 3, 3, 9,  
20 25:7, 10  
26:18, 21 27:13  
28:2  
**Choctaw** 42:20  
43:25  
**Cinco** 4:25  
**circle** 10:16 29:8  
**circle.** 10:11  
**City** 45:14  
**clarification** 49:16  
**clarify** 19:17  
**clearly** 34:12  
36:10, 20 47:3  
**close** 41:25  
47:13  
**closing** 11:5  
**closure** 11:1, 1, 6  
13:9 14:11 15:3  
38:17, 19 44:21  
46:20  
**closure.** 45:6  
**coal** 4:6  
**Code** 42:23  
**Code.** 31:15

**Coffin** 13:18  
14:2, 10  
**coincident** 36:19  
**COLEMAN** 2:8  
50:11, 11, 16  
51:12, 15 52:12  
54:23 55:8, 9, 12  
**Coleman.** 51:7  
**COLEMAN:** 52:21  
**collect** 19:20, 21  
**collected** 7:18  
17:24  
**color** 23:2  
**color.** 13:4  
**column** 38:8  
**come** 33:13, 22  
35:15 37:22  
41:9, 12 51:21  
**comes** 26:8  
38:13  
**comments** 5:12  
**comments.** 5:14  
**commercial** 37:21  
**Commission**  
56:24  
**Commissioner**  
56:23  
**common** 32:23  
38:24 39:20 41:2  
**Common.** 40:1  
**communication**  
49:17, 18, 23  
**communitization**  
52:7  
**compactionally**  
45:22  
**companies** 52:9  
**Company** 4:19,  
21, 22 32:24  
**compensation**  
50:18  
**competitive** 28:6  
**compiled** 3:10  
**complete** 25:19  
47:11 49:21 50:2  
**completed** 37:21  
**concerning** 8:13  
46:8 53:8

**condensate** 9:25  
13:18 17:19  
18:11, 16  
**condition** 18:7  
**conduct** 3:21  
18:14  
**conducted** 18:4  
29:21  
**conducted.** 18:7  
**Conecuh** 50:19  
52:23  
**confidence** 7:18  
**confidential** 7:17  
19:7, 17, 20 27:9  
30:11 31:5  
34:17, 19, 22  
35:20 46:6, 11  
49:8  
**confidential.** 46:9  
49:6  
**Confidentiality**  
2:10, 17, 21 7:16,  
21, 22 8:1 19:9  
46:10, 14 49:9  
**Confidentially**  
34:20 39:17 46:8  
**configuration**  
13:5  
**confirmation** 3:17  
**confused** 39:20  
**connection** 52:22  
53:2, 14  
**consider** 30:4  
40:7  
**considered** 7:17  
**considering**  
47:15  
**consist** 6:8 22:8  
42:16  
**consisting** 9:21  
15:24 31:9 48:5  
**consists** 22:8  
**consolidate** 6:1  
**constructing**  
10:22  
**contact** 11:12  
14:13, 18  
**contained** 10:3  
**contested** 4:13

**continue** 35:17  
36:8  
**continued** 4:24  
**continues** 46:22  
**continuity** 24:19  
25:5  
**contour** 10:24  
11:5 15:4 22:13,  
18 24:17 33:5, 7,  
19 46:19  
**contours** 38:19  
**contours.** 22:19  
**control** 38:4 44:1  
**conversions**  
13:11  
**copies** 3:14  
**copy** 17:13  
**core** 38:3  
**cored** 27:6 29:18  
**cores** 27:8  
**corner** 32:13, 14  
**Corporation** 5:1  
31:7 50:12, 17  
52:24  
**Corporation.**  
30:24 50:10  
**correct** 16:16, 19  
19:13, 21 23:8,  
14 24:1 26:15  
28:7 29:16 37:2,  
5, 16, 17 38:17  
39:1 43:3 46:3  
47:9 48:2, 11, 16  
53:19, 24 54:8,  
12, 15 56:10  
**correct.** 23:15  
24:2 26:16, 22  
28:8 32:25 37:3,  
13 48:12, 17  
53:3 54:9, 16  
**corrections** 5:12,  
14  
**correlate** 35:7  
**correlation** 35:4  
**correlative** 16:8  
18:19 28:3 35:6  
39:13 48:19  
54:19  
**corresponds**

13:10	8, 9 44:19 47:4	<b>deviates</b> 13:2	30:23 42:6 50:9
<b>counsel</b> 56:12	<b>data.</b> 36:4	<b>dew</b> 18:3	51:16
<b>County</b> 6:5, 11	<b>datum</b> 10:17	<b>different</b> 4:5	<b>docket.</b> 6:1
9:9 20:13, 25	15:5	<b>dip</b> 13:9 35:18	<b>don't</b> 41:3
31:13 42:20	<b>David</b> 1:18 2:5,	36:6	<b>down</b> 44:25
43:25 50:19	6 20:6 21:5, 20	<b>dip.</b> 36:9	47:12
52:24 56:4	31:3, 16, 25	<b>dips</b> 23:5	<b>Dr</b> 1:16, 18 3:3,
<b>County,</b> 21:1	<b>Davis</b> 56:14, 22	<b>DIRECT</b> 2:3, 4, 5,	6, 24 4:3 19:10
<b>County.</b> 10:5	<b>day</b> 1:10	6, 7, 8 9:1 17:10	29:14, 21 30:3, 7,
<b>couple</b> 29:24	<b>day,</b> 17:18	21:24 32:4	13, 18 41:18, 23
<b>course</b> 37:4, 21	<b>day.</b> 18:16 24:8	43:20 52:21	49:14 55:6
<b>cover</b> 38:10, 12	<b>days</b> 29:25	<b>direction</b> 7:7	<b>Dr.</b> 4:1
<b>Cox's</b> 14:13	<b>decide</b> 41:10	<b>directionally</b> 9:16	<b>draped</b> 45:23
<b>Craft-Brown</b> 31:9	<b>declared</b> 27:12	10:13 13:1	<b>drill</b> 36:11, 24
32:12 33:23	<b>declaring</b> 27:25	<b>directions</b> 44:9	41:5 47:8 48:4
35:16 36:20, 25	<b>defined</b> 15:16	<b>directly</b> 45:18	<b>drilled</b> 9:15, 16,
<b>Creek</b> 32:23 40:3	22:25	<b>Director</b> 1:18	18 10:12, 13
<b>crest</b> 44:22	<b>defines</b> 28:22	<b>disclosure.</b> 7:24	11:3 13:1, 25
<b>crestal</b> 46:24	<b>definition</b> 15:11	34:23 46:12	27:5 29:9 33:20
47:6, 10, 13	<b>degree</b> 52:3	<b>discovered</b> 16:5	44:3 45:4, 11
<b>cross</b> 46:24	<b>degrees</b> 18:6	<b>discoveries</b> 12:4	52:23
<b>crosses</b> 12:20	<b>Delta</b> 15:14	<b>discovery</b> 6:14	<b>drilling</b> 2:14, 23
<b>crossing</b> 16:5	<b>demonstrate</b>	9:8, 14, 25 10:10,	6:13 9:18, 20
<b>cross-section</b>	34:12	21 11:3, 11, 13,	10:14, 18 15:22,
11:24 14:5	<b>demonstrates</b>	17, 21 13:19	23 30:16 31:8
22:16 24:15, 16,	35:20	14:1, 9, 17 15:8,	32:17 33:23
17, 18 25:3, 5, 8,	<b>density</b> 15:14	12	36:21 38:2
13, 14 26:8 34:2,	<b>department</b> 32:22	<b>discovery.</b> 15:9	41:24 42:14
4, 6, 25 35:2	<b>depending</b> 41:8	<b>discussed</b> 29:9	47:20, 25 48:21
36:15 45:14	<b>depicted</b> 35:14	<b>dismissed</b> 4:18	50:20, 23 51:3, 9,
<b>cross-section,</b>	<b>depicting</b> 15:4	<b>displacement</b>	18 53:18 54:20
34:9	<b>depth</b> 10:1, 18,	47:3	<b>dry</b> 13:24 34:1
<b>curative</b> 52:6	22 13:11 14:21,	<b>display</b> 12:18, 23,	<b>duck</b> 3:25
<b>current</b> 14:1	22, 23 15:17, 18	24 13:15, 22	<b>due</b> 3:8 12:19,
<b>currently</b> 18:15	33:13, 14	<b>display.</b> 12:21	19
25:7 27:7, 8	<b>depth.</b> 47:14	<b>displayed</b> 15:14	<b>duly</b> 8:22 17:7
41:24 54:11	<b>derived</b> 33:7	<b>distance</b> 35:13	21:21 32:1
<b>curves</b> 18:10	36:3	<b>Distances</b> 32:19	43:17 52:18
<b>cuts</b> 45:1 46:24	<b>describe</b> 6:25	<b>distinct</b> 11:15, 15	<b>Durango</b> 5:2, 3
	22:1, 11 29:4	13:21 14:19	<b>Durango.</b> 5:4
	32:6 33:2 35:22	<b>diverse.</b> 40:4	
<b>&lt; D &gt;</b>	47:19	<b>division</b> 52:6	<b>&lt; E &gt;</b>
<b>Dallas</b> 31:3	<b>designated</b> 7:23	<b>do</b> 19:4 29:23	<b>E</b> 56:1
<b>dark</b> 36:1	<b>developed</b> 45:17	<b>do.</b> 54:5	<b>each</b> 25:3
<b>dashed</b> 13:8	<b>Development</b>	<b>docket</b> 3:7, 8, 11,	<b>early</b> 53:6
14:12	20:2 28:1 39:12	13 4:11, 18, 20,	<b>East</b> 6:11 7:7
<b>data</b> 12:3 17:22	50:1	21, 24, 25 5:1, 3,	10:5 12:5 16:3
18:10 33:9, 11,	<b>developmental</b>	4, 6, 7, 9, 16 6:4,	31:10, 13 32:10,
12, 12, 13 34:8	28:5	12 14:14 19:25	18 34:11 36:15,
36:4 38:1, 2, 3, 3,			

18 37:18 44:24 46:21, 21 50:19 <b>educational</b> 52:1 <b>effect</b> 4:8 7:11 <b>either</b> 25:24 <b>elevation</b> 11:13 <b>Elliott</b> 24:25 25:6 <b>else</b> , 55:7 <b>encapsulates</b> 38:18 <b>encompass</b> 38:15 <b>encompassed</b> 19:13, 14 <b>encountered</b> 13:2 <b>encountering</b> 45:25 <b>end</b> 7:18 <b>engaged</b> 52:22 <b>engineer</b> 16:15 <b>engineer.</b> 17:3 <b>Engineering</b> 15:21 32:8 <b>enlarge</b> 41:12 <b>entire</b> 38:25 50:2 <b>entirely</b> 11:13 <b>equal</b> 33:6 35:13 <b>equals</b> 22:5, 18 <b>Escambia</b> 4:20 <b>Esenjay</b> 44:2 45:2, 4, 19, 24 46:2 47:12 <b>essence</b> 42:1 <b>essentially</b> 49:19 <b>establish</b> 6:4 21:2 <b>establishing</b> 18:18 <b>establishment</b> 11:21 <b>Evans</b> 5:10 <b>event</b> 44:20 <b>evidence</b> 19:23 27:16 30:21 40:7 41:9, 21 50:7 55:10 <b>evidence.</b> 6:21, 24 7:21 8:1 18:25 19:3 20:17 27:19, 22 28:15 39:7, 10	44:12, 15 46:14 49:2, 11 51:5, 11 <b>evident</b> 13:20 14:16 <b>EXAMINATION</b> 2:2, 3, 4, 5, 6, 7, 8 9:1 17:10 21:24 32:4 43:20 52:21 <b>examined</b> 8:22 17:7 21:21 32:1 43:17 52:18 <b>exception</b> 31:14 42:21 <b>exceptional</b> 10:13, 14 16:4 31:8 36:13 37:2 40:9 42:14, 16 43:24 48:10, 15 <b>excuse</b> 34:3 <b>Exhibit</b> 9:7, 19 10:6, 7 11:16, 25 12:1, 3, 9, 9, 10, 15, 16 13:12 14:3, 4, 5, 6, 14 15:1, 10, 19, 20 17:12, 13, 21, 22 18:8, 9, 9 19:7, 8, 9 21:25 22:1, 3, 3, 10, 12, 13 23:10, 13, 16, 18, 25 24:4, 5, 14, 16 25:13, 24, 24, 25, 25 26:1, 3, 11, 13, 15, 18 27:3 28:13, 20 32:5, 6, 8 33:1, 2, 3, 5 34:5 35:1, 19, 22, 24 36:1, 14, 15, 16, 23 39:18, 19 43:21 44:18 45:7, 9, 12, 13 46:7, 17, 18, 25 47:18 49:8, 9 55:3, 4, 5 <b>exhibit</b> , 24:3 26:17 <b>exhibit.</b> 9:2 10:19 13:23 23:17	<b>exhibited</b> 18:3 <b>exhibiting</b> 17:20 <b>EXHIBITS</b> 2:8, 11, 12, 12, 13, 18, 19, 20, 22 7:16, 23 8:16 9:2 10:24 11:9, 20 12:1, 11 16:24 18:21, 24 19:1, 2, 6, 7, 8, 18, 18, 19 21:11 27:16, 18, 20, 21 28:20, 25 31:18 34:15, 18, 22 39:4, 6, 8, 9 43:9, 21 46:6, 9, 11 47:21 48:24 49:1, 3, 4, 5, 7, 10 <b>exhibits.</b> 19:20, 22 <b>existing</b> 23:1 25:7 <b>experience</b> 52:1 <b>expert</b> 17:3 21:15 31:21 43:12 52:14 54:17 <b>expert.</b> 9:5 21:17 <b>Expires</b> 56:22, 24 <b>explain</b> 9:3 43:22 <b>Exploration</b> 4:19, 22 <b>express</b> 15:13 <b>extends</b> 13:17 14:6 <b>extension</b> 25:10 50:20 51:19 <b>extracted</b> 34:8 <b>extreme</b> 37:2 40:9 48:14 <b>extremely</b> 48:10  < F > <b>facility.</b> 47:23 <b>fact</b> 53:4 <b>fact</b> , 34:18 <b>factors</b> 47:15 <b>fairly</b> 54:2 <b>fall</b> 35:17 36:8	<b>familiar</b> 8:12 16:21 21:8 43:5 53:21 54:14 <b>far</b> 40:13, 14 47:23 <b>fault</b> 23:5 44:23, 24, 25 46:23, 23 <b>fault.</b> 24:23 <b>faulted</b> 45:21 <b>faulting</b> 44:22 47:5 <b>faults</b> 47:4 <b>feature</b> 33:22 35:15 <b>feature.</b> 47:7 <b>federal</b> 52:7 <b>feet</b> 10:21, 25 11:5 14:22 15:4, 5, 6, 17, 18 16:2, 2 17:16 22:5, 18, 19, 24 23:6, 7 33:7, 18, 19 48:7 <b>feet</b> , 33:6 <b>field</b> 6:4, 6, 7, 7, 14, 16 9:10 10:9 11:10, 11, 13, 14, 17 13:18, 19 14:8, 10, 10, 12, 17 15:9, 12 18:18 20:24, 24 21:2 22:7 23:1, 3, 4, 9, 10, 20 25:8 26:18, 19, 21 27:13, 24 28:2, 5, 7, 22, 22 29:1 30:15 50:21 51:20 <b>Field.</b> 9:11 11:22 15:2 20:19 25:11 <b>fields</b> 14:19 <b>Fieldwide</b> 52:6 <b>figures</b> 54:6 <b>file</b> 8:10 16:19 21:6 31:16 43:3 <b>filed</b> 6:17 16:22 17:13 42:13 43:6 44:6 46:7 50:24, 25 51:15
---	--	--	---

**finally** 18:8  
**find** 35:7  
**finishes** 41:25  
**first** 3:11 5:16  
 8:3, 22 9:2  
 11:25 17:7, 14  
 18:10 21:21  
 22:1, 17 24:5  
 32:1, 5 35:20  
 43:17 52:18  
**fit** 27:23 30:12  
**five** 46:19  
**Fletcher** 50:10,  
 11, 17 52:24  
**Florida** 52:11  
**flow** 17:18  
**flowing** 17:19  
 18:12  
**fluid** 30:2  
**following** 4:17,  
 23 5:5 34:5  
**follows:** 4:9  
 8:23 17:8 21:22  
 32:2 43:18 52:19  
**for** 10:9 44:9  
 53:1  
**force** 50:17  
**foregoing** 56:6, 9  
**form** 17:13 38:10  
**formation** 10:8  
 33:6  
**forth** 53:21  
**found** 10:21 11:8  
**Foundation**  
 33:17 34:1 35:3,  
 9, 11, 25  
**four** 33:16 41:2  
**frac** 29:24 30:2  
**fracked** 23:23  
 27:7 29:19  
**fracturing** 4:5  
**from** 24:9 26:9  
 33:7  
**full** 23:10 38:21  
 45:25  
**further** 44:6  
 56:12  
**Furthermore** 3:14

**< G >**  
**gain** 36:7  
**gained** 38:1  
**gamma** 15:13  
**GAS** 1:1, 8 3:16,  
 20 4:7, 12, 15  
 5:17, 25 6:4 7:3  
 9:15, 25 11:6, 8,  
 12, 17 12:24  
 13:18 14:13, 18,  
 23 15:11, 16, 17  
 17:18, 20 18:2, 6,  
 11, 15 27:10  
 42:22 52:2  
**gave** 7:7  
**general** 4:6  
**generally** 32:13  
 33:10 35:24  
**geographic** 37:18  
**geological** 34:10  
 35:2 37:11 48:14  
**geologist** 21:16  
**geologist.** 21:7  
 31:17 43:13  
**geology** 23:12  
**give** 41:7 47:20  
**given** 25:3, 4  
 56:10  
**giving** 21:16  
 31:22 40:15  
 41:14  
**go** 3:25 4:7  
 14:3 20:15  
 23:16 26:17  
 33:21 34:24  
 35:12, 19 36:5, 6  
 41:10 44:5 51:6  
**goes** 14:8  
**going** 25:22, 23  
 35:25  
**Goodway** 6:6  
 9:11 10:8 11:10,  
 11, 14, 17, 22  
 13:17, 19, 20  
 14:8, 10, 10, 12,  
 17, 19 15:2, 12  
**governmental**  
 7:10 11:2 36:25  
 48:4, 15  
**granted.** 6:2

**granting** 16:7  
 18:17 39:11  
 48:18 54:18  
**graphic** 34:25  
**graphically** 25:2,  
 15 35:21  
**greater** 15:6, 7  
**green** 18:12 47:2  
**grid** 12:4, 6  
**gross** 22:23  
  
**< H >**  
**HALE** 2:7 42:10,  
 10, 24 43:1, 4, 8,  
 11, 12 44:17  
 48:25 49:19, 24  
**HALE,** 43:16  
**Half** 6:8, 9 7:4, 5,  
 8, 12 9:21, 22, 22,  
 23 15:24, 25  
 31:10, 11 32:17,  
 18, 22, 23 39:24  
 40:23, 24 42:17,  
 18 47:25 48:1  
**HANBY** 2:4 5:22,  
 22 16:11, 14, 17,  
 20, 23 17:1, 2, 11  
 18:22  
**HANBY,** 17:6  
**hand** 25:22  
**handed** 12:2  
 21:14  
**hanging** 38:22, 23  
**Harrell-Carney**  
 44:3  
**has** 51:16  
**have** 14:11  
 23:10 25:18  
 38:24  
**have.** 8:8, 15, 18  
 16:14 17:1  
 21:13 28:11  
 30:18, 20 31:20  
 41:20 43:1  
 52:25 53:9, 12  
 55:1  
**having** 8:22  
 17:7 21:21 32:1  
 43:17 52:18

**Haynesville** 35:5,  
 6  
**hear** 4:10, 12  
**heard** 53:16  
**Hearing** 1:6 3:1,  
 3, 21, 21 4:10, 13  
 5:5, 6, 23 20:8  
 21:9 23:11 31:4  
 34:21 39:4  
 40:12 42:11  
 50:15 55:14, 16  
**hearing.** 7:19  
 56:11  
**held** 7:18 27:9  
 30:11 46:9  
**HIGGINBOTHAM**  
 2:5 20:6 21:5, 8,  
 10, 13, 15 22:1,  
 11 23:17 24:4  
 25:12 26:7, 13  
 27:23 28:19  
 29:2, 10, 11, 14,  
 17, 23 30:6, 9, 17  
**Higginbotham,**  
 20:6 21:20  
**Higginbotham.**  
 27:17  
**high** 33:25  
**higher** 11:12  
**highlighted** 10:9  
 14:12 17:14, 23  
 18:1  
**highly** 28:6  
**his** 21:6  
**hold** 2:14, 23  
 50:22 51:3, 9  
 53:17  
**hole** 34:1  
**holes** 13:24  
**hoping** 50:1  
**horizon** 13:4  
**hundred** 33:9  
**hydraulic** 4:5  
**hydrocarbons**  
 28:24  
  
**< I >**  
**I** 3:24 11:20  
 13:16 20:3 30:9  
**idea** 40:16 41:14

<p><b>identical</b> 11:20 12:9 13:23 40:22 <b>identification</b> 26:10 <b>if</b> 40:9 <b>illustrate</b> 25:9 <b>illustrated</b> 25:2 <b>illustrates</b> 23:21 24:7, 19, 20 25:5 <b>immediately</b> 47:2 <b>in</b> 1:7 4:15 8:16 11:12 16:24 21:11 34:1 36:23 44:6 45:19 47:10 52:3, 4 53:7, 21 56:13 <b>in.</b> 31:1 <b>inasmuch</b> 7:9 <b>inch</b> 22:4, 18, 19 33:6 <b>includes</b> 44:1 45:14 <b>including</b> 13:25 17:15 <b>Incorporated</b> 15:21 <b>Incorporated.</b> 5:17 20:2 <b>incorporating</b> 34:6 35:2 <b>independents</b> 52:10 <b>INDEX</b> 2:2, 8 <b>indicated</b> 27:2 45:6 47:21 <b>indicates</b> 44:21 45:2 46:19, 25 47:5 <b>indicating</b> 29:15 31:6 <b>indication</b> 41:7 <b>induction</b> 15:13 <b>industry</b> 29:3 52:4 <b>industry.</b> 52:2 <b>information</b> 3:14 7:18 10:18, 23 12:13 17:24, 25 22:11 32:6, 21</p>	<p>33:3 37:10, 24 38:13 53:25 54:4 <b>initial</b> 18:4 <b>initially</b> 17:16 24:8 <b>integrated</b> 33:12 <b>integration</b> 33:8 <b>intend</b> 33:22 <b>intercepted</b> 33:18 <b>interest</b> 20:11 40:20, 23 41:1 45:10 54:3 <b>interested</b> 56:14 <b>interests</b> 54:7 <b>interfacing</b> 36:3 <b>interpretation</b> 38:5, 6 49:16 <b>interpreted.</b> 37:9 <b>interruption.</b> 44:16 <b>interval</b> 11:10 22:18 33:7, 19 45:22 46:19 49:20 <b>interval.</b> 45:17 <b>into</b> 4:7 38:4 <b>involved</b> 53:4 <b>irregular</b> 16:4 <b>is</b> 7:22 9:4 12:6 14:21 15:10 17:11, 25 18:5 19:12, 13 20:14, 20 22:25 23:8 24:14, 25 29:2 33:16 34:20 35:19, 23, 25 36:18 38:2 39:17, 18 41:1 46:10 <b>is.</b> 8:11 16:20 19:15 44:18 <b>Isopach</b> 15:1, 8 22:14, 23 25:9 <b>it</b> 13:1 18:2 23:20 43:25 <b>it.</b> 29:20 42:4 <b>ITEM</b> 2:5, 6, 7, 8, 12, 12, 13, 13, 14, 19, 19, 20, 20, 21, 21, 22, 23 4:18,</p>	<p>20, 21, 24, 25 5:1, 2, 3, 6, 7, 8, 16 6:3 19:25, 25 20:16 21:24 27:18, 21 28:14 30:23, 23 31:22 32:4 39:6, 9 42:6 43:20 44:11, 14 46:13 49:1, 10 50:9, 9 51:2, 8 52:21 <b>item.</b> 21:16 <b>ITEMS</b> 2:3, 4, 10, 10, 11, 16, 17, 18 3:4, 6, 10, 12 4:11, 11, 13, 14 6:1, 20, 23 7:20, 25 9:1 17:10 18:24 19:2 <b>it's</b> 3:2 41:25</p> <p><b>&lt; J &gt;</b> <b>James</b> 42:15 <b>JEFFERSON</b> 56:4 <b>JL</b> 42:7, 13 <b>JOHN</b> 2:8 5:24 42:12 50:12, 14 52:17 <b>Johnson</b> 6:13 9:14 10:10 12:25 14:17, 21 <b>Jr</b> 5:10 <b>JrSecretary</b> 1:16 <b>July</b> 17:17, 24 <b>just</b> 45:3</p> <p><b>&lt; K &gt;</b> <b>KEN</b> 2:4 5:22 17:6 <b>kept</b> 34:16 <b>key</b> 45:1 <b>keying</b> 44:1 45:18 <b>kin</b> 56:13 <b>kind</b> 37:23 41:14 42:1 <b>Kirk</b> 41:24 <b>know</b> 50:2 <b>knowledge</b> 53:25</p>	<p>54:4</p> <p><b>&lt; L &gt;</b> <b>L.L.C.</b> 4:22 <b>L.P</b> 21:4 27:25 <b>labeled</b> 13:3 24:25 <b>laboratory</b> 18:2 <b>Land</b> 20:1 32:21, 24 40:3 <b>landman,</b> 54:17 <b>landman.</b> 52:14 <b>large</b> 41:10 56:23 <b>larger</b> 39:22, 23 <b>last</b> 25:24 <b>Laurie</b> 41:24 <b>Lavon</b> 5:10 <b>lease</b> 2:14, 23 50:22 51:3, 9, 21 52:5 53:17 <b>leases</b> 38:25 53:2 <b>left</b> 12:5, 17 13:15 14:7 <b>left-hand</b> 12:22, 23 <b>legal</b> 37:7, 15 <b>like</b> 26:14 <b>likewise</b> 32:11 <b>limited</b> 13:6 46:4 49:19 <b>limits</b> 6:8 14:24 23:1 27:25 38:23 <b>limits.</b> 6:16 <b>line</b> 12:11, 12, 14, 15, 19, 19 13:2, 13, 14, 17 14:6 15:3, 5 16:2, 3, 3 22:15 24:15, 16, 17 34:9, 11, 25, 25 35:20, 22, 23, 23, 25 36:17, 18 45:8 46:20, 25 48:7 <b>line.</b> 16:6 <b>lines</b> 12:7, 7, 10, 13, 17 13:8, 8 14:12 32:20</p>
---	---	--	--

34:3, 16, 17 36:24 <b>liquid</b> 17:20 <b>listed</b> 22:15, 20, 21, 23, 24 23:21 24:24 40:19 <b>lists</b> 24:5 <b>little</b> 13:16 39:20 <b>LLC</b> 4:19, 21, 25 5:2, 7, 8 42:13 <b>LLC.</b> 42:7 <b>located</b> 9:9 10:4 <b>locates</b> 12:12 <b>location</b> 9:7, 8, 13, 17 10:13, 14, 16, 17 12:24 16:1, 4 22:4 32:10, 11, 12, 14 34:7 35:4, 14 36:8, 10, 19, 21 37:2, 6, 7, 15 40:9, 9 43:25 44:21 45:3, 15, 23 46:22 47:5, 16, 21, 22 48:14, 15 <b>location,</b> 48:10 <b>location.</b> 9:17 <b>log</b> 15:11, 13 23:18, 20, 21 25:14, 16, 18, 23 26:3, 4, 13 34:6 35:3 50:4, 4 <b>log.</b> 15:15 <b>logged</b> 27:6 29:17 <b>logistics</b> 47:23 <b>logs</b> 25:16, 17, 19 26:9 27:8 38:6 49:25 <b>logs.</b> 26:8 <b>Look</b> 10:6 11:25 12:14 22:10 24:3, 14 40:6 47:18 53:10 <b>looking</b> 36:23 40:16 47:8 <b>looks</b> 37:1 <b>losing</b> 37:7, 8 <b>lost</b> 49:19 50:3	<b>lot</b> 18:16 28:6 <b>Louisiana.</b> 52:11 <b>lower</b> 11:18 14:18 <b>lowest</b> 11:5 14:23 <b>lucky</b> 38:21  < M > <b>made</b> 43:6 <b>main</b> 51:17 <b>major</b> 52:9 <b>making</b> 22:22 <b>manner</b> 50:23 <b>map</b> 9:7, 12, 13 10:7, 17, 23, 25 12:3, 8, 9 15:1, 6, 6, 8 22:13, 14, 17, 19, 23 24:18 25:8, 9 26:18 27:2 30:12 33:5, 7, 13, 14 34:3 36:16 44:19, 19 46:18 <b>mapping</b> 13:4 <b>margin</b> 12:23 <b>Marion</b> 6:13 9:14 10:10 12:25 <b>mark</b> 25:24, 25 26:2, 14 <b>marked</b> 26:10 <b>Marker</b> 35:5, 6 <b>markers</b> 35:5 <b>Marvin</b> 1:13 <b>matter</b> 6:18 16:22 20:10 43:6 44:7 54:23 <b>matters</b> 5:5 6:18 8:14 46:8 53:21 <b>maximum</b> 38:17, 18, 20 <b>Mcf</b> 17:18 18:15 <b>McGahey</b> 21:4 22:6 23:13, 19 24:6, 7, 24, 25 25:7, 9 26:23 27:25 30:14 <b>McQuillan</b> 28:18, 19 29:6 42:5 <b>mean</b> 28:23	<b>measured</b> 15:17, 18 <b>meet</b> 38:14 <b>meeting</b> 4:9 <b>meetings</b> 3:5, 16 <b>members</b> 28:10 <b>Merritt</b> 4:4 51:24 <b>Merritt.Hearing</b> 1:19 <b>Mesa</b> 44:3 45:11 <b>Methane</b> 5:1 <b>microlog</b> 22:25 23:20 <b>middle</b> 11:19 33:11 <b>Mike</b> 50:11 <b>mil</b> 46:19 <b>miles</b> 9:10 33:9 <b>mineral</b> 54:7, 11 <b>minimal</b> 49:22 <b>minus</b> 33:18 35:9 <b>Mississippi</b> 52:11 <b>Mobile</b> 53:8 <b>monocline</b> 24:21 <b>Monroe</b> 6:5, 11 9:9 10:5 31:13 <b>monthly</b> 53:15 <b>morning</b> 8:14 <b>motion</b> 5:9 <b>move</b> 33:21 35:11, 12 37:6 42:3 44:18 <b>moved</b> 42:1 <b>Mr</b> 1:13 <b>Mr.</b> 28:17 <b>Ms</b> 1:19 <b>much.</b> 55:12 <b>mud</b> 50:4  < N > <b>name</b> 6:5 8:4 17:15 20:5 31:2 <b>name.</b> 5:20 50:13 <b>named</b> 7:23 <b>Natural</b> 20:1 <b>necessary</b> 37:14 <b>necessity</b> 36:12	<b>need</b> 40:5 41:4, 4 <b>neither</b> 56:12 <b>Net</b> 15:1, 7, 8 54:10 <b>neutron</b> 15:14 <b>new</b> 6:4 14:8 15:9 38:4, 8, 13 <b>next</b> 45:8 <b>Nick</b> 1:16 <b>No.</b> 4:18 5:1, 6 19:25 30:23 42:6 50:9 <b>nomenclature</b> 29:3 <b>nongovernmental</b> 31:8 42:16 <b>nor</b> 56:13 <b>normal</b> 9:25 23:5 24:22 41:10 <b>North</b> 6:8 7:4, 6 9:10, 21, 22 10:5 12:7, 16, 19 13:10, 15, 16 15:24 30:14 31:13 32:10 33:21 35:12, 17, 24 36:6, 8, 9 42:18, 19 43:24 44:8, 23 46:23 48:1 50:19 <b>North,</b> 6:10 36:5 <b>North.</b> 35:18 <b>Northeast</b> 11:16, 22 23:5 24:22 42:17, 17, 19 44:8 45:8, 11, 13, 24 47:25 48:1, 2, 6, 6, 7, 8 <b>Northeast.</b> 44:4 <b>Northwest</b> 6:6, 9 7:5, 8, 10, 12 9:11, 21, 23 10:8 11:4 13:16, 20 14:7, 8, 16 15:2, 12 23:4 24:22 50:18 52:11 <b>nose</b> 33:21 <b>note</b> 9:4 13:14
---	---	---	---

<p>28:12  <b>noted</b> 29:7  <b>Notice</b> 2:10, 13, 15, 16, 19, 20, 21, 24 6:17, 21, 24 7:3, 8, 11 19:8 20:10, 14, 16, 20 28:13, 14 39:18 44:6, 7, 10, 11, 14 49:8 50:25 51:4, 10 55:3  <b>Notice.</b> 51:14  <b>noticed</b> 3:5, 7 20:10 39:22 40:20  <b>notified</b> 7:1  <b>now</b> 51:24  <b>NRG</b> 4:25  <b>Number</b> 6:3 9:7, 15 10:7 12:3, 6, 9, 15 14:5 15:1, 10, 20 22:3, 4, 10, 13 23:10, 16, 18, 25 25:13 26:15, 18 27:3 33:1 34:5 35:1 36:14 51:16, 20  <b>numerous</b> 8:7 53:13</p> <p>&lt; O &gt;  <b>obligations</b> 38:15  <b>obtained</b> 52:3  <b>obtaining</b> 53:2  <b>occasion</b> 53:7, 10  <b>occasions</b> 8:7 53:13  <b>occur</b> 16:2  <b>occurred</b> 11:9 15:7  <b>occurs</b> 11:12 14:17 44:22  <b>of</b> 6:5, 20, 23 7:20, 25 9:23 10:16 11:1 16:7 17:19 18:17 21:2 22:13, 14, 15 23:6 24:19 26:4, 24 28:23 31:9 32:10, 11,</p>	<p>14, 17 34:3 36:3, 8 39:11 42:16 45:18 46:13, 18, 25 47:3, 8 48:7 50:24 54:3  <b>off</b> 44:1  <b>OFFERED</b> 2:8, 10, 11, 11, 12, 12, 13, 13, 15 6:21 7:21 18:25 27:19 39:7 44:12 49:2 51:5  <b>office</b> 3:18 4:15  <b>Officer</b> 1:6 3:21 4:10, 13 5:23 20:8 31:4 34:21 42:11 50:15  <b>official</b> 29:22  <b>offset</b> 14:9  <b>OGB-9</b> 17:11, 13 24:5  <b>OGB-9.</b> 24:4  <b>Oh</b> 26:6  <b>OIL</b> 1:1, 7 3:16, 20 4:7, 12, 15 5:17, 25 7:3 9:15 11:17, 18 12:24 15:2 20:24 22:7 24:8 25:10 26:19 27:10, 13 28:23 38:8 42:22 46:2 52:2, 4, 9  <b>oil.</b> 23:23  <b>Okay</b> 10:6 17:21 18:8, 17 47:18, 24 52:12  <b>Okay.</b> 24:12  <b>Old</b> 9:10 47:12  <b>on</b> 3:21 5:24 13:11 15:14 22:18 35:11 36:10 40:19 42:1, 3, 12  <b>one.</b> 12:14  <b>operated</b> 5:10  <b>Operating</b> 4:21 5:2, 10 30:24 31:7</p>	<p><b>operator</b> 17:15  <b>operators</b> 20:18  <b>opinion</b> 16:7 18:17 27:11 48:18 54:17  <b>opinion,</b> 47:15  <b>optimum</b> 37:11 40:9 47:16 48:14  <b>option</b> 38:14  <b>order</b> 3:20, 22 47:11 52:6  <b>ordered</b> 5:11  <b>orderly</b> 28:1 39:12  <b>orientation</b> 46:21  <b>oriented</b> 44:23, 25 45:8 46:23  <b>original</b> 15:22 25:19 51:14, 15  <b>originally</b> 9:18  <b>other</b> 4:13  <b>our</b> 35:13 36:7 45:1 46:21  <b>out,</b> 38:23  <b>outline</b> 32:16  <b>Outlined</b> 22:5, 6, 25 23:2 31:19  <b>outstanding</b> 54:3, 7, 11  <b>owned</b> 40:2  <b>owners</b> 7:4, 8 20:11 40:20 41:1 54:19  <b>ownership</b> 2:14, 23 32:23 38:24 39:21 50:22 51:2, 8 53:17 55:4, 5</p> <p>&lt; P &gt;  <b>Page:</b> 2:2  <b>parallels</b> 14:6  <b>part</b> 3:22 6:19 18:22 27:11, 12 44:10 46:23 48:25 50:3 51:1  <b>partially</b> 45:21, 21  <b>particular</b> 20:23  <b>parties</b> 56:13</p>	<p><b>path</b> 13:1  <b>Pay</b> 15:1, 7, 8  <b>PE</b> 15:14  <b>peak</b> 36:2 47:2  <b>penetration</b> 33:16  <b>Penn</b> 22:14, 15, 21, 23 23:6 24:18, 20, 21 25:1, 1, 2 26:14 27:11 28:21, 25 29:2  <b>Pennsylvania</b> 29:4, 5  <b>people</b> 39:20 40:19  <b>percent</b> 15:7 24:13 54:7  <b>percentages</b> 40:25  <b>perforated</b> 17:16 23:22, 25 27:6 29:18  <b>performing</b> 52:5  <b>perimeter</b> 33:10  <b>period</b> 17:17 18:13  <b>permanent</b> 21:3  <b>permeability</b> 22:24 23:21  <b>permission</b> 19:20  <b>Permit</b> 9:15  <b>permitting</b> 42:2  <b>personal</b> 51:23 52:12  <b>pertinent</b> 17:22, 23  <b>petition</b> 4:19, 20, 22, 24, 25 5:2, 3, 4, 7, 8, 16, 17 16:8 18:18 20:1, 23 21:9, 12 27:24 30:24 31:6, 19 39:12 41:11 42:7, 13 43:5, 10 48:18 50:10, 16 51:15, 16, 20 54:18  <b>petitions</b> 4:17, 23 8:13 16:22</p>
---	---	--	---

**Petroleum** 5:7, 8  
16:15 17:3 21:7,  
16 31:17 43:13  
50:10, 12, 17  
52:14, 24 54:17  
**pick** 47:4, 11  
50:1  
**Pickens** 20:12,  
25 21:1  
**pink** 13:4  
**pipe** 27:6 29:18  
30:4  
**places** 37:17  
**plan** 42:3  
**plat** 15:20 22:4  
32:8, 20 47:24  
**platform** 15:13  
**please** 14:4 20:4  
22:2, 3 32:7 33:2  
**please,** 33:3  
**please.** 5:19  
6:19 22:12 42:9  
43:22 47:19  
**plugged** 5:11  
**point** 11:6, 24  
12:16 13:11  
18:3 34:14  
37:11 38:4  
**point.** 38:21  
**Pool** 15:2, 11, 16,  
18 25:10 28:22,  
23 50:17  
**porosity** 15:7  
49:25  
**porous** 47:11  
**portion** 9:9  
12:22 23:9  
**portray** 54:2  
**position** 14:18  
22:20 37:8  
44:22 45:2  
46:24 47:6, 10, 14  
**possible** 11:5  
14:23  
**posted** 3:14  
**postings** 3:18  
**potential** 49:17  
**potentially** 38:16

**Pottsville** 28:23,  
24, 25 29:4, 5  
30:7  
**pounds** 18:5  
**Prater** 27:4 29:8,  
15 30:14  
**precisely.** 30:12  
**pre-drill** 37:24  
**pre-filed** 7:15  
20:9 34:15  
**prejudge** 41:14  
**prejudice** 4:18  
**preMesozoic**  
45:22  
**prepared** 8:16  
15:21 16:24  
21:11 25:16  
31:18 32:8 43:9  
**preparing** 25:13  
**presentation** 19:4  
**presented** 33:14  
**presently** 23:23  
29:19  
**preserved** 49:25  
**pressure** 17:19  
18:4, 5, 7, 12, 14  
27:7 29:19 30:1  
**pretty** 37:1  
**prevent** 16:8  
18:19 28:2  
39:12 48:19  
54:18  
**previous** 11:20  
13:23 14:6  
44:25 47:21  
**previously** 6:17  
16:12 42:24  
44:6 45:4 46:7  
**primarily** 52:10  
**primary** 53:1  
**problem.** 42:5  
**procedure** 4:9  
**proceedings** 1:6  
56:7, 10  
**process** 41:10  
**produced** 17:18  
**producer** 37:21  
**producing** 6:15  
18:15 23:23

**production** 9:20  
10:3, 4 11:18  
15:24 17:14, 25  
18:9, 11, 12 21:4  
22:5 24:6, 9  
28:1 37:22, 25  
38:24 41:11  
**productive** 10:2  
23:18 25:10  
28:24 30:5 38:3,  
10, 13, 16 41:6  
50:20 51:19  
**project** 53:5  
**promote** 28:1  
39:12  
**proofs** 3:10, 11  
**properly** 3:5, 7  
**property** 53:8, 11  
**propose** 37:24  
38:10  
**proposed** 6:16  
7:4 10:3, 8 13:6,  
7, 20 14:8 15:2  
19:14 22:7, 8  
23:2 26:21 31:9  
32:11, 12, 17  
34:7 35:3, 14, 16  
36:8, 10, 19  
37:19 39:23  
42:15 43:23, 25  
44:20 45:3, 23  
46:22 47:5, 16,  
20, 24 49:18  
51:18 52:23  
54:3, 15, 19  
**proposing** 9:11,  
19 15:23  
**proprietary** 7:17,  
24 34:22 46:9, 12  
**prospective** 33:10  
**protect** 16:8  
18:19 28:2  
39:13 48:19  
54:18  
**psi** 17:20  
**psig** 18:3  
**public** 7:24  
34:19, 23 46:12  
**publication** 3:10,

11  
**pump** 30:1, 1  
**purple** 22:25  
47:1  
**purpose** 48:13  
51:17  
**pursuant** 1:9 7:2  
**put** 30:1, 10, 12  
37:14  
**PVT** 17:21, 23  
  
< Q >  
**Qualifications**  
8:9 16:18 21:7  
31:17 43:2 52:13  
**Quarter** 6:9, 10  
7:5, 6, 9, 12, 13  
9:21, 22, 23, 24  
11:4 15:25, 25  
20:12, 12, 25  
21:2, 3 22:9  
23:12 26:20, 24,  
24 27:3 31:10,  
11, 12, 12 36:25  
37:1 42:17, 18,  
18, 19 44:8 48:5,  
5, 6, 6, 7, 8, 15, 15  
50:18  
**Quarter.** 7:10  
**question** 16:12  
19:11 25:6 29:7  
39:19 49:15  
**questions** 19:5  
28:10, 17 29:12  
30:18 39:16  
41:16 49:13  
55:1, 2, 7 56:8  
**questions.** 19:10  
41:18 49:14 55:6  
  
< R >  
**Ram** 5:7, 8  
**Range** 6:11 7:6  
10:5 21:1 31:13  
32:10 42:19  
44:8 50:19  
**rates** 17:18  
**ratio** 17:20  
**ray** 15:14

<p>receive 27:16 39:4</p> <p><b>RECEIVED</b> 2:16, 16, 17, 18, 19, 19, 20, 20, 21, 22, 22, 24 3:9, 12 6:24 8:1 19:3 20:17 27:22 28:15 39:10 44:15 46:14 49:11 51:11</p> <p><b>recognized</b> 9:5 17:3 21:17 52:14</p> <p><b>recognized.</b> 17:4 31:23 43:14 52:15</p> <p><b>recommend</b> 4:17, 23 27:23</p> <p><b>recommendation</b> 19:24 30:22 41:22 42:3 50:8 55:11</p> <p><b>recommendations</b> 4:12 5:13</p> <p><b>record</b> 3:2, 23 6:19 19:6 20:18 39:4 48:25 50:24 51:1 52:1</p> <p><b>record.</b> 3:8, 13, 19 18:23 44:10</p> <p><b>red</b> 10:9, 11 13:7 18:11 22:5 32:16 36:18</p> <p><b>reduced</b> 56:8</p> <p><b>refer</b> 28:21 50:22 53:17</p> <p><b>references</b> 45:7 46:20</p> <p><b>referencing</b> 43:23</p> <p><b>referred</b> 11:19</p> <p><b>reflect</b> 3:2 51:18</p> <p><b>reform</b> 9:20 15:23</p> <p><b>reformed</b> 6:14</p> <p><b>reforming</b> 18:18</p> <p><b>regard</b> 29:14 50:21</p> <p><b>Region</b> 52:10</p>	<p><b>Regular</b> 1:7 7:10 14:3 19:19 36:25 40:10</p> <p><b>regulations</b> 4:4, 6, 7, 7</p> <p><b>reincorporate</b> 38:4</p> <p><b>reintegrate</b> 38:8</p> <p><b>relates</b> 23:12 52:1</p> <p><b>relating</b> 53:10</p> <p><b>relation</b> 13:19</p> <p><b>relationship</b> 13:24 14:9</p> <p><b>relative</b> 45:5 47:5</p> <p><b>reminds</b> 41:23</p> <p><b>represent</b> 25:15</p> <p><b>represents</b> 15:5 56:9</p> <p><b>request</b> 6:2, 4, 12</p> <p><b>requesting</b> 34:16</p> <p><b>require</b> 48:16</p> <p><b>required</b> 41:5 48:5</p> <p><b>reservoir</b> 18:5, 6 19:12, 13 46:1</p> <p><b>reservoir.</b> 14:25</p> <p><b>Resource</b> 20:1</p> <p><b>Resources</b> 42:7, 13</p> <p><b>respect</b> 47:12</p> <p><b>respective</b> 16:1 32:19</p> <p><b>response.</b> 29:13</p> <p><b>responsibility</b> 53:1</p> <p><b>rest</b> 19:18</p> <p><b>result</b> 56:14</p> <p><b>resulting</b> 18:4</p> <p><b>results</b> 18:1</p> <p><b>resume</b> 51:23 52:13</p> <p><b>retrograde</b> 18:3</p> <p><b>review</b> 19:23 30:21 41:21 50:7 55:10</p> <p><b>rig</b> 42:3</p> <p><b>right</b> 5:15 6:3 7:2 8:2, 19 9:12</p>	<p>12:14, 16 13:13 22:10 23:15, 16, 24 24:3, 9, 14 25:12 26:2, 9, 17 28:16 29:23, 24 30:9 32:5 33:1 34:24 35:12, 19 36:14, 23 38:25 39:2 40:5 41:3 44:5 45:12 46:5, 16 50:5 51:24 52:8 54:14, 22 55:2</p> <p><b>right,</b> 29:9</p> <p><b>right.</b> 14:7 25:21 40:18</p> <p><b>right-hand</b> 36:1</p> <p><b>rights</b> 2:14, 23 16:8 18:19 28:3 39:13 48:19 50:23 51:3, 9 53:18 54:19</p> <p><b>risk</b> 50:17</p> <p><b>ROBERT</b> 2:3 5:21 8:5, 21</p> <p><b>ROGERS</b> 3:2, 9, 24 4:3 5:15, 18, 20, 24 6:2, 22, 25 7:14, 22 9:4 17:4 19:1, 6, 11, 16, 21 20:3, 5, 9, 14, 20, 23 21:15, 17 25:23 26:2, 6, 9 27:15, 20 28:10, 12, 17 29:7, 12 30:19, 21, 25 31:2, 6, 23 34:15, 20 39:3, 8, 16, 17, 24 40:2, 5, 14, 18, 22 41:3, 16, 19, 21 42:6, 8, 12 43:14 44:7, 13 46:10 49:3, 7, 15 50:5, 6, 7, 13, 16 51:6, 13 52:15 55:2, 7, 10, 14</p> <p><b>Rogers.</b> 31:22 49:13</p>	<p><b>Rogers.Attorney</b> 1:13</p> <p><b>Room</b> 1:7</p> <p><b>ROSS</b> 2:8 50:14, 14, 24 51:13, 23, 25 52:3, 22 54:24 55:13</p> <p><b>ROSS,</b> 52:17</p> <p><b>Ross.</b> 50:12</p> <p><b>Ross's</b> 52:13</p> <p><b>royalty</b> 20:11</p> <p><b>royalty.</b> 40:21</p> <p><b>RPR</b> 56:22</p> <p><b>Rule</b> 20:23 31:14 34:17 42:21</p> <p><b>ruled</b> 46:11</p> <p><b>rules</b> 4:7 6:7 7:3 20:24 27:10 28:22 29:1 34:21 48:5</p> <p><b>running</b> 27:7 29:19 36:17 45:13</p> <p><b>runs</b> 12:19 26:14 46:21</p> <p><b>&lt; S &gt;</b></p> <p><b>saddle</b> 13:10 14:19</p> <p><b>said</b> 56:11</p> <p><b>same</b> 16:11 40:24</p> <p><b>sample</b> 17:24</p> <p><b>San</b> 42:10</p> <p><b>Sand</b> 22:14, 15, 21, 22, 23 23:6, 7, 7, 22 24:19, 20, 21 25:1, 2 26:14 27:12 28:21, 23, 24, 25 29:1, 2 30:7, 8, 10</p> <p><b>Sand,</b> 29:4</p> <p><b>Sand.</b> 25:1 29:5</p> <p><b>scale</b> 22:4, 18 33:6</p> <p><b>seal</b> 46:1</p> <p><b>second</b> 13:13</p> <p><b>seconds</b> 36:2</p>
---	---	--	---

<b>Secretary</b> 3:15, 18	<b>September</b> 1:4, 10 3:4, 4, 6, 7, 12, 12, 16, 17 4:14	22 18:8, 17, 20 19:15 22:2, 10 23:16, 24 24:9 25:12, 18 26:17, 22 29:2 30:17 33:1, 2 34:24 36:14, 23 40:15 42:25 43:1 44:5 45:12 46:16 47:18, 24 53:15 54:1, 5, 9, 14, 16, 21 55:9	<b>soon</b> 41:25
<b>Section</b> 6:9, 10 7:5, 6, 9, 12, 13 9:23, 24 11:4 16:6 20:12, 25 21:3 22:9 25:14, 16 26:13, 20, 25 31:11, 12 32:13, 15, 19, 22, 23 34:10 35:6, 8, 23 36:11 37:1 39:24 40:23 42:19 43:24 44:8 45:1, 8, 10, 16, 20, 22, 25 47:11 48:2 49:24 50:2, 18	<b>Service</b> 15:21	<b>shortened</b> 29:3	<b>sorry</b> 16:3
<b>sections.</b> 46:1, 4 50:4	<b>Services</b> 32:9	<b>shot</b> 12:4 13:25 33:8, 9	<b>South</b> 6:9 7:5, 8, 12 9:22, 23 12:7, 17, 19 13:2, 9, 16 15:25 16:2 21:1 32:22, 22 33:17 35:24 39:23, 24 40:23, 24 42:17 44:2, 23 45:1, 15 46:23 47:13, 25 48:7
<b>sections</b> 16:1 25:18, 23 32:9 33:16 34:8 40:4, 23	<b>Session</b> 1:7 3:1, 3	<b>show</b> 5:9 11:8 13:24	<b>Southeast</b> 11:11 13:16 14:7 20:11, 12, 25 21:2, 3 22:9 23:4, 12 24:22 26:20, 24, 24 27:3 31:10, 10, 12 32:13, 18, 19 42:18 48:1 52:10
<b>sections.</b> 11:2 39:1 41:2	<b>set</b> 5:5 27:6 29:18 44:20 47:4 53:21	<b>showing</b> 9:8 11:7 12:3 13:23 14:11 15:21 23:9 33:3 44:20 47:24	<b>southern</b> 9:9
<b>see</b> 10:20 11:3 12:8, 25 14:16 17:18 27:2 28:20 33:20 38:9 47:3 49:4 50:1	<b>setting</b> 30:3	<b>shown</b> 9:19 10:2, 9, 11, 16, 19 11:16, 20 12:7, 7, 10, 18, 21, 22, 25 13:4, 7, 11 14:22 18:11, 12, 13 22:2, 11 23:10, 17, 25 24:17 26:15 32:7, 16 33:17 34:2 35:9, 21 36:1, 10, 15, 18	<b>Southwest</b> 6:10 7:6, 13 9:8, 17, 22, 24 10:16 15:25, 25 31:11 32:14, 17, 18 45:8, 13
<b>see.</b> 26:6	<b>several</b> 52:9	<b>shows</b> 9:3, 13 10:25 13:5, 8 14:9 17:22 18:1, 9, 13 23:6 26:19, 23 32:9, 10 36:20 43:22, 25 45:9 46:3, 18 47:19 50:4	<b>spacing</b> 10:1, 2, 24
<b>seeing</b> 45:19	<b>shortened</b> 29:3	<b>shows.</b> 17:12	<b>speak</b> 53:7
<b>seen</b> 14:15	<b>shot</b> 12:4 13:25 33:8, 9	<b>shut</b> 18:14 29:25	<b>Special</b> 6:6 20:24 28:22 29:1
<b>sees</b> 27:23	<b>show</b> 5:9 11:8 13:24	<b>side</b> 36:1	<b>spill</b> 11:6 13:11 38:21
<b>seismic</b> 10:23 12:1, 3, 4, 13, 18, 23 13:22, 25 33:8, 12 34:7, 11, 15, 16 35:20, 21, 22, 25 36:1, 4, 17, 24 38:5, 5	<b>showing</b> 9:8 11:7 12:3 13:23 14:11 15:21 23:9 33:3 44:20 47:24	<b>simply</b> 9:7 26:13 29:3 35:2 36:16	<b>split</b> 11:1 16:5 37:14, 15 48:13
<b>seismic,</b> 35:14	<b>shown</b> 9:19 10:2, 9, 11, 16, 19 11:16, 20 12:7, 7, 10, 18, 21, 22, 25 13:4, 7, 11 14:22 18:11, 12, 13 22:2, 11 23:10, 17, 25 24:17 26:15 32:7, 16 33:17 34:2 35:9, 21 36:1, 10, 15, 18	<b>side</b> 36:1	<b>square</b> 33:9
<b>seismically</b> 45:6	<b>shows</b> 9:3, 13 10:25 13:5, 8 14:9 17:22 18:1, 9, 13 23:6 26:19, 23 32:9, 10 36:20 43:22, 25 45:9 46:3, 18 47:19 50:4	<b>side</b> 36:1	<b>STAFF</b> 1:15 3:9 4:3, 10 19:10, 23 27:23 28:10, 17 29:12 30:21 34:21 41:17, 21 49:13, 14 50:7 53:16 54:25 55:3, 6
<b>separate</b> 11:15, 15 13:21 14:19, 20 34:13	<b>shows.</b> 17:12	<b>side</b> 36:1	<b>stage</b> 28:5
<b>separation</b> 45:9	<b>shut</b> 18:14 29:25	<b>side</b> 36:1	<b>start</b> 5:15 8:2, 3
<b>separations</b> 22:25	<b>side</b> 36:1	<b>side</b> 36:1	<b>started</b> 3:24 52:4
	<b>simply</b> 9:7 26:13 29:3 35:2 36:16	<b>side</b> 36:1	
	<b>sir</b> 6:3 7:2 12:14 13:13 16:14 17:1, 21,	<b>side</b> 36:1	
	22 18:8, 17, 20 19:15 22:2, 10 23:16, 24 24:9 25:12, 18 26:17, 22 29:2 30:17 33:1, 2 34:24 36:14, 23 40:15 42:25 43:1 44:5 45:12 46:16 47:18, 24 53:15 54:1, 5, 9, 14, 16, 21 55:9	<b>side</b> 36:1	
	<b>sir.</b> 8:19 11:23 16:17, 23 20:4 24:11 27:1 28:4, 16 29:11 30:6 32:7 33:4 39:2 43:4 46:5 48:3 51:12 53:20 54:13, 22	<b>side</b> 36:1	
	<b>site</b> 3:15	<b>side</b> 36:1	
	<b>sites</b> 52:8	<b>side</b> 36:1	
	<b>situation</b> 28:6	<b>side</b> 36:1	
	<b>six</b> 15:7	<b>side</b> 36:1	
	<b>size</b> 38:20	<b>side</b> 36:1	
	<b>SKIDMORE</b> 2:6 31:3, 3, 16, 18, 20 32:5, 21 37:20 39:11 41:1, 23	<b>side</b> 36:1	
	<b>SKIDMORE,</b> 31:25	<b>side</b> 36:1	
	<b>Skidmore.</b> 35:1 39:5	<b>side</b> 36:1	
	<b>Sklar</b> 4:19, 22	<b>side</b> 36:1	
	<b>slightly</b> 47:10 51:21	<b>side</b> 36:1	
	<b>Smackover</b> 10:1, 8, 20 11:9, 18, 19 13:3, 6 15:2, 11, 16, 17 33:6, 13, 18 34:2 35:8 36:3 44:20 45:17, 20 46:1, 19 47:1, 3, 11, 14 49:20 50:2	<b>side</b> 36:1	
	<b>Smackover.</b> 33:15	<b>side</b> 36:1	
	<b>so</b> 16:3 35:21	<b>side</b> 36:1	
	<b>somewhat</b> 37:15	<b>side</b> 36:1	
	<b>sonic</b> 38:5	<b>side</b> 36:1	

<b>STATE</b> 1:1, 7 3:15, 20 4:12, 15 5:20 7:3 9:15 19:12 20:5 27:9 31:2 42:22 50:13 51:25 53:16 56:3, 23 <b>stated</b> 19:12 <b>statements</b> 40:11 <b>State's</b> 3:18 <b>statutory</b> 38:15 <b>staying</b> 45:5 <b>steep</b> 13:9 <b>stereotype</b> 56:7 <b>STEVE</b> 2:7 42:10, 24 43:16 <b>straight</b> 26:8 <b>strata</b> 28:23 <b>stratigraphic</b> 11:10 24:19 25:5 <b>structural</b> 10:25 11:1, 6 13:8, 10 14:5, 11, 18 15:3 22:20 24:18 33:14, 20 34:6, 9 37:7, 8 38:6 44:21 45:6, 9, 14 46:20 47:6 <b>structurally</b> 11:12 33:25 45:5 <b>structure</b> 10:7, 22, 25 11:4, 15 12:8, 9 13:20 15:6 16:5 22:13, 17, 19 23:5 24:17, 20 25:8 33:5, 10 34:3, 11, 12 35:16, 17 36:7, 9, 12, 16, 17 37:4, 8, 12, 23 38:16, 16, 18, 20 44:19, 23 47:9 <b>structure,</b> 46:24 <b>structure.</b> 13:21 36:22 38:11 <b>study</b> 17:23 <b>subject</b> 10:23 11:25 23:11 <b>subjects</b> 12:11 <b>submit</b> 54:23	<b>submitted</b> 11:21 51:24 53:18 <b>subsea</b> 10:17, 21 14:20, 22, 23 25:3, 4 33:19 35:9 <b>subsequent</b> 11:8 <b>substantially</b> 38:7 <b>subsurface</b> 33:12 38:4 <b>subtle</b> 13:9 <b>successful</b> 3:17 <b>successful.</b> 40:17 <b>suffix</b> 51:17 <b>suggesting</b> 6:5 <b>summary</b> 18:1 <b>Superimposed</b> 22:14 <b>supervision</b> 56:9 <b>Supervisor</b> 1:17 <b>support</b> 8:17 16:25 21:12 31:18 41:7 43:9 <b>sure.</b> 30:17 <b>surface</b> 9:17 10:17 32:10, 12 47:22 <b>survey</b> 15:20 18:7 32:8 <b>swab</b> 29:24 <b>Swamp</b> 20:24 22:7 23:1, 3, 4, 9, 20 25:7, 10 26:19, 21 27:13 28:2 <b>swears</b> 5:23 20:8 31:4 42:11 50:15 <b>sworn</b> 5:19 8:22 17:7 20:4 21:21 31:1 32:1 42:9, 23 43:17 52:18 <b>syncline</b> 33:21 35:12 36:6, 7  < T > <b>take</b> 4:2 26:13 29:25 38:1, 3 47:22	<b>taken</b> 14:13, 15 33:11 56:7 <b>talking</b> 4:4 <b>tell</b> 8:4 17:12 23:17 27:4 30:13 32:6 33:2 37:20, 23 41:8 44:18 <b>temperature</b> 18:5 <b>ten</b> 15:4, 5 <b>tender</b> 19:5 21:15 28:9 31:21 39:15 43:12 49:12 54:25 <b>Teresa</b> 56:14, 22 <b>term</b> 29:3 38:23 <b>terminates</b> 44:25 <b>test</b> 17:14, 21 27:8 29:22 33:23 35:15 37:11 38:3, 9 <b>test.</b> 18:14 30:2 <b>tested</b> 17:17 24:7 29:16 <b>testified</b> 8:6, 22 16:13 17:7 21:21 25:15 26:5 32:1 42:24 43:17 49:16 52:18 <b>Testimony</b> 1:6 18:22 21:16 27:16 31:22 39:5 48:25 52:13 54:24 <b>testing</b> 17:25 <b>tests</b> 29:20 <b>Tew</b> 1:16 3:3, 6, 24 4:3 <b>Texas</b> 45:14 <b>Texas.</b> 31:3 <b>Thank</b> 9:6 11:23 14:3 16:7, 10 29:6 30:22 46:15 50:6 51:12 55:12, 13 <b>that</b> 4:4 11:19 13:24 14:14 16:15 18:1	22:11 23:13, 25 29:8 33:11 34:21 36:6 37:18 44:23 51:17 53:13 54:11 <b>that.</b> 41:12 51:22 <b>the</b> 3:3, 22 4:11, 12 5:15 6:8, 9, 12, 15 7:2, 4, 5, 11, 12 8:13 9:13, 21 11:9, 10, 21 12:12, 25 13:5, 10, 25 14:18 15:1, 7, 11, 21, 24 16:5 17:13, 22 18:13, 21, 22 20:23 21:8, 14 22:1, 6, 8, 17, 20, 21, 22, 23 23:5, 21 24:20, 24 25:5, 8 26:7, 19 27:3, 9, 12 28:1, 12, 21, 24 29:14 30:1, 10, 13 33:2, 5, 14 35:2, 5, 7 36:2, 11, 20, 21 37:23 38:12, 14, 19, 23 40:8 41:8 42:15, 18 44:2, 3, 7, 21 45:10, 21 47:1, 25 48:1, 5, 13, 24 49:17 50:20 51:25 52:8 54:2, 14, 23 55:2, 4 56:7, 23 <b>then</b> 47:4 <b>there.</b> 41:15 <b>thereto</b> 56:8 <b>therewith</b> 53:14 <b>thermal</b> 15:14 <b>these</b> 25:22 46:8 <b>they</b> 50:3 <b>thick</b> 45:16, 16 <b>thickness</b> 25:2 <b>thin</b> 50:4 <b>thing</b> 23:8 <b>things</b> 17:14 <b>think</b> 41:4 <b>thinned</b> 45:21
--	--	--	--

**this** 8:6 10:24  
11:14 12:8, 22,  
23 13:19 14:24  
15:5, 8 20:18, 22  
25:4, 12, 13  
26:12 28:6  
31:18 33:9  
37:11 38:17  
40:11 44:22  
47:6 53:4  
**those** 5:12  
12:20 19:21  
**those,** 51:6  
**three** 10:24  
18:10 25:6, 19  
26:4, 10 27:5  
29:17  
**through** 35:20  
**throughout** 33:12  
**Thursday** 4:14  
5:6  
**tie** 36:18 38:5  
**ties** 12:12  
**Timber** 32:24  
40:3  
**time** 3:11 12:23,  
24 13:11 17:25  
18:13 30:15  
40:7 42:1 44:19  
46:18  
**time.** 3:23 4:2  
19:5 48:25 51:1  
**title** 52:5, 6 53:7,  
8  
**to** 5:18, 25 7:23  
9:19 10:23  
12:15 23:1, 4, 11,  
19 30:25 33:22  
34:14 40:5  
41:13 45:5  
46:16 52:1  
**to.** 26:5  
**today** 4:11 5:16  
9:11, 19 10:4  
15:23 21:9  
**today.** 4:8 11:7  
**together.** 12:13  
**tool** 35:21  
**top** 10:7, 20  
11:9 12:18 13:3,

5 15:16 22:13,  
21, 24 24:18  
25:1 33:5, 14, 18  
35:5, 7, 8 36:2,  
12 44:20 46:1,  
18, 25 47:1, 3  
49:20  
**tops** 25:3  
**Township** 6:10  
7:6 10:5 21:1  
31:12 32:9  
42:19 44:8 50:18  
**traces** 12:5, 6, 17,  
20  
**tract** 53:2  
**transcript** 56:10  
**translate** 54:10  
**trap** 23:3  
**trapping** 24:21  
**trending** 12:6  
23:4 24:22  
**trends** 13:15  
**trough** 47:1  
**true** 10:17, 21  
14:20, 23 53:24  
56:10  
**truncated** 45:20  
**trying** 41:13  
**tubing** 17:19  
18:12  
**turn** 9:2 15:10  
17:11 21:25  
22:3 32:5 33:1  
43:21 45:12  
46:16  
**turned** 24:6  
**turns** 36:7  
**Turquitt** 56:14, 22  
**Tuscaloosa** 1:2,  
9 5:21, 22 20:7  
**Tuscaloosa.** 4:16  
**two** 3:16 4:5  
5:18 8:2, 13  
11:2 12:10, 11,  
12 13:14 14:16  
16:1 23:24 25:6  
34:2, 3, 7, 18  
39:1 41:5 42:4  
46:9

**type** 15:11, 13,  
15 23:18  
**typewriting** 56:8  
**typically** 49:20  
**TYRA** 2:3, 4, 7  
5:18, 24, 24 6:3  
7:2, 15 8:2, 6, 9,  
12, 16, 19 9:6  
12:2 16:11, 15,  
18, 21, 24 17:2  
18:21 19:4, 16,  
17 42:8, 12, 12  
43:2, 5, 9, 12  
44:5, 16 46:6, 15  
48:24 49:5, 12,  
22 50:6  
**TYRA:** 9:1 17:10  
43:20 44:17  
46:16

< U >  
**ultimate** 37:25  
40:13, 14  
**unavailable** 7:24  
34:23 46:12  
**uncontested** 4:10  
**under** 56:9  
**undersaturated**  
18:2  
**understand** 40:8,  
12 42:2 54:6  
**unit** 6:13, 15, 15  
7:4, 10 9:18, 20,  
20 10:3, 4, 14  
13:7 15:24, 24  
16:5 18:18  
19:14 21:4 22:5  
26:23 28:1 31:8  
32:17 37:14, 25  
38:10, 12, 15, 24  
40:7, 8, 10, 13  
41:9, 11 42:15,  
16 43:24 45:3, 5,  
15 47:20, 25  
48:13 50:20  
51:19 54:3, 7, 8,  
19  
**unit,** 37:15 41:10

**unit.** 13:6 15:22  
36:13 37:19, 22  
39:23 40:14  
**Unitization** 52:7  
**University** 1:8  
**unnecessary**  
48:21 54:20  
**up** 50:1  
**update** 53:13  
**upper** 50:2  
**use** 25:14 38:23

< V >  
**values** 22:22  
30:10, 11  
**Ventex** 30:24  
31:6  
**Venture** 5:17, 25  
9:15 11:17 12:24  
**vertical** 10:18, 22  
13:8 14:21, 23  
**view** 47:2  
**virgin** 18:6  
**Vocation** 9:10  
**volume** 33:8, 11,  
13  
**volume,** 34:8

< W >  
**want** 3:25 40:6,  
10 41:7, 8  
**wanted** 51:21  
**Warrior** 5:1  
**was** 10:14, 20  
11:13 20:16  
23:22 28:14  
44:11, 14  
**waste** 16:8  
18:19 28:2  
39:12 48:19  
54:18  
**water** 11:12  
14:13, 18 24:9  
**water.** 24:13  
**WATSON** 2:5, 6  
20:3, 9, 18, 22  
21:11, 14 25:22  
26:4 27:15 28:9,  
16 30:19, 20, 25  
31:5, 21 34:14

39:3, 15, 19, 22  
 40:1, 3, 12, 13, 15,  
 19 41:13, 19, 20,  
 23  
**Watson.** 20:15  
**WATSON:** 21:24  
 26:12 32:4  
 34:24 39:11  
**way** 40:10  
**ways** 52:8  
**we** 11:6 26:20  
 27:5, 6 29:18  
 38:6, 20 40:7  
**web** 3:15  
**weekly** 53:15  
**weeks** 27:5  
 29:18 42:4  
**Well** 6:13, 14  
 9:14, 18, 22  
 10:10, 10, 12, 13,  
 21 11:3, 11, 21  
 12:25 13:1, 18  
 14:1, 2, 10, 15, 17  
 15:8, 12 16:25  
 17:15, 15 18:10,  
 14, 15 22:4, 6, 20,  
 21 23:13, 19, 19,  
 22 24:7, 7, 10, 13,  
 24, 25 25:4, 4  
 26:3, 23 27:3, 4,  
 5, 8, 11, 25 29:8  
 30:4, 5, 10, 11, 14  
 31:9 32:11, 12  
 33:16, 17, 20  
 34:1 35:3, 4, 11,  
 17, 25 36:4, 5, 25  
 37:6, 15, 20 38:2,  
 2, 3, 9 40:5 41:3,  
 24, 25, 25 42:1,  
 15 44:2, 3 45:1,  
 2, 4, 10, 16, 16, 18,  
 20, 24 46:2, 2  
 47:8, 12, 16 48:4  
 49:17, 18, 25  
 50:3 52:7, 23  
 53:18 54:15  
**Well,** 36:19, 24  
**Well.** 9:14 14:2  
 15:18 21:4 27:4  
 32:20 33:24

34:13 35:10  
 45:11  
**wellbore** 13:1  
 35:13 37:17  
 38:6, 9  
**wellbores** 35:7  
**wells** 5:10 10:18  
 12:12 25:6, 6, 17  
 26:5, 10 29:24  
 30:16 41:5  
 48:22 52:9 54:20  
**wells.** 23:7 25:20  
**were** 4:3 27:18,  
 21 39:6, 9 49:1  
 51:4, 10  
**West** 12:5 16:3  
 21:1 23:2, 6  
 31:11 32:17  
 34:11 36:15, 18  
 37:18 42:20  
 43:24 44:9, 24,  
 24 46:21, 21, 22,  
 23  
**West-dipping**  
 24:21  
**Western** 43:24  
**what** 11:18 15:3  
**When** 40:3  
**which** 10:10  
 12:10 33:13  
**white** 13:7 14:1,  
 15  
**Wildcat** 31:8  
**will** 17:17 23:9  
 34:11 50:21  
**will.** 16:9  
**wish** 23:19  
**with** 32:13 39:19  
 52:22  
**witness** 20:3  
 21:5 28:9 30:25  
 31:16, 21 39:15  
 42:8, 23 49:12  
 50:12 54:25  
 56:11  
**witness.** 20:8  
 31:4 42:11 50:15  
**Witnesses** 2:2  
 5:18 8:3 19:5  
**witnesses.** 5:23

**WOOD** 2:3 5:21,  
 21 8:3, 5, 8, 11,  
 15, 18 16:12  
 18:22 19:12, 15  
**WOOD,** 8:21  
**Wood.** 8:5  
**work** 52:1, 5  
 53:14  
**worked** 52:9  
**working** 20:11  
 40:20, 20, 22  
 41:1 52:4  
**would** 7:16  
 37:21 38:7, 9  
 45:24 52:13  
**would,** 44:17  
**would.** 18:20  
 39:14

< X >

X 2:1

< Y >

**Yeah** 49:24  
**year** 53:5  
**year.** 33:8  
**yellow** 10:9  
**Yes.** 43:11  
 47:17 48:9, 20, 23  
**you** 6:25 8:3  
 19:11 23:24  
 25:14, 23 27:15  
 28:10 30:4, 15  
 38:13 39:3  
 40:15 41:5 49:25  
**you,** 28:9  
**you.** 9:6 12:2  
 16:10 29:6  
 30:22 46:15  
 50:6 55:13  
**your** 19:19 27:2  
 28:19 34:24, 25  
 53:24

< Z >

**zero** 15:3, 5  
**zeroed** 23:11  
**zone** 49:21  
**zones** 23:22, 24