

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

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF LOUISIANA

IN RE: OIL SPILL BY THE OIL RIG	*	Docket 10-MD-2179
DEEPWATER HORIZON IN THE	*	
GULF OF MEXICO ON APRIL 20, 2010	*	Section J
	*	
Applies to:	*	New Orleans, Louisiana
	*	
Docket 10-CV-02771,	*	March 5, 2013
IN RE: THE COMPLAINT AND	*	
PETITION OF TRITON ASSET	*	
LEASING GmbH, et al	*	
	*	
Docket 10-CV-4536,	*	
UNITED STATES OF AMERICA v.	*	
BP EXPLORATION & PRODUCTION,	*	
INC., et al	*	
	*	
* * * * *		

DAY 6, AFTERNOON SESSION  
TRANSCRIPT OF NONJURY TRIAL  
BEFORE THE HONORABLE CARL J. BARBIER  
UNITED STATES DISTRICT JUDGE

Appearances:

For the Plaintiffs:	Domengeaux Wright Roy & Edwards, LLC BY: JAMES P. ROY, ESQ. 556 Jefferson Street, Suite 500 Post Office Box 3668 Lafayette, Louisiana 70502
---------------------	--

For the Plaintiffs:	Herman Herman & Katz, LLC BY: STEPHEN J. HERMAN, ESQ. 820 O'Keefe Avenue New Orleans, Louisiana 70113
---------------------	--

1 Appearances:

2 For the Plaintiffs: Cunningham Bounds, LLC  
3 BY: ROBERT T. CUNNINGHAM, ESQ.  
4 1601 Dauphin Street  
Mobile, Alabama 36604

5 For the Plaintiffs: Lewis Kullman Sterbcow & Abramson  
6 BY: PAUL M. STERBCOW, ESQ.  
7 601 Poydras Street, Suite 2615  
New Orleans, Louisiana 70130

8 For the Plaintiffs: Breit Drescher Imprevento  
9 & Walker, PC  
10 BY: JEFFREY A. BREIT, ESQ.  
11 600 22nd Street, Suite 402  
Virginia Beach, Virginia 23451

12 For the Plaintiffs: Leger & Shaw  
13 BY: WALTER J. LEGER JR., ESQ.  
14 600 Carondelet Street, 9th Floor  
New Orleans, Louisiana 70130

15 For the Plaintiffs: Watts Guerra Craft, LLP  
16 BY: MIKAL C. WATTS, ESQ.  
17 4 Dominion Drive  
Building 3, Suite 100  
San Antonio, Texas 78257

18 For the Plaintiffs: Williams Law Group, LLC  
19 BY: CONRAD "DUKE" WILLIAMS, ESQ.  
20 435 Corporate Drive, Suite 101  
Houma, Louisiana 70360

21 For the Plaintiffs: Thornhill Law Firm  
22 BY: TOM THORNHILL, ESQ.  
23 1308 Ninth Street  
Slidell, Louisiana 70458

24

25

1 Appearances:

2 For the Plaintiffs: deGravelles Palmintier Holthaus  
3 & Frugé, LLP  
4 BY: JOHN W. DEGRAVELLES, ESQ.  
618 Main Street  
Baton Rouge, Louisiana 70801

5 For the Plaintiffs: Williamson & Rusnak  
6 BY: JIMMY WILLIAMSON, ESQ.  
4310 Yoakum Boulevard  
7 Houston, Texas 77006

8 For the Plaintiffs: Irpino Law Firm  
9 BY: ANTHONY IRPINO, ESQ.  
2216 Magazine Street  
10 New Orleans, Louisiana 70130

11 For the United States U.S. Department of Justice  
12 of America: Torts Branch, Civil Division  
BY: R. MICHAEL UNDERHILL, ESQ.  
13 450 Golden Gate Avenue  
14 7-5395 Federal Bldg., Box 36028  
San Francisco, California 94102

15 For the United States U.S. Department of Justice  
16 of America: Environment & Natural Resources  
Environmental Enforcement Section  
17 BY: STEVEN O'ROURKE, ESQ.  
SCOTT CERNICH, ESQ.  
18 DEANNA CHANG, ESQ.  
RACHEL HANKEY, ESQ.  
19 A. NATHANIEL CHAKERES, ESQ.  
Post Office Box 7611  
20 Washington, D.C. 20044

21 For the United States U.S. Department of Justice  
22 of America: Torts Branch, Civil Division  
BY: JESSICA McCLELLAN, ESQ.  
23 MICHELLE DELEMARRE, ESQ.  
JESSICA SULLIVAN, ESQ.  
24 SHARON SHUTLER, ESQ.  
MALINDA LAWRENCE, ESQ.  
25 Post Office Box 14271  
Washington, D.C. 20004

1 Appearances:

2  
3 For the United States U.S. Department of Justice  
of America: Fraud Section  
Commercial Litigation Branch  
4 BY: DANIEL SPIRO, ESQ.  
KELLEY HAUSER, ESQ.  
5 ELIZABETH YOUNG, ESQ.  
6 Ben Franklin Station  
Washington, D.C. 20044

7  
8 For the State of Attorney General of Alabama  
Alabama: BY: LUTHER STRANGE, ESQ.  
COREY L. MAZE, ESQ.  
9 WINFIELD J. SINCLAIR, ESQ.  
10 500 Dexter Avenue  
Montgomery, Alabama 36130

11  
12 For the State of Attorney General of Louisiana  
Louisiana: BY: JAMES D. CALDWELL, ESQ.  
13 1885 North Third Street  
Post Office Box 94005  
14 Baton Rouge, Louisiana 70804

15 For the State of Kanner & Whiteley, LLC  
Louisiana: BY: ALLAN KANNER, ESQ.  
16 DOUGLAS R. KRAUS, ESQ.  
17 701 Camp Street  
New Orleans, Louisiana 70130

18  
19 For BP Exploration & Liskow & Lewis, APLC  
Production Inc., BY: DON K. HAYCRAFT, ESQ.  
20 BP America Production 701 Poydras Street, Suite 5000  
Company, BP PLC: New Orleans, Louisiana 70139

21  
22 For BP Exploration & Kirkland & Ellis, LLP  
Production Inc., BY: J. ANDREW LANGAN, ESQ.  
23 BP America Production HARIKLIA "CARRIE" KARIS, ESQ.  
Company, BP PLC: MATTHEW T. REGAN, ESQ.  
24 300 N. LaSalle  
Chicago, Illinois 60654

25

1 Appearances:

2  
3 For BP Exploration & Covington & Burling, LLP  
4 Production Inc., BY: ROBERT C. "MIKE" BROCK, ESQ.  
BP America Production 1201 Pennsylvania Avenue, NW  
5 Company, BP PLC: Washington, D.C. 20004

6 For Transocean Holdings Frilot, LLC  
7 LLC, Transocean Offshore BY: KERRY J. MILLER, ESQ.  
8 Deepwater Drilling Inc., 1100 Poydras Street, Suite 3700  
9 Transocean Deepwater Inc.: New Orleans, Louisiana 70163

10 For Transocean Holdings Sutherland Asbill & Brennan, LLP  
11 LLC, Transocean Offshore BY: STEVEN L. ROBERTS, ESQ.  
12 Deepwater Drilling Inc., RACHEL G. CLINGMAN, ESQ.  
13 Transocean Deepwater Inc.: 1001 Fannin Street, Suite 3700  
Houston, Texas 77002

14 For Transocean Holdings Munger Tolles & Olson, LLP  
15 LLC, Transocean Offshore BY: MICHAEL R. DOYEN, ESQ.  
16 Deepwater Drilling Inc., BRAD D. BRIAN, ESQ.  
17 Transocean Deepwater Inc.: LUIS LI, ESQ.  
335 S. Grand Avenue, 35th Floor  
Los Angeles, California 90071

18 For Transocean Holdings Mahtook & Lafleur  
19 LLC, Transocean Offshore BY: RICHARD J. HYMEL, ESQ.  
20 Deepwater Drilling Inc., 600 Jefferson Street, Suite 1000  
21 Transocean Deepwater Inc.: Post Office Box 3089  
Lafayette, Louisiana 70501

22 For Transocean Holdings Hughes Arrell Kinchen, LLP  
23 LLC, Transocean Offshore BY: JOHN KINCHEN, ESQ.  
24 Deepwater Drilling Inc., 2211 Norfolk, Suite 1110  
25 Transocean Deepwater Inc.: Houston, Texas 77098

For Cameron International Stone Pigman Walther Wittmann, LLC  
23 Corporation: BY: PHILLIP A. WITTMANN, ESQ.  
546 Carondelet Street  
24 New Orleans, Louisiana 70130

1 Appearances:2  
3 For Cameron International  
Corporation:Beck Redden & Secrest, LLP  
BY: DAVID J. BECK, ESQ.  
DAVID W. JONES, ESQ.  
GEOFFREY GANNAWAY, ESQ.  
ALEX B. ROBERTS, ESQ.  
1221 McKinney Street, Suite 4500  
Houston, Texas 770106  
7 For Halliburton Energy  
Services, Inc.:Godwin Lewis, PC  
BY: DONALD E. GODWIN, ESQ.  
BRUCE W. BOWMAN JR., ESQ.  
FLOYD R. HARTLEY JR., ESQ.  
GAVIN HILL, ESQ.  
1201 Elm Street, Suite 1700  
Dallas, Texas 7527011  
12 For Halliburton Energy:  
Services, Inc.:Godwin Lewis, PC  
BY: JERRY C. VON STERNBERG, ESQ.  
1331 Lamar, Suite 1665  
Houston, Texas 7701014  
15 For M-I, LLC:Morgan Lewis & Bockius  
BY: HUGH E. TANNER, ESQ.  
DENISE SCOFIELD, ESQ.  
JOHN C. FUNDERBURK, ESQ.  
1000 Louisiana Street, Suite 4000  
Houston, Texas 7700218  
19 Official Court Reporter:Jodi Simcox, RMR, FCRR  
500 Poydras Street, Room HB-406  
New Orleans, Louisiana 70130  
(504) 589-7780  
Jodi\_Simcox@laed.uscourts.gov22  
23  
24 Proceedings recorded by mechanical stenography using  
25 computer-aided transcription software.

I N D E X

2 : 13 PM	1		
2 : 13 PM	2		<u>Page</u>
2 : 13 PM	3		
2 : 13 PM	4	Miles Randal Ezell	
2 : 13 PM		Cross-Examination By Mr. Hartley:	1822
2 : 13 PM		Cross-Examination By Mr. Brock:	1847
2 : 13 PM	5	Cross-Examination By Mr. Beck:	1880
2 : 13 PM		Redirect Examination By Mr. Sterbcow:	1887
2 : 13 PM	6	Redirect Examination By Ms. Clingman:	1903
2 : 13 PM	7	Ronnie W. Sepulvado	
2 : 13 PM		Direct Examination By Mr. Williams:	1918
2 : 13 PM	8	Cross-Examination By Mr. Underhill:	1947
2 : 13 PM		Cross-Examination By Mr. Kraus:	1954
2 : 13 PM	9	Direct Examination By Ms. Karis:	1958
2 : 13 PM	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		

## MILES RANDAL EZELL - CROSS

**AFTERNOON SESSION****(March 5, 2013)****\* \* \* \* \*****THE DEPUTY CLERK:** All rise.**THE COURT:** All right. Good afternoon, everyone,  
again. Please be seated.

Let's see. Who's up next? Halliburton?

**MR. GODWIN:** Yes, Your Honor.**THE COURT:** Okay.**MR. HARTLEY:** Thank you, Your Honor. Floyd Hartley  
for Halliburton, I'll be taking Mr. Ezell on cross.(WHEREUPON, **MILES RANDAL EZELL**, having been  
previously duly sworn, testified as follows.)**CROSS-EXAMINATION****BY MR. HARTLEY:****Q.** Good afternoon, Mr. Ezell.**A.** Good afternoon.**Q.** I want to start with the morning meeting that you had on  
the morning of April 20th, 2010. I think, in response to both  
Mr. Sterbcow's question and Ms. Clingman's, you said that there  
was at least some discussion about the cement job. Is that  
right?**A.** Yes.**Q.** And if I heard correctly, you said that it was deemed to  
be a successful cement job?



## MILES RANDAL EZELL - CROSS

1 : 3 9 P M 1 A. To the best of my recollection, yes.

1 : 3 9 P M 2 Q. This was a BP engineer on shore that's conveying that

1 : 3 9 P M 3 information?

1 : 3 9 P M 4 A. My memory's not clear exactly who it was that conveyed it,

1 : 3 9 P M 5 but I heard it.

1 : 3 9 P M 6 Q. And as a result, that they were not going to run a cement

1 : 3 9 P M 7 bond log?

1 : 3 9 P M 8 A. Yes.

1 : 3 9 P M 9 Q. There were cement bond log tools on the rig that morning?

1 : 3 9 P M 10 A. To the best of my recollection, they were still there.

1 : 4 0 P M 11 Q. And there was a Schlumberger crew on the rig that morning?

1 : 4 0 P M 12 A. I believe so. I think they were supposed to depart that

1 : 4 0 P M 13 day.

1 : 4 0 P M 14 Q. Now, having been on the *Deepwater Horizon* for some nine

1 : 4 0 P M 15 years or so, you have had experience with cement bond logs; is

1 : 4 0 P M 16 that right?

1 : 4 0 P M 17 A. I mean, yes, some.

1 : 4 0 P M 18 Q. It's not uncommon to run a cement bond log?

1 : 4 0 P M 19 A. That's correct, it's not uncommon.

1 : 4 0 P M 20 Q. Now, had one been run and an issue with either top of

1 : 4 0 P M 21 cement or channeling had been identified, that would give the

1 : 4 0 P M 22 crew the opportunity to run some remediation of the cement job?

1 : 4 0 P M 23 A. I suppose, if that was BP's election to do that.

1 : 4 0 P M 24 Q. That's not a Transocean decision?

1 : 4 0 P M 25 A. No, sir, that wouldn't be.

## MILES RANDAL EZELL - CROSS

1:40 PM 1 Q. In your experience, is it uncommon to remediate cement  
1:40 PM 2 jobs?

1:40 PM 3 A. Is it uncommon to do what?

1:40 PM 4 Q. To remediate cement jobs, run a squeeze job?

1:40 PM 5 A. No, I wouldn't say it was uncommon.

1:40 PM 6 Q. It's something that happens on rigs?

1:41 PM 7 A. Yes, it does happen from time to time.

1:41 PM 8 Q. And had a cement bond log been run that morning and an  
1:41 PM 9 issue identified with the cement, an opportunity to remediate  
1:41 PM 10 the cement in the primary casing job could have been performed?

1:41 PM 11 MR. BROCK: Your Honor, objection. He's calling  
1:41 PM 12 now -- asking now for opinion testimony from the witness. I  
1:41 PM 13 object to it on that basis.

1:41 PM 14 THE COURT: Your question is: Had a cement bond log  
1:41 PM 15 been run, could it have been --

1:41 PM 16 MR. BROCK: It sounds like --

1:41 PM 17 MR. HARTLEY: Based on the witness's experience on  
1:41 PM 18 the rig and having run CBLs and having been there for the  
1:41 PM 19 performance of squeeze jobs.

1:41 PM 20 THE COURT: That sounds like something you ought to  
1:41 PM 21 be talking to the cementing experts about, though. I'm going  
1:41 PM 22 to sustain the objection.

1:41 PM 23 BY MR. HARTLEY:

1:41 PM 24 Q. You were on the *Deepwater Horizon* for basically its entire  
1:41 PM 25 life in the Gulf of Mexico?

## MILES RANDAL EZELL - CROSS

1 : 4 1 P M 1 A. That's correct.

1 : 4 1 P M 2 Q. You worked as a driller, toolpusher, and senior toolpusher

1 : 4 1 P M 3 on that rig?

1 : 4 1 P M 4 A. That's also correct.

1 : 4 1 P M 5 Q. Okay. Now, Ms. Clingman ran through some of your

1 : 4 2 P M 6 education and training with Transocean. Do you recall that?

1 : 4 2 P M 7 A. Some of my training?

1 : 4 2 P M 8 Q. Some of your training. For example, you've taken well

1 : 4 2 P M 9 control school?

1 : 4 2 P M 10 A. Yes.

1 : 4 2 P M 11 Q. With Transocean?

1 : 4 2 P M 12 A. Yes.

1 : 4 2 P M 13 Q. You've been well-control certified?

1 : 4 2 P M 14 A. I have.

1 : 4 2 P M 15 Q. In fact, you've been recertified about every two years

1 : 4 2 P M 16 since the late '80s?

1 : 4 2 P M 17 A. It's been multiple times. I don't remember exactly how

1 : 4 2 P M 18 many.

1 : 4 2 P M 19 Q. It's fair to say you're generally familiar with the basic

1 : 4 2 P M 20 principles and concepts of well control?

1 : 4 2 P M 21 A. Fair.

1 : 4 2 P M 22 Q. I think, in response to Mr. Sterbcow's question this

1 : 4 2 P M 23 morning, you'd mentioned that mud is the first barrier in the

1 : 4 2 P M 24 well. Is that fair?

1 : 4 2 P M 25 A. Yes.

## MILES RANDAL EZELL - CROSS

1 : 4 2 P M 1 Q. If we look at TREX-1454 at 286809.

1 : 4 2 P M 2 Now, when you've taken these well control schools

1 : 4 2 P M 3 with Transocean, I think you said you covered in fairly great

1 : 4 2 P M 4 detail the *Transocean Well Control Handbook*?

1 : 4 2 P M 5 A. Correct.

1 : 4 2 P M 6 Q. You took tests on the various sections?

1 : 4 2 P M 7 A. Correct.

1 : 4 2 P M 8 Q. So you are familiar with the well control manual that was

1 : 4 3 P M 9 actually on the rig?

1 : 4 3 P M 10 A. I'm sorry. Say that again.

1 : 4 3 P M 11 Q. You were familiar with the *Transocean Well Control*

1 : 4 3 P M 12 *Handbook* that was on the *Deepwater Horizon*?

1 : 4 3 P M 13 A. Yes.

1 : 4 3 P M 14 MR. HARTLEY: If we go to page 6809. Blow up the

1 : 4 3 P M 15 first paragraph.

1 : 4 3 P M 16 BY MR. HARTLEY:

1 : 4 3 P M 17 Q. Now, I think this is consistent with what you just said --

1 : 4 3 P M 18 let me know if I'm wrong about that -- that "the primary well

1 : 4 3 P M 19 control is the use of wellbore fluid density to provide

1 : 4 3 P M 20 sufficient hydrostatic pressure to prevent the influx of

1 : 4 3 P M 21 formation fluid into the wellbore. It is of the utmost

1 : 4 3 P M 22 importance that primary control is maintained at all times."

1 : 4 3 P M 23 Would you agree with that?

1 : 4 3 P M 24 A. Yes, I would.

1 : 4 3 P M 25 Q. Before you displace that heavy mud with seawater in the

## MILES RANDAL EZELL - CROSS

1 : 4 3 P M 1 well, you want to make sure of the well integrity; is that  
1 : 4 3 P M 2 fair?  
1 : 4 3 P M 3 A. Yes.  
1 : 4 3 P M 4 Q. If there's any question about the integrity of that well  
1 : 4 3 P M 5 downhole, the job and make sure you get it right?  
1 : 4 3 P M 6 A. Yes.  
1 : 4 4 P M 7 Q. And that's why I think you told Mr. Sterbcow that  
1 : 4 4 P M 8 vigilance is absolutely necessary at that point and through the  
1 : 4 4 P M 9 displacement progression. Fair?  
1 : 4 4 P M 10 A. It's necessary from a driller at all times.  
1 : 4 4 P M 11 Q. But even more so at this point where you're displacing and  
1 : 4 4 P M 12 removing the primary well control barrier?  
1 : 4 4 P M 13 A. It's very important.  
1 : 4 4 P M 14 Q. And whose decision is that to remove that primary barrier?  
1 : 4 4 P M 15 A. Whose decision, was your question?  
1 : 4 4 P M 16 Q. Yes, sir.  
1 : 4 4 P M 17 A. That would be something that -- that would be under BP's  
1 : 4 4 P M 18 decision-making process.  
1 : 4 4 P M 19 Q. Okay. Halliburton, for example, either the cementer or  
1 : 4 4 P M 20 the mud log company, they're not involved in the decision on  
1 : 4 4 P M 21 whether to remove the mud engaged in displacement?  
1 : 4 4 P M 22 MS. CLINGMAN: Your Honor, I'll object to lack of  
1 : 4 4 P M 23 foundation.  
1 : 4 4 P M 24 THE COURT: Sustained.  
1 : 4 4 P M 25

## MILES RANDAL EZELL - CROSS

1 BY MR. HARTLEY:

2 Q. In your nine years in the Gulf of Mexico on the *Deepwater*  
3 *Horizon*, have you had an opportunity in these 50-some-odd wells  
4 you've been on to be on tour during the displacement procedure?

5 A. Be on tour during displacement of?

6 Q. The displacement of heavy mud to seawater.

7 A. Yes.

8 Q. Have you had an opportunity to review displacement  
9 procedures that have been provided to Transocean?

10 A. Yes, I have reviewed displacement procedures in the past.

11 Q. Did you review the displacement procedure on the *Deepwater*  
12 *Horizon* for the Macondo well?

13 A. On what day are you referring to?

14 Q. On the morning of April 20th, you attended a Transocean  
15 meeting and then the morning meeting with BP. In either of  
16 those meetings, was the displacement procedure discussed?

17 A. Not to my knowledge. It was held generally on the rig  
18 floor.

19 Q. Do you recall ever having seen the displacement procedure?

20 A. I virtually had no input on the displacement procedure.  
21 That was handled without me.

22 Q. In your experience from prior wells, these 50-odd wells  
23 you drilled or helped drill in the Gulf of Mexico, did you have  
24 an opportunity as a driller or a toolpusher to actually be  
25 involved in the displacement of those wells?

## MILES RANDAL EZELL - CROSS

1 : 4 6 P M 1 A. Yes, I have been involved.

1 : 4 6 P M 2 Q. In any of those wells, did you ever see a displacement

1 : 4 6 P M 3 procedure drafted by Halliburton?

1 : 4 6 P M 4 A. The procedures were generally -- they generally came to us

1 : 4 6 P M 5 from M-I.

1 : 4 6 P M 6 Q. Not from Halliburton?

1 : 4 6 P M 7 A. Not from Halliburton.

1 : 4 6 P M 8 Q. And the decision to go forward with the displacement,

1 : 4 6 P M 9 whether it's after a negative test or otherwise, is not one

1 : 4 6 P M 10 that Halliburton, in your experience in the Gulf of Mexico, was

1 : 4 6 P M 11 the one to make?

1 : 4 6 P M 12 A. You're right.

1 : 4 6 P M 13 Q. After the hydrostatic pressure buildup mud, I think you

1 : 4 6 P M 14 told Mr. Sterbcow that the BOP is the second barrier. Is that

1 : 4 6 P M 15 right?

1 : 4 6 P M 16 A. Yes, in my opinion.

1 : 4 6 P M 17 Q. Is that Transocean equipment?

1 : 4 6 P M 18 A. It is Transocean equipment.

1 : 4 6 P M 19 Q. Now, based on your experience in the Gulf of Mexico, is

1 : 4 7 P M 20 Halliburton involved in either the maintenance or repair or

1 : 4 7 P M 21 inspection of the BOPs?

1 : 4 7 P M 22 A. No, sir, they aren't.

1 : 4 7 P M 23 Q. Is Halliburton involved at all in the operation of the

1 : 4 7 P M 24 BOP?

1 : 4 7 P M 25 A. No, sir, they aren't.

## MILES RANDAL EZELL - CROSS

1 : 4 7 P M 1 Q. Now, when you went through with Ms. Clingman the animation  
1 : 4 7 P M 2 of the drill shack, you were shown a portion of the BOP control  
1 : 4 7 P M 3 panel. Do you recall that?  
1 : 4 7 P M 4 A. I do recall seeing the BOP control panel.  
1 : 4 7 P M 5 Q. In what other places on the rig is there a BOP control  
1 : 4 7 P M 6 panel?  
1 : 4 7 P M 7 A. Primarily, the bridge would be the secondary.  
1 : 4 7 P M 8 Q. There's not one in the mud logger shack, is there?  
1 : 4 7 P M 9 A. No, sir.  
1 : 4 7 P M 10 Q. The mud logger doesn't have any access to the BOP, can't  
1 : 4 7 P M 11 shut annulars, shut the DBRs, certainly can't shear the casing  
1 : 4 7 P M 12 or EDS; right?  
1 : 4 7 P M 13 A. Thank God, no.  
1 : 4 7 P M 14 Q. After the BOP -- when you were talking to Ms. Clingman,  
1 : 4 7 P M 15 you talked about the last line of defense once gas is in the  
1 : 4 7 P M 16 riser. And that's the emergency diverter system; right?  
1 : 4 8 P M 17 A. I'm not familiar with that term you just used there.  
1 : 4 8 P M 18 Q. The diverter system?  
1 : 4 8 P M 19 A. I thought you said emergency diverter system.  
1 : 4 8 P M 20 Q. Pardon me. The diverter system, you're familiar with  
1 : 4 8 P M 21 that?  
1 : 4 8 P M 22 A. Yes, I'm familiar with the diverter.  
1 : 4 8 P M 23 Q. And I think you characterized that as sort of the last  
1 : 4 8 P M 24 line of defense as you're trying to maintain control of the  
1 : 4 8 P M 25 well. Is that a fair characterization?



## MILES RANDAL EZELL - CROSS

1 : 4 8 P M 1 A. Typically, yes.

1 : 4 8 P M 2 Q. And again, the controls for the diverter are located in

1 : 4 8 P M 3 the drill shack; right?

1 : 4 8 P M 4 A. Yes.

1 : 4 8 P M 5 Q. And on the bridge?

1 : 4 8 P M 6 A. That's correct.

1 : 4 8 P M 7 Q. The mud logger has no ability to activate the diverter?

1 : 4 8 P M 8 A. No, he didn't.

1 : 4 8 P M 9 Q. Nor does Halliburton's cement personnel?

1 : 4 8 P M 10 A. No.

1 : 4 8 P M 11 Q. So in each case, the well control responsibility on the

1 : 4 8 P M 12 well, as you understand it, based on your experience, lies with

1 : 4 8 P M 13 Transocean to push the buttons, to pull the levers, to shut in

1 : 4 8 P M 14 a well, and control it?

1 : 4 8 P M 15 A. We would be the people that would shut the well down, yes.

1 : 4 9 P M 16 Q. We talked to you very briefly about the negative test.

1 : 4 9 P M 17 It's been covered at some length. I think you've talked about

1 : 4 9 P M 18 Jimmy Harrell being adamant that one be run. Do you recall

1 : 4 9 P M 19 that testimony?

1 : 4 9 P M 20 A. I do.

1 : 4 9 P M 21 Q. And I was curious as to why you characterized him as being

1 : 4 9 P M 22 adamant. Was there some sort of dispute as to whether or not

1 : 4 9 P M 23 to run a negative test?

1 : 4 9 P M 24 MR. BROCK: Object to that, Your Honor. We've been

1 : 4 9 P M 25 over this about three times now. Object as asked and answered.

## MILES RANDAL EZELL - CROSS

1 THE COURT: Sustained.

2 BY MR. HARTLEY:

3 Q. Do you think it was a good, sound policy to run a negative  
4 test?

5 A. I do agree it was a good, sound policy.

6 Q. Do you have any reason to believe that the BP well site  
7 leaders disagreed with the decision to run a negative test?

8 A. I don't think they disagreed, no.

9 Q. In the end, you understand now that there was a pressure  
10 differential between the reading on the drill pipe and the  
11 reading on the kill line?

12 A. Yes.

13 Q. Now, you didn't know that when you talked to Jason  
14 Anderson that night, did you?

15 A. I did not know that.

16 Q. Had you known that, would you have responded in a  
17 different manner?

18 A. Had Jason told me he had a problem or something he  
19 couldn't understand, I would have been right there with him.

20 Q. Prior to getting into a well control situation or a well  
21 control event and addressing that, certain personnel on the rig  
22 have a responsibility to monitor the well in an attempt to  
23 detect the situation before it gets out of hand. Would you  
24 agree with that?

25 A. Yes.

## MILES RANDAL EZELL - CROSS

1 : 5 0 P M 1 Q. And that well monitoring responsibility lies primarily  
1 : 5 0 P M 2 with the Transocean drill crew?  
1 : 5 0 P M 3 A. Primarily.  
1 : 5 0 P M 4 Q. Primarily.  
1 : 5 0 P M 5 If we look at TREN-1453 at 48232, we've talked about  
1 : 5 0 P M 6 the well control handbook, Mr. Ezell. Are you also familiar  
1 : 5 0 P M 7 with the *Deepwater Horizon Emergency Response Manual*?  
1 : 5 0 P M 8 A. Yes.  
1 : 5 0 P M 9 Q. That's something that was kept on the rig?  
1 : 5 1 P M 10 A. Yes.  
1 : 5 1 P M 11 Q. And what is your understanding of the purpose of the  
1 : 5 1 P M 12 *Deepwater Horizon Emergency Response Manual*?  
1 : 5 1 P M 13 A. It was a guide to kind of assist you in any major  
1 : 5 1 P M 14 emergency.  
1 : 5 1 P M 15 Q. And if we look at paragraph 2 in TREN-1453 in the  
1 : 5 1 P M 16 emergency response manual, it talks about the detection of a  
1 : 5 1 P M 17 kick. Do you see that section, Mr. Ezell?  
1 : 5 1 P M 18 A. Yes, sir.  
1 : 5 1 P M 19 Q. It reads: "Detection of a kick (intrusion of liquid or  
1 : 5 1 P M 20 gas into the wellbore) is the responsibility of the driller."  
1 : 5 1 P M 21 That's a statement with which you agree; right?  
1 : 5 1 P M 22 A. It is a driller's responsibility for kick detection.  
1 : 5 1 P M 23 Q. "The driller and his crew will continuously monitor the  
1 : 5 1 P M 24 surface system indicators (flow rate, pit level, etc.) and  
1 : 5 1 P M 25 break downhole indications, such as mud pressure, for signs of

## MILES RANDAL EZELL - CROSS

1 a kick."

2 Do you agree with that?

3 A. Yes.

4 **THE COURT:** I think we've tread over this ground. I  
5 don't remember if it was this exact document, but this  
6 testimony is repetitive. This witness has already said the  
7 exact same things. So we need to move this along. Okay?

8 **MR. HARTLEY:** Absolutely, Your Honor.

9 **BY MR. HARTLEY:**

10 **Q.** At all times somebody is supposed to be in that Transocean  
11 driller's chair; isn't that true, Mr. Ezell?

12 **A.** When we're connected to the wellbore, yes.

13 **Q.** And I think earlier this morning in your testimony you  
14 said that Transocean requires at least two well control  
15 personnel to be in that drill shack.

16 **A.** That was our procedure.

17 **Q.** Now, the mud logger is in a different sort of position in  
18 terms of his well monitoring responsibilities and duties.

19 Would you agree with that?

20 **A.** I really don't know exactly what his responsibilities  
21 would be.

22 **Q.** Do you know what information is available to the mud  
23 logger or was available to the mud logger on the *Deepwater*  
24 *Horizon*?

25 **A.** To the best of my knowledge, they had all the information

## MILES RANDAL EZELL - CROSS

1 : 5 2 P M 1 that was available to us on the HITEC; and, of course, they had  
1 : 5 2 P M 2 other data that they were looking at.

1 : 5 3 P M 3 Q. You know Joe Keith, don't you?

1 : 5 3 P M 4 A. Excuse me?

1 : 5 3 P M 5 Q. You know Joe Keith?

1 : 5 3 P M 6 A. I do.

1 : 5 3 P M 7 Q. You worked with him for quite a long time; isn't that  
1 : 5 3 P M 8 right?

1 : 5 3 P M 9 A. Yeah. I don't know the exact amount of time, but, yes,  
1 : 5 3 P M 10 sir, a long time.

1 : 5 3 P M 11 Q. He had been on the rig since '01, '02?

1 : 5 3 P M 12 A. Possibly. I can't remember exactly when he came on, but I  
1 : 5 3 P M 13 will agree it was a pretty good length of time.

1 : 5 3 P M 14 Q. And he did a good job. You thought he was a good man,  
1 : 5 3 P M 15 didn't you?

1 : 5 3 P M 16 A. I had no problem with Joseph Keith.

1 : 5 3 P M 17 Q. You never had a situation in which Joe Keith missed a  
1 : 5 3 P M 18 kick, did you?

1 : 5 3 P M 19 A. No, sir, not any that I'm aware of.

1 : 5 3 P M 20 MR. HARTLEY: Robin, let's pull up D-8179.

1 : 5 3 P M 21 BY MR. HARTLEY:

1 : 5 3 P M 22 Q. Very quickly, Mr. Ezell. Ms. Clingman showed you an  
1 : 5 3 P M 23 animated version of the drill shack. I don't have that one,  
1 : 5 3 P M 24 but I've got a static display. And what I want to ask you  
1 : 5 4 P M 25 about, there's a screen over here on the left-hand side that's

## MILES RANDAL EZELL - CROSS

1 : 5 4 P M 1 labeled "Drillers Sperry-Sun display."  
1 : 5 4 P M 2 Do you see that?  
1 : 5 4 P M 3 A. I do.  
1 : 5 4 P M 4 Q. You've talked briefly with Ms. Clingman this morning about  
1 : 5 4 P M 5 the information displayed on there. Can you give us some sort  
1 : 5 4 P M 6 of visual on what the driller would see in his A-chair looking  
1 : 5 4 P M 7 at that screen?  
1 : 5 4 P M 8 A. To be totally honest with you, we didn't use that screen a  
1 : 5 4 P M 9 lot. We relied heavily on the HITEC, which was in the direct  
1 : 5 4 P M 10 line of sight with the driller and the rotary table, because he  
1 : 5 4 P M 11 has to have the ability to monitor that information and plus  
1 : 5 4 P M 12 watch what's going on in front of him.  
1 : 5 4 P M 13 It was a peripheral-type monitor for us to kind of  
1 : 5 4 P M 14 support, if we needed to, what we saw.  
1 : 5 4 P M 15 Q. You viewed the mud logger simply as a backup to you?  
1 : 5 5 P M 16 A. A mud logger was a backup to me.  
1 : 5 5 P M 17 Q. To your knowledge, was all of the information the mud  
1 : 5 5 P M 18 logger had in his shack available to you on this screen in  
1 : 5 5 P M 19 D-8179?  
1 : 5 5 P M 20 A. Yes, sir, I believe he had all the information that we  
1 : 5 5 P M 21 had.  
1 : 5 5 P M 22 Q. And vice versa, you had all of the information he had?  
1 : 5 5 P M 23 A. No, sir, that's not the case.  
1 : 5 5 P M 24 Q. What information did the mud logger have that was not  
1 : 5 5 P M 25 available to the Transocean drill crew?

## MILES RANDAL EZELL - CROSS

1 : 5 5 P M 1 A. I don't know the full scope of it, but there were -- there  
1 : 5 5 P M 2 were other parameters that were specifically part of Sperry  
1 : 5 5 P M 3 data that was not part of ours.  
1 : 5 5 P M 4 Ours had a full array, plus it also had all the  
1 : 5 5 P M 5 control features for the equipment. So there were differences.  
1 : 5 5 P M 6 Q. Are you speaking about the MWD/LWD type data?  
1 : 5 5 P M 7 A. I am, yes.  
1 : 5 5 P M 8 Q. So let me make my question a little more precise. All of  
1 : 5 6 P M 9 the information that the mud logging unit, the mud logger was  
1 : 5 6 P M 10 watching, all of that data -- pit sensors, blowout, gas  
1 : 5 6 P M 11 traps -- all of that information was available to the  
1 : 5 6 P M 12 Transocean drill crew?  
1 : 5 6 P M 13 A. Yeah, we had that on HITEC or the mud logger did have it.  
1 : 5 6 P M 14 Q. Based on the position of the drill shack and the  
1 : 5 6 P M 15 responsibility of the driller, is it fair to say that there  
1 : 5 6 P M 16 aren't operations going on on that rig floor that the driller  
1 : 5 6 P M 17 is not aware of?  
1 : 5 6 P M 18 A. Any operations that would definitely be in the driller's  
1 : 5 6 P M 19 line of sight -- and you can see what that would be -- would  
1 : 5 6 P M 20 definitely be something he would be aware of.  
1 : 5 6 P M 21 Q. Would the driller be aware of movement of mud between  
1 : 5 6 P M 22 various pits on the rig?  
1 : 5 6 P M 23 A. Yes, he would.  
1 : 5 6 P M 24 Q. Would the driller be aware of when the sand trap's being  
1 : 5 7 P M 25 emptied?

## MILES RANDAL EZELL - CROSS

1 A. Yes, he would. It would be a different way of discovering  
2 that; but, yes, yes, he would be aware.

3 Q. Similarly, he would know if the trip tanks were being  
4 dumped?

5 A. Yes, he would know that.

6 MR. HARTLEY: Robin, let's put up D-8180, please.

7 BY MR. HARTLEY:

8 Q. Have you been to the mud logging shack on the *Deepwater*  
9 *Horizon*?

10 A. In nine years, I've probably been in that shack maybe  
11 twice. It was very rare.

12 Q. Do you remember the last time you were in that shack?

13 A. No. It could have been as much as a year prior to the  
14 incident. But, you know, it had its own purge system with an  
15 alarm, and you had to jump in and jump out, you know, or you  
16 would set that off. I really had no need to go in.

17 Q. In D-8180, it shows, in the upper left-hand corner, an  
18 exterior view. Does that look like the mud logging shack that  
19 was on the *Deepwater Horizon*?

20 A. I guess. I have very little information on that, but it's  
21 similar.

22 Q. In the lower right, we've pulled out a circa 2003 picture  
23 of the *Deepwater Horizon* mud logging shack. Does that fairly  
24 and accurately represent, as best you recall, what the shack  
25 would look like from the inside?



## MILES RANDAL EZELL - CROSS

1:58 PM 1 MS. CLINGMAN: Your Honor, I'm going to object, lack  
1:58 PM 2 of foundation. The witness has said he doesn't know anything  
1:58 PM 3 about this area in --

1:58 PM 4 THE COURT: Well, I don't know if he does or he  
1:58 PM 5 doesn't. Have you been inside of there?

1:58 PM 6 THE WITNESS: Yes, sir, I have; but it's only been a  
1:58 PM 7 couple of times and I don't have a real good memory of it.

1:58 PM 8 THE COURT: All right.

1:58 PM 9 BY MR. HARTLEY:

1:58 PM 10 Q. Do you have an understanding or a sense of what data is  
1:58 PM 11 available to the mud logger while he's on tour in terms of rig  
1:58 PM 12 operations?

1:58 PM 13 A. I'm sure that just like we've been discussing, he was  
1:58 PM 14 connected with HITEC. So he had the ability to see what we  
1:59 PM 15 were seeing on the HITEC monitor.

1:59 PM 16 Q. Was he in a position where you could see the rotary table?

1:59 PM 17 A. No. He was behind the drawworks.

1:59 PM 18 Q. Was he in a position to, with the exception of following  
1:59 PM 19 data on his screen, understand what rig operations were  
1:59 PM 20 underway?

1:59 PM 21 MS. CLINGMAN: Objection, Your Honor, lack of  
1:59 PM 22 foundation as to what he would understand from the mud logger's  
1:59 PM 23 shack.

1:59 PM 24 THE COURT: Overruled.

1:59 PM 25 Can you answer that, sir?

## MILES RANDAL EZELL - CROSS

1 : 59 PM 1           **THE WITNESS:** I'm thinking. Would you please  
1 : 59 PM 2 restate?

1 : 59 PM 3           **THE COURT:** Was he in a physical position? Is that  
1 : 59 PM 4 what you mean?

1 : 59 PM 5           **MR. HARTLEY:** Yes, sir.

1 : 59 PM 6           **THE COURT:** Physical location?

1 : 59 PM 7           **MR. HARTLEY:** Yes.

1 : 59 PM 8           **MS. CLINGMAN:** He answered that question. Then he  
1 : 59 PM 9 said would he be able to understand what operations were going  
1 : 59 PM 10 on. That was the question to which I lodged an objection to.

1 : 59 PM 11           **MR. HARTLEY:** Let me go at it a different way.

1 : 59 PM 12           **THE COURT:** Why don't you do that. I understood the  
1 : 59 PM 13 question somewhat differently, but go ahead and ask the  
1 : 59 PM 14 question again.

1 : 59 PM 15 **BY MR. HARTLEY:**

1 : 59 PM 16 **Q.** In your experience as a driller toolpusher, senior  
2 : 00 PM 17 toolpusher on the *Deepwater Horizon*, when you're on tour in the  
2 : 00 PM 18 drill shack, do you call the mud logger and advise him of what  
2 : 00 PM 19 operations are going on on the rig?

2 : 00 PM 20 **A.** The mud logger is generally always in the loop. He should  
2 : 00 PM 21 come to the pre-tower meeting to know what's going to happen  
2 : 00 PM 22 during the day.

2 : 00 PM 23 **Q.** When you say he's generally always in the loop, how does  
2 : 00 PM 24 he get into the loop, with the exception of attending the  
2 : 00 PM 25 pre-tower meeting?

## MILES RANDAL EZELL - CROSS

2:00 PM 1 A. Communication. Yeah, the driller would talk to the mud  
2:00 PM 2 logger.

2:00 PM 3 Q. And that's the requirement of a driller's job, to  
2:00 PM 4 communicate effectively with the mud logger, to advise him of  
2:00 PM 5 what's going on on the rig?

2:00 PM 6 A. I don't know if it's a requirement for his job, but it's  
2:00 PM 7 something that we did do. We did communicate.

2:00 PM 8 Q. It would be a good, safe practice to tell the mud  
2:00 PM 9 logger -- for example, if you're moving mud between pits, if  
2:00 PM 10 you're dumping a trip tank, those sorts of operations, to tell  
2:01 PM 11 him would be a good, safe practice, in your experience?

2:01 PM 12 A. Yes, it would be a safe practice, for sure.

2:01 PM 13 Q. I want to turn briefly to this prior control event that  
2:01 PM 14 you talked about earlier.

2:01 PM 15 Do you recall testifying that you had been briefed on  
2:01 PM 16 the *Sedco 711* event in the North Sea?

2:01 PM 17 A. Yes.

2:01 PM 18 Q. That's a well control event that happened on, what,  
2:01 PM 19 December 23 of 2009?

2:01 PM 20 A. Can you show me the document to refresh my memory? I  
2:01 PM 21 don't remember the date exactly.

2:01 PM 22 **MR. HARTLEY:** Absolutely. Let's show Exhibit 1523.

2:01 PM 23 **BY MR. HARTLEY:**

2:01 PM 24 Q. If we look at the upper right-hand corner, this is the  
2:01 PM 25 well operations group advisory issued on April 5th of 2010. Do

## MILES RANDAL EZELL - CROSS

2:01 PM 1 you recall ever seeing this prior to April 20th of 2010?

2:01 PM 2 A. No, sir, not -- not prior to.

2:02 PM 3 Q. Okay. Let's look at Exhibit 926. This is -- in the upper  
2:02 PM 4 right-hand corner, an April 14th, 2010 advisory just issued in  
2:02 PM 5 the North Sea. Do you recall ever seeing this advisory prior  
2:02 PM 6 to April 20th, 2010?

2:02 PM 7 A. No, sir. But those are so current that I don't know that  
2:02 PM 8 they even had a chance to go through the management process to  
2:02 PM 9 where they're distributed in the right places. They're very  
2:02 PM 10 current.

2:02 PM 11 Q. Do you know who Bill Sannan is?

2:02 PM 12 A. Yes, I do.

2:02 PM 13 Q. General manager for North America Transocean at the time?

2:02 PM 14 A. Yes.

2:02 PM 15 Q. Do you know if he would have been the individual  
2:02 PM 16 responsible for circulating the April 5th global advisory?

2:02 PM 17 A. I'm sorry, I don't know.

2:02 PM 18 Q. Fair enough.

2:02 PM 19 This morning, in testifying in response to  
2:02 PM 20 Mr. Sterbcow's questions, you said something to the effect,  
2:02 PM 21 lessons learned would not add value because the crew was  
2:03 PM 22 already aware of basic concepts. Do you recall that?

2:03 PM 23 A. I do.

2:03 PM 24 Q. Do you think it would be helpful to be reminded to  
2:03 PM 25 exercise additional vigilance, for example, after a negative

## MILES RANDAL EZELL - CROSS

2 : 0 3 P M 1 test or displacing seawater?

2 : 0 3 P M 2 A. I really don't think these would have been of great value

2 : 0 3 P M 3 to the crew because they were a competent crew. They were well

2 : 0 3 P M 4 trained, and I don't think it would have been a large value to

2 : 0 3 P M 5 them.

2 : 0 3 P M 6 Q. You certainly would want them to continue going through

2 : 0 3 P M 7 training and progressing in their skills?

2 : 0 3 P M 8 A. Right, but this is basic well control examples here.

2 : 0 3 P M 9 Q. And they should have an understanding of basic well

2 : 0 3 P M 10 control?

2 : 0 3 P M 11 A. I'm sorry, I didn't hear you.

2 : 0 3 P M 12 Q. And they should have that understanding of basic well

2 : 0 3 P M 13 control?

2 : 0 3 P M 14 A. Yes, yes.

2 : 0 3 P M 15 Q. Things like paying extra vigilance when you remove the

2 : 0 3 P M 16 primary barrier in the well?

2 : 0 3 P M 17 A. Yes. They were aware that barriers would fail or could

2 : 0 3 P M 18 fail.

2 : 0 3 P M 19 Q. Things like shutting in immediately upon detection or

2 : 0 3 P M 20 suspicion of a kick?

2 : 0 3 P M 21 A. They were also well aware of that.

2 : 0 3 P M 22 Q. Things like at the first indication of a potential kick,

2 : 0 4 P M 23 you shut the pump's flow check and then shut in, as you

2 : 0 4 P M 24 discussed with Ms. Clingman?

2 : 0 4 P M 25 A. They were highly aware of that as well.

## MILES RANDAL EZELL - CROSS

2 : 0 4 P M 1 Q. In response to Mr. Sterbcow's questions, you said  
2 something about the drill crew, that they were doing everything  
3 within their training to keep the well under control. Do you  
4 recall that?

2 : 0 4 P M 5 A. Yeah, I believe I do.

2 : 0 4 P M 6 Q. And that would be the sort of things we just discussed  
7 about how you would appropriately respond to a well control  
8 event. Is that what you meant?

2 : 0 4 P M 9 A. I meant they exercised all the training that they had been  
10 taught to try to get the well under control in those last few  
11 minutes.

2 : 0 4 P M 12 Q. Do you know when the drill crew first had any indication  
13 that there may be a problem downhole?

2 : 0 4 P M 14 MR. BROCK: I'm going to object on foundation.

2 : 0 4 P M 15 THE COURT: Sustained.

2 : 0 4 P M 16 BY MR. HARTLEY:

2 : 0 4 P M 17 Q. In your discussions with Mr. Anderson or Mr. Curtis, did  
18 they convey to you any information that would suggest when they  
19 suspected a problem?

2 : 0 5 P M 20 A. They didn't relay any of that to me, no, until the very  
21 end.

2 : 0 5 P M 22 Q. And that would be the call from Mr. Curtis?

2 : 0 5 P M 23 A. It would be.

2 : 0 5 P M 24 Q. That's when he told you, "Randy, we have a problem. We  
25 have mud shooting to the crown"?

## MILES RANDAL EZELL - CROSS

2 : 0 5 P M 1 A. Correct.

2 : 0 5 P M 2 Q. You responded, "Is the well shut in?"

2 : 0 5 P M 3 A. Right.

2 : 0 5 P M 4 Q. He said, "Jason's shutting it in now"?

2 : 0 5 P M 5 A. Yes.

2 : 0 5 P M 6 Q. That would suggest at least that mud was shooting up to  
2 : 0 5 P M 7 the crown prior to an effort to shut in the well; right?

2 : 0 5 P M 8 MS. CLINGMAN: Your Honor, I would object not only to  
2 : 0 5 P M 9 foundation, but this is repetitive. This is what Mr. Ezell  
2 : 0 5 P M 10 testified to earlier.

2 : 0 5 P M 11 THE COURT: It is. I sustain the objection.

2 : 0 5 P M 12 BY MR. HARTLEY:

2 : 0 5 P M 13 Q. Based on your understanding of your conversation with  
2 : 0 5 P M 14 Mr. Curtis, when did they first attempt to shut in the well?

2 : 0 5 P M 15 A. I have no idea.

2 : 0 5 P M 16 Q. That shut-in process would be the two-button sequence you  
2 : 0 5 P M 17 discussed. It would take about 50 seconds?

2 : 0 5 P M 18 A. I don't know exactly what they shut in first, to tell you  
2 : 0 6 P M 19 the truth.

2 : 0 6 P M 20 Q. Based on your experience and your well control training  
2 : 0 6 P M 21 over 20-some odd years, what is the Transocean policy for the  
2 : 0 6 P M 22 first element to shut in -- to shut in the well?

2 : 0 6 P M 23 A. They would typically close an annular, but I don't know  
2 : 0 6 P M 24 which one they selected.

2 : 0 6 P M 25 Q. Were you familiar with the status of the BOP on the

## MILES RANDAL EZELL - CROSS

2:06 PM 1 *Deepwater Horizon* as of April 20th, 2010?

2:06 PM 2 A. Explain what you mean by "status."

2:06 PM 3 Q. Did you know what were -- what was in each of the ram

2:06 PM 4 cavities?

2:06 PM 5 A. Yes, I did at that time.

2:06 PM 6 Q. And you knew the lower annular had been converted to a

2:06 PM 7 stripping packer in, what, 2006?

2:06 PM 8 A. I'm not sure of the right date, but, yes.

2:06 PM 9 Q. It had been converted to a stripping packer prior to

2:06 PM 10 April 20th, 2010?

2:06 PM 11 A. Yes, it had been converted prior to 2010.

2:07 PM 12 Q. So you wouldn't expect the drill crew to shut that annular

2:07 PM 13 in a well control event to try to contain the flood?

2:07 PM 14 A. I can't answer for what the guys thought or what they

2:07 PM 15 did --

2:07 PM 16 Q. That's fair.

2:07 PM 17 A. -- at that moment.

2:07 PM 18 Q. That's fair.

2:07 PM 19 Based on your experience and your training, what

2:07 PM 20 would you do first in attempting to shut the well in on the

2:07 PM 21 *Deepwater Horizon*?

2:07 PM 22 A. I think that would have been a call that I would have had

2:07 PM 23 made when I was on the floor that night. I mean, I don't know

2:07 PM 24 that I can sit here in the courtroom and make that call here.

2:07 PM 25 Q. It's tough to put yourself in their shoes.



## MILES RANDAL EZELL - CROSS

2 : 0 7 P M 1 A. You don't know how tough it is.

2 : 0 8 P M 2 MR. HARTLEY: Thank you, Mr. Ezell. I don't have any

2 : 0 8 P M 3 more questions for you.

2 : 0 8 P M 4 THE WITNESS: Thank you.

2 : 0 8 P M 5 THE COURT: All right. BP?

2 : 0 8 P M 6 MR. BROCK: Yes, sir.

2 : 0 8 P M 7 Your Honor, are we good to proceed?

2 : 0 8 P M 8 THE COURT: Yes.

2 : 0 8 P M 9 CROSS-EXAMINATION

2 : 0 8 P M 10 BY MR. BROCK:

2 : 0 8 P M 11 Q. Mr. Ezell, I'm Mike Brock; and I have some questions for

2 : 0 9 P M 12 you, I'm supposed to say, on cross-examination. So just

2 : 0 9 P M 13 putting that in for the record.

2 : 0 9 P M 14 You might see me flipping through my notes here a

2 : 0 9 P M 15 bit. I had a bigger outline. Many of the questions that I had

2 : 0 9 P M 16 for you have been asked, and I'm going to do my best not to go

2 : 0 9 P M 17 back over material that's already been covered. So if you

2 : 0 9 P M 18 would just be patient with me a little bit, I would appreciate

2 : 0 9 P M 19 that.

2 : 0 9 P M 20 A. Yes, sir.

2 : 0 9 P M 21 Q. I understood from your testimony yesterday and today that

2 : 0 9 P M 22 your recollection is that the *Deepwater Horizon* had drilled

2 : 0 9 P M 23 about 50 wells in the Gulf of Mexico. Correct?

2 : 0 9 P M 24 A. Yes, sir, 50-plus, I think.

2 : 0 9 P M 25 Q. You drilled the deepest in history at the time it was

## MILES RANDAL EZELL - CROSS

2 : 0 9 P M 1 drilled, and that was the Tiber; correct?

2 : 0 9 P M 2 A. That is correct.

2 : 0 9 P M 3 Q. And the deepest water depth well, which was the Walker

2 : 0 9 P M 4 Ridge well?

2 : 0 9 P M 5 A. Correct.

2 : 0 9 P M 6 Q. And going into April of 2010, you-all had a history --

2 : 1 0 P M 7 safety history that was very impressive in terms of not having

2 : 1 0 P M 8 a lost time incident for about seven years?

2 : 1 0 P M 9 A. That's also correct.

2 : 1 0 P M 10 Q. And the men and women of the *Deepwater Horizon* were very

2 : 1 0 P M 11 proud of their record both in terms of performance -- that is,

2 : 1 0 P M 12 drilling wells -- as well as in the area of safety?

2 : 1 0 P M 13 A. Yes, sir, we were.

2 : 1 0 P M 14 Q. And as you've expressed here today, the folks at BP were

2 : 1 0 P M 15 also proud of the record that Transocean had developed on the

2 : 1 0 P M 16 *Deepwater Horizon* during that period of time?

2 : 1 0 P M 17 A. They were exceptionally proud of *Deepwater Horizon*.

2 : 1 0 P M 18 Q. And on most of these wells that were drilled in the Gulf

2 : 1 0 P M 19 of Mexico, Halliburton was also a partner in those endeavors

2 : 1 0 P M 20 providing advice about cement?

2 : 1 0 P M 21 A. That's correct.

2 : 1 0 P M 22 Q. On each of these wells -- I think you said maybe one was

2 : 1 1 P M 23 done for a different company; but on each of these wells, you

2 : 1 1 P M 24 would be executing a BP drilling plan?

2 : 1 1 P M 25 A. Correct.

## MILES RANDAL EZELL - CROSS

2 : 11 PM 1 Q. And you would be working with BP well site leaders who  
2 : 11 PM 2 would be there on the *Deepwater Horizon* during the operations?  
2 : 11 PM 3 A. That's correct.  
2 : 11 PM 4 Q. And then you would also be interacting with different  
2 : 11 PM 5 contractors that might be there, like the mud contractor, the  
2 : 11 PM 6 cement contractor. You might have other people there to do  
2 : 11 PM 7 special tools or special tasks. But you would have a good  
2 : 11 PM 8 number of contractors that would be on the rig also?  
2 : 11 PM 9 A. That's correct, too.  
2 : 11 PM 10 Q. And it was your view that the *Deepwater Horizon*, working  
2 : 11 PM 11 with BP and these other contractors over a long period of time,  
2 : 11 PM 12 had established a very good track record?  
2 : 11 PM 13 A. You're right.  
2 : 11 PM 14 Q. It was a good team?  
2 : 11 PM 15 A. It was a very good team.  
2 : 11 PM 16 Q. And it's important in this business, the specialty  
2 : 11 PM 17 business of deepwater drilling, that you have good cooperation  
2 : 12 PM 18 and good communication between the parties as the drilling  
2 : 12 PM 19 process is ongoing?  
2 : 12 PM 20 A. Yes.  
2 : 12 PM 21 Q. Now, you mentioned earlier today -- I believe they showed  
2 : 12 PM 22 you a document where it showed that you came on board on April  
2 : 12 PM 23 the 13th -- do you remember that -- and then would have been  
2 : 12 PM 24 there up until the 20th?  
2 : 12 PM 25 A. Yes, sir, I believe I do.

## MILES RANDAL EZELL - CROSS

2 : 12 PM 1 Q. Okay. So that would have been about seven days before the  
2 : 12 PM 2 event that you had been on board?  
2 : 12 PM 3 A. Yes, sir, about that.  
2 : 12 PM 4 Q. Okay. And the records that I've looked at show that you  
2 : 12 PM 5 also were there for hitches for 1/19 -- that is, January 19th  
2 : 12 PM 6 of 2010 -- to February 8th, 2010. And then you would have also  
2 : 12 PM 7 had a hitch from March the 4th, 2010, to March the 25th, 2010.  
2 : 12 PM 8 Does that sound right?  
2 : 12 PM 9 A. Yes, sir. It's been a long time, but that sounds like it  
2 : 13 PM 10 could be possibly, yes.  
2 : 13 PM 11 Q. Your schedule would be 21 days -- well, you were on  
2 : 13 PM 12 14 days on and 14 days off? Or 21?  
2 : 13 PM 13 A. No, it would have been 21.  
2 : 13 PM 14 Q. 21, I'm sorry. Yeah, 3/4/2010 to 3/25, you would have  
2 : 13 PM 15 been on the 21-day schedule?  
2 : 13 PM 16 A. Yes, sir.  
2 : 13 PM 17 Q. Now, on those three hitches -- that is, from the time you  
2 : 13 PM 18 went to the Macondo well site up through the explosion that  
2 : 13 PM 19 took place on April the 20th -- you never felt pressure to rush  
2 : 13 PM 20 through the operations; is that correct?  
2 : 13 PM 21 A. Not at all.  
2 : 13 PM 22 Q. And at all times when you were on the *Deepwater Horizon* at  
2 : 13 PM 23 Macondo, you felt that Transocean and BP personnel on board the  
2 : 13 PM 24 rig were acting in a careful, safe, and prudent manner?  
2 : 13 PM 25 A. Yes, sir.

## MILES RANDAL EZELL - CROSS

2 : 13 PM 1 Q. You believed that the operations on board the rig were  
2 : 13 PM 2 safe?

2 : 13 PM 3 A. I did.

2 : 14 PM 4 Q. I want to ask you just a couple questions about the well  
2 : 14 PM 5 control manual that we haven't covered. I'm not going to pull  
2 : 14 PM 6 it up and ask you in detail.

2 : 14 PM 7 Is it correct that copies of the Transocean well  
2 : 14 PM 8 control manual were available on the rig floor in the  
2 : 14 PM 9 toolpusher's office, in the OIM's office, and that the drillers  
2 : 14 PM 10 had individual copies of that well control manual?

2 : 14 PM 11 A. The well control manuals were at those locations.

2 : 14 PM 12 MR. BROCK: Now, if I could go back and just ask that  
2 : 14 PM 13 we pull up Exhibit D-365, please.

2 : 14 PM 14 BY MR. BROCK:

2 : 15 PM 15 Q. You were -- can you see this okay?

2 : 15 PM 16 A. Yes, sir.

2 : 15 PM 17 Q. Okay. You were shown a little earlier the organization  
2 : 15 PM 18 chart that covers the drilling operations. Do you remember  
2 : 15 PM 19 that? It had the OIM to the senior toolpusher, and then right  
2 : 15 PM 20 on down, toolpusher to deckpusher and driller. Do you remember  
2 : 15 PM 21 those conversations?

2 : 15 PM 22 A. Yes, I do, sir.

2 : 15 PM 23 Q. Now, this, in fact, is the Transocean *Deepwater Horizon*  
2 : 15 PM 24 organizational chart for the entire rig, isn't it?

2 : 15 PM 25 A. I'm not sure it's for the entire rig.

## MILES RANDAL EZELL - CROSS

2 : 15 PM 1 Q. Okay. Well, it takes into account, at least on the  
2 : 15 PM 2 left-hand side over there, the marine operations, it has the  
2 : 15 PM 3 drilling operations, and then it has "Maintenance" and  
2 : 15 PM 4 "Materials" over on the right-hand side, if you look at the  
2 : 15 PM 5 lines reporting directly to the OIM. Do you see that?  
2 : 15 PM 6 A. Yes, it does have quite a few more positions on this one.  
2 : 16 PM 7 Q. Right. Than the one that you looked at earlier?  
2 : 16 PM 8 A. Yes.  
2 : 16 PM 9 Q. And you would agree that the OIM was the person who was in  
2 : 16 PM 10 charge of the *Deepwater Horizon* rig?  
2 : 16 PM 11 A. The OIM was the PIC when we were drilling.  
2 : 16 PM 12 Q. He was in charge of the rig, wasn't he?  
2 : 16 PM 13 A. Yes, he was the PIC.  
2 : 16 PM 14 Q. The good news is that every one of these pages I'm turning  
2 : 16 PM 15 is one where I'm not asking questions, so just hang with me  
2 : 16 PM 16 here.  
2 : 16 PM 17 A. That is good news.  
2 : 16 PM 18 Q. All right. Just a couple more details on the driller's  
2 : 16 PM 19 obligations in terms of shutting in the well.  
2 : 16 PM 20 You would agree that the driller, the moment he or  
2 : 16 PM 21 she sees a hydrocarbon influx, would want to start controlling  
2 : 17 PM 22 the well?  
2 : 17 PM 23 A. Yes.  
2 : 17 PM 24 Q. And that you do not wait to see how the situation develops  
2 : 17 PM 25 before you exercise well control?

## MILES RANDAL EZELL - CROSS

2 : 17 PM 1 A. Well control should be -- the first thing on a driller's  
2 : 17 PM 2 mind would be minimize the influx, shut it in as soon as  
2 : 17 PM 3 possible.

2 : 17 PM 4 Q. Do you agree with my statement that you shouldn't wait to  
2 : 17 PM 5 see how the situation develops before you implement your well  
2 : 17 PM 6 control measures?

2 : 17 PM 7 A. No, you shouldn't wait to see how it develops.

2 : 17 PM 8 Q. Right. Thank you.

2 : 17 PM 9 And the reason for that is that if you shut in the  
2 : 17 PM 10 well quickly, it will minimize the influx of formation fluids?

2 : 17 PM 11 A. Correct.

2 : 17 PM 12 Q. And the purpose of shutting in the well immediately is to  
2 : 17 PM 13 keep hydrocarbons below the BOP?

2 : 17 PM 14 A. To minimize the influx.

2 : 18 PM 15 Q. I think you've said this, and I apologize for asking it  
2 : 18 PM 16 again, but just in case.

2 : 18 PM 17 Do you agree that nothing is more important than well  
2 : 18 PM 18 control, that that is the primary goal of the Transocean crew?

2 : 18 PM 19 MS. CLINGMAN: I'm going to object that it's been  
2 : 18 PM 20 asked and answered, but maybe not --

2 : 18 PM 21 THE COURT: All right. I'll let him answer. That's  
2 : 18 PM 22 fine.

2 : 18 PM 23 THE WITNESS: Can I answer it?

2 : 18 PM 24 THE COURT: Yes.

2 : 18 PM 25 THE WITNESS: Would you state it again?

## MILES RANDAL EZELL - CROSS

2 : 18 PM 1 **BY MR. BROCK:**

2 : 18 PM 2 **Q.** Yes. I'll be happy to.

2 : 18 PM 3           You would agree that nothing is more important than

2 : 18 PM 4 well control? That's your primary goal?

2 : 18 PM 5 **A.** Well control is a primary goal.

2 : 18 PM 6 **Q.** Now, you've talked a little bit about certification for

2 : 18 PM 7 well control in the period of 2001 to 2010. I wanted just to

2 : 18 PM 8 ask you a few follow-up questions about that, sir.

2 : 18 PM 9           If we could turn to TREX-52652, please.

2 : 19 PM 10           Do you see this is "Fundamental Well Control

2 : 19 PM 11 Course-Content and Objectives"? Do you see that?

2 : 19 PM 12 **A.** Yes, sir.

2 : 19 PM 13 **Q.** Then if we look at 526521.2, if you could pull that out,

2 : 19 PM 14 please.

2 : 19 PM 15           Do you see this is going over the areas of

2 : 19 PM 16 instruction, evaluation, and testing?

2 : 19 PM 17 **A.** Yes. Give me just a moment to fully read it here.

2 : 19 PM 18 **Q.** Sure.

2 : 19 PM 19 **A.** (Witness reviews document.)

2 : 19 PM 20           Okay.

2 : 19 PM 21 **Q.** Okay. Actually, I have one here that's not highlighted.

2 : 19 PM 22 Do you see the section "Formation Fracture Pressures"? Do you

2 : 19 PM 23 see that? Fourth bullet --

2 : 20 PM 24 **A.** Yes, I do. I do.

2 : 20 PM 25 **Q.** -- fourth bullet down?



## MILES RANDAL EZELL - CROSS

2 : 2 0 P M 1 And is there a section there, "Why's and When's of  
2 : 2 0 P M 2 FIT and LOT Procedure"?

2 : 2 0 P M 3 A. Yes.

2 : 2 0 P M 4 Q. What is the FIT procedure?

2 : 2 0 P M 5 A. That's formation and integrity.

2 : 2 0 P M 6 Q. Test?

2 : 2 0 P M 7 A. And leak-off test procedure.

2 : 2 0 P M 8 Q. And was this part of the course material that would be  
2 : 2 0 P M 9 included in your well control training?

2 : 2 0 P M 10 A. If we look back, I believe this was entitled "Fundamental  
2 : 2 0 P M 11 Well Control Training." It was not the supervisory training.

2 : 2 0 P M 12 Q. In supervisory training, would you receive training in FIT  
2 : 2 0 P M 13 and LOT procedures?

2 : 2 0 P M 14 A. To some degree, but it's not outlined as we're looking at  
2 : 2 0 P M 15 here.

2 : 2 0 P M 16 Q. It would be at a different format and at a higher level?

2 : 2 1 P M 17 A. It would be at some format, yes. I can't remember exactly  
2 : 2 1 P M 18 what.

2 : 2 1 P M 19 Q. Did you receive training on the why's and when's of the  
2 : 2 1 P M 20 FIT and LOT procedures?

2 : 2 1 P M 21 A. Yes, to some degree. Of course, that's our client or the  
2 : 2 1 P M 22 oil company that actually, you know, handles that particular  
2 : 2 1 P M 23 procedure there, both -- what we get is kind of an overview,  
2 : 2 1 P M 24 just kind of a global view of why this is happening.

2 : 2 1 P M 25 Q. Okay. Thank you.

## MILES RANDAL EZELL - CROSS

2:21PM 1 Let me ask you to turn -- or let's -- or I'm going to  
2:21PM 2 turn now to one section from the well control handbook,  
2:21PM 3 TREX-1454. And if we can go to call-out 14.2.

2:21PM 4 And I'm not going to cover this in detail, but I just  
2:22PM 5 need to show you this for the next one.

2:22PM 6 Do you see here, on the first one, it says, "It is  
2:22PM 7 the responsibility of the driller to shut in the well as  
2:22PM 8 quickly as possible if a kick is indicated or suspected"?

2:22PM 9 Do you see that?

2:22PM 10 A. Yes, sir, I do see that.

2:22PM 11 Q. All right. Now, if we go down to 1454215.1, I want to ask  
2:22PM 12 you a couple of questions about this section.

2:22PM 13 It says: "The driller has full authority to flow  
2:22PM 14 check or shut in the well, as he sees fit, and is expected to  
2:22PM 15 fully investigate any occurrence which deviates from a stable  
2:22PM 16 trend."

2:22PM 17 Do you see that?

2:22PM 18 A. I do.

2:22PM 19 Q. Now, you've talked about a little bit about flow check  
2:22PM 20 today. You've described that. I'm not going to ask you to go  
2:22PM 21 back into that. But if the driller sees an occurrence which  
2:22PM 22 deviates from the stable trend, how does he reach out to others  
2:22PM 23 on the rig to conduct the flow check?

2:23PM 24 A. I'm not really with your question there when you say  
2:23PM 25 "reach out to others."

## MILES RANDAL EZELL - CROSS

2 : 2 3 PM 1 Q. Yes. So let's go back to this.

2 : 2 3 PM 2 You've described what a flow check is. How does the

2 : 2 3 PM 3 driller check flow if there has been an occurrence which

2 : 2 3 PM 4 deviates from a stable trend?

2 : 2 3 PM 5 A. Well, he would typically shut his pumps down, pick up to

2 : 2 3 PM 6 where the tool joints are not located in an annular or ram, and

2 : 2 3 PM 7 he would check at that point to see if the well was flowing.

2 : 2 3 PM 8 Q. And would he do that himself? Would he make a personal

2 : 2 3 PM 9 observation to see if the well was flowing, or would he ask

2 : 2 3 PM 10 someone to do it, typically?

2 : 2 3 PM 11 A. It depends. There is a CCTV that could show the flow

2 : 2 3 PM 12 line, which he could actually see that. Or he had the ability

2 : 2 4 PM 13 to ask a checker hand to do a flow check for him.

2 : 2 4 PM 14 Q. Okay. Could you do a flow check by walking out to the

2 : 2 4 PM 15 rotary table and looking down the hole?

2 : 2 4 PM 16 A. You could, but that would be something a driller wouldn't

2 : 2 4 PM 17 do.

2 : 2 4 PM 18 Q. Could he ask someone to go out there, shine a flashlight

2 : 2 4 PM 19 down and see if a well is flowing?

2 : 2 4 PM 20 A. We used to do it in the old days like that.

2 : 2 4 PM 21 Q. Sure.

2 : 2 4 PM 22 The driller does not need permission from BP to

2 : 2 4 PM 23 conduct a flow check; is that right?

2 : 2 4 PM 24 A. That's right, he doesn't need permission.

2 : 2 4 PM 25 Q. Just so that we're all clear on this, the first thing that

## MILES RANDAL EZELL - CROSS

2 : 2 4 P M 1 you do to conduct a flow check is to shut down the pumps;  
2 : 2 4 P M 2 right?  
2 : 2 4 P M 3 A. That would be your first step.  
2 : 2 4 P M 4 Q. Right. And if the pumps are shut down, the well should be  
2 : 2 4 P M 5 static?  
2 : 2 4 P M 6 A. Correct.  
2 : 2 4 P M 7 Q. If it's flowing, if you're -- if the flow is coming back,  
2 : 2 4 P M 8 then you have a situation that you have to deal with?  
2 : 2 4 P M 9 A. You do have a situation you have to deal with and  
2 : 2 5 P M 10 understand, for sure.  
2 : 2 5 P M 11 Q. If you'll just be patient with me, we're saving time here.  
2 : 2 5 P M 12 So sorry about that.  
2 : 2 5 P M 13 A. Okay. Good. No problem.  
2 : 2 5 P M 14 Q. You've mentioned this. Let me just go back over it a  
2 : 2 5 P M 15 little more.  
2 : 2 5 P M 16 The Sperry-Sun mud loggers monitored information on a  
2 : 2 5 P M 17 continuous basis throughout the well; correct?  
2 : 2 5 P M 18 A. Yes.  
2 : 2 5 P M 19 Q. And part of their roles and responsibilities were to  
2 : 2 5 P M 20 record pit volume totals for the purpose of monitoring the  
2 : 2 5 P M 21 well?  
2 : 2 5 P M 22 A. That's my understanding.  
2 : 2 6 P M 23 Q. Did you understand that the Sperry-Sun mud logger's sole  
2 : 2 6 P M 24 obligation on the *Deepwater Horizon* was to monitor the pit  
2 : 2 6 P M 25 volumes and other information and data that the driller was

## MILES RANDAL EZELL - CROSS

2 : 2 6 P M 1 looking at?

2 : 2 6 P M 2 A. I'm not so sure it was their sole obligation, but I do

2 : 2 6 P M 3 know they had a large part to play in that.

2 : 2 6 P M 4 Q. As the senior toolpusher on board the *Deepwater Horizon*,

2 : 2 6 P M 5 you expected someone from Sperry-Sun in the mud logger's unit

2 : 2 6 P M 6 to be monitoring the data at all times?

2 : 2 6 P M 7 A. Yes.

2 : 2 6 P M 8 Q. And the mud logger is supposed to call the rig floor to

2 : 2 6 P M 9 notify someone if he takes a break or leaves the mud logger

2 : 2 6 P M 10 shack?

2 : 2 6 P M 11 A. That is correct.

2 : 2 7 P M 12 Q. All right. Let's look at Exhibit 1454.215.3, please.

2 : 2 7 P M 13 This is a document we haven't looked at today.

2 : 2 7 P M 14 You see there at the top where it says: "Recognizing

2 : 2 7 P M 15 the signs of an influx and acting with the necessary speed to

2 : 2 7 P M 16 minimize it requires constant, accurate observation and

2 : 2 7 P M 17 recording of the mud volume, weight, and relevant parameters."

2 : 2 7 P M 18 Do you see that?

2 : 2 7 P M 19 A. I do.

2 : 2 7 P M 20 Q. And then it comes down and talks about "the crucial

2 : 2 7 P M 21 feature being the communication triangle between the driller,

2 : 2 7 P M 22 the mud loggers, and the derrickman/mud engineer in the mud

2 : 2 7 P M 23 pits."

2 : 2 7 P M 24 Do you see that?

2 : 2 7 P M 25 A. Yes, sir, I do.

## MILES RANDAL EZELL - CROSS

2 : 2 7 P M 1 Q. And then it goes on to talk about how important it is to  
2 : 2 7 P M 2 maintain communication between those three points of contact.  
2 : 2 7 P M 3 Do you see that?  
2 : 2 7 P M 4 A. I do.  
2 : 2 8 P M 5 Q. The driller would be the Transocean driller; correct?  
2 : 2 8 P M 6 A. Correct.  
2 : 2 8 P M 7 Q. Mud loggers in this particular case would be the  
2 : 2 8 P M 8 Sperry-Sun mud loggers?  
2 : 2 8 P M 9 A. Correct.  
2 : 2 8 P M 10 Q. And the derrickman would be the Transocean derrickman?  
2 : 2 8 P M 11 A. Correct.  
2 : 2 8 P M 12 Q. BP is not in this particular communication triangle, are  
2 : 2 8 P M 13 they?  
2 : 2 8 P M 14 A. Not in what I'm looking at, no, sir.  
2 : 2 8 P M 15 Q. Now, on the *Deepwater Horizon* on the 18th, 19th, and  
2 : 2 8 P M 16 20th -- let me just take a step back.  
2 : 2 8 P M 17 You know who Ms. Kathleen Willis was, don't you -- or  
2 : 2 8 P M 18 is?  
2 : 2 8 P M 19 A. Yes, sir. I believe she worked for Sperry-Sun for a  
2 : 2 8 P M 20 length of time on the rig.  
2 : 2 8 P M 21 Q. Okay. And to the best of your recollection, did  
2 : 2 8 P M 22 Ms. Willis ever express to you any concerns about her ability  
2 : 2 9 P M 23 to monitor the pits or the mud?  
2 : 2 9 P M 24 A. No, sir, not to me.  
2 : 2 9 P M 25 Q. She never came to you on the 18th, 19th, or 20th to

## MILES RANDAL EZELL - CROSS

2 : 2 9 P M 1 express any concerns regarding her ability to do her job?

2 : 2 9 P M 2 A. No, sir.

2 : 2 9 P M 3 Q. She never came to you and expressed any concerns about the

2 : 2 9 P M 4 safety of the operations on board the rig?

2 : 2 9 P M 5 A. Not at all.

2 : 2 9 P M 6 Q. You also know Mr. Joseph Keith, as you referenced here

2 : 2 9 P M 7 today?

2 : 2 9 P M 8 A. I do.

2 : 2 9 P M 9 Q. He was a mud logger on the *Deepwater Horizon*, been there a

2 : 2 9 P M 10 good while?

2 : 2 9 P M 11 A. That's correct.

2 : 2 9 P M 12 Q. On the evening of April the 20th, did he ever express any

2 : 2 9 P M 13 concerns to you about the safety of the operations on board the

2 : 2 9 P M 14 rig?

2 : 2 9 P M 15 A. No, he did not.

2 : 2 9 P M 16 Q. Or did he ever say to you, as the senior toolpusher, that

2 : 2 9 P M 17 he had any concerns regarding the ability to do his job?

2 : 2 9 P M 18 A. No, sir, he didn't.

2 : 3 0 P M 19 Q. Switching now to a few questions about the negative test.

2 : 3 0 P M 20 Just telling you what I'm going to.

2 : 3 0 P M 21 It would be typical, in your experience, for

2 : 3 0 P M 22 Transocean personnel to express their views on whether or not a

2 : 3 0 P M 23 negative test was successful?

2 : 3 0 P M 24 A. They would express their view to the well site leader, of

2 : 3 0 P M 25 course.

## MILES RANDAL EZELL - CROSS

2:30 PM 1 Q. And if they saw something wrong or anything that was out  
2 of the ordinary with a negative test, you would expect them to  
3 stop and determine what was wrong before proceeding to the next  
4 step?

2:30 PM 5 A. If they recognized that there was a problem, yes, I would  
6 expect them to stop.

2:30 PM 7 Q. As the senior toolpusher on board the *Deepwater Horizon*,  
8 you would expect any of your drillers, assistant drillers, or  
9 toolpushers to halt the procedure if they saw anything that  
10 concerned them at all with respect to the negative pressure  
11 test?

2:31 PM 12 A. That's correct, they would have.

2:31 PM 13 Q. You were asked some questions earlier today about whether  
14 or not you had heard of the terms "bladder effect" or "annular  
15 compression." Do you recall that being asked of you?

2:31 PM 16 A. Yes, sir, I do.

2:31 PM 17 Q. And you said that you had not heard of the term bladder  
18 effect; correct?

2:31 PM 19 A. That's correct.

2:31 PM 20 Q. You had heard of the term annular compression?

2:31 PM 21 A. I think I have, but, I mean, it's not a common  
22 terminology. It would usually come from, possibly, a BP  
23 engineer or something like that.

2:31 PM 24 Q. Let me just -- let me just ask a couple questions here.  
25 You don't recall specifically who has used the term



## MILES RANDAL EZELL - CROSS

2 : 3 1 P M 1 annular compression in your presence, as you sit here today, do  
2 : 3 2 P M 2 you?

2 : 3 2 P M 3 A. No, sir, I don't remember who's ever even used that term.

2 : 3 2 P M 4 Q. I just want to confirm with you, though, that prior to  
2 : 3 2 P M 5 April 20th, 2010, you had heard the term annular compression in  
2 : 3 2 P M 6 connection with the work that you did on the *Deepwater Horizon*?

2 : 3 2 P M 7 A. It seemed like annular compression has come about at some  
2 : 3 2 P M 8 point. I don't know how or where it was associated -- but not  
2 : 3 2 P M 9 bladder effect.

2 : 3 2 P M 10 Q. I understood you to say that you had not heard of bladder  
2 : 3 2 P M 11 effect. I just want to confirm that you had heard the term  
2 : 3 2 P M 12 annular compression. True?

2 : 3 2 P M 13 A. I think I have.

2 : 3 2 P M 14 Q. Now, you talked a little bit about the test -- the  
2 : 3 2 P M 15 negative pressure test that was conducted at the Kodiak well  
2 : 3 2 P M 16 just prior to the *Deepwater Horizon* coming to --

2 : 3 3 P M 17 THE COURT: We lost something here.

2 : 3 3 P M 18 THE DEPUTY CLERK: I'm sorry, Judge.

2 : 3 3 P M 19 THE COURT: We'll take about a 10-minute recess.

2 : 3 3 P M 20 (WHEREUPON, the Court took a recess.)

2 : 4 8 P M 21 THE DEPUTY CLERK: All rise.

2 : 4 8 P M 22 THE COURT: All right. Please be seated. I had a  
2 : 4 8 P M 23 technical problem where my computer got turned off,  
2 : 4 8 P M 24 disconnected or something, but we're back in business now.

2 : 4 8 P M 25 All right, Mr. Brock.

## MILES RANDAL EZELL - CROSS

2 : 4 9 P M 1 MR. BROCK: May we proceed, Your Honor?

2 : 4 9 P M 2 THE COURT: Yes.

2 : 4 9 P M 3 BY MR. BROCK:

2 : 4 9 P M 4 Q. Mr. Ezell, just before the break we had introduced the  
2 : 4 9 P M 5 Kodiak well as the next topic. Do you remember that?

2 : 4 9 P M 6 A. Yes.

2 : 4 9 P M 7 Q. So let me get you to turn -- let us pull up right here  
2 : 4 9 P M 8 Exhibit 34651.1. Can you see that this is a Daily Drilling  
2 : 4 9 P M 9 Report for Macondo 727 No. 2?

2 : 4 9 P M 10 A. Yes, sir, I can.

2 : 4 9 P M 11 Q. Okay. And the Daily Drilling Report is signed here by Don  
2 : 4 9 P M 12 Vidrine, and by, it says, Miles Ezell. But you go by Randy;  
2 : 4 9 P M 13 correct?

2 : 4 9 P M 14 A. That's correct.

2 : 4 9 P M 15 Q. And that would be normal protocol for you and the well  
2 : 5 0 P M 16 site leader, to sign off on the daily drilling report?

2 : 5 0 P M 17 A. Correct.

2 : 5 0 P M 18 MR. BROCK: And if we come down a little bit to  
2 : 5 0 P M 19 33261.1 -- I'm sorry. This is the next exhibit. Go back to  
2 : 5 0 P M 20 the one before, please. 34652.1, which is a pull-out of the  
2 : 5 0 P M 21 daily drilling report. Okay.

2 : 5 0 P M 22 BY MR. BROCK:

2 : 5 0 P M 23 Q. And do you see here that the notes record that a pre-job  
2 : 5 0 P M 24 safety meeting was conducted with regard to the negative  
2 : 5 0 P M 25 pressure test and displacing the riser? Do you see that?

## MILES RANDAL EZELL - CROSS

2 : 5 0 P M 1 A. Yes, sir, I do.

2 : 5 0 P M 2 Q. And that's similar to the process that you've described

2 : 5 0 P M 3 for the court today in terms of what happened at Macondo, that

2 : 5 0 P M 4 when you start an important task like this, you'll stop and

2 : 5 1 P M 5 have a safety meeting and talk about what you're about to do?

2 : 5 1 P M 6 A. Yes, sir, that's correct.

2 : 5 1 P M 7 Q. Now, if you look at the next exhibit, which is

2 : 5 1 P M 8 Exhibit 3326 -- can you read that okay? Probably better now.

2 : 5 1 P M 9 A. Yeah, it's better now, for sure.

2 : 5 1 P M 10 Q. All right. You see that this is from the *Deepwater*

2 : 5 1 P M 11 *Horizon* assistant driller to the *Deepwater Horizon* toolpusher,

2 : 5 1 P M 12 and it's dated January 28th, 2010. Do you see that?

2 : 5 1 P M 13 A. Yes, sir, I do.

2 : 5 1 P M 14 Q. Okay. And it says: "The message is ready to be sent with

2 : 5 1 P M 15 the following file or link attachments"; and then it says

2 : 5 1 P M 16 "negative test while displacing." Do you see that?

2 : 5 1 P M 17 A. Yes, sir.

2 : 5 1 P M 18 Q. And you would have been a toolpusher on the *Deepwater*

2 : 5 1 P M 19 *Horizon* during this period of time?

2 : 5 1 P M 20 A. Yes, sir, the senior toolpusher.

2 : 5 1 P M 21 Q. The senior toolpusher. Yes, sir.

2 : 5 2 P M 22 Then if we go to the next exhibit, which is 3326.2.1,

2 : 5 2 P M 23 do you see that that is the negative test while displacing?

2 : 5 2 P M 24 A. Yes, sir. I see it.

2 : 5 2 P M 25 Q. And that sets out ten steps there coming down the page.

## MILES RANDAL EZELL - CROSS

2 : 5 2 P M 1 Do you see that?

2 : 5 2 P M 2 A. Yes, sir.

2 : 5 2 P M 3 Q. And Step No. 8, if you look at Step No. 8, it says:

2 : 5 2 P M 4 "Monitor for pressure buildup, 15 minutes." Do you see that?

2 : 5 2 P M 5 A. I do.

2 : 5 2 P M 6 Q. Is this a test of pressure for pressure on the drill pipe?

2 : 5 2 P M 7 A. I'm not sure.

2 : 5 2 P M 8 Q. Do you see where it says "displace down drill pipe with

2 : 5 2 P M 9 seawater to the top of stack"?

2 : 5 2 P M 10 A. Yes, I do.

2 : 5 2 P M 11 Q. And then it calls for monitoring pressure buildup for

2 : 5 2 P M 12 15 minutes; correct?

2 : 5 3 P M 13 A. That's what it says.

2 : 5 3 P M 14 Q. Now, if we go now to 76521.2, do you see that this is the

2 : 5 3 P M 15 Daily Drilling Report for January 29th, 2010?

2 : 5 3 P M 16 A. Yes.

2 : 5 3 P M 17 Q. And if we go now to 76522.1, do you see that it describes

2 : 5 3 P M 18 the conduct of the negative test from 1200 hours to 12:30 there

2 : 5 3 P M 19 on the left-hand side?

2 : 5 3 P M 20 A. I do.

2 : 5 3 P M 21 Q. And it describes "performing the negative test, closed the

2 : 5 3 P M 22 upper annular, differential pressure, Halliburton bled off the

2 : 5 3 P M 23 pressure, monitored for 15 minutes, good test"; correct?

2 : 5 3 P M 24 A. I see that, yes.

2 : 5 4 P M 25 Q. You're also familiar with a written negative pressure test

## MILES RANDAL EZELL - CROSS

2 : 5 4 P M 1 that was aboard the *Deepwater Horizon*; correct?

2 : 5 4 P M 2 A. It's according to which one you're talking about.

2 : 5 4 P M 3 Q. There was a written negative pressure test that was

2 : 5 4 P M 4 developed by Jason Anderson and Murry Sepulvado?

2 : 5 4 P M 5 A. I know the one you're referring to.

2 : 5 4 P M 6 Q. And you would describe that as a one-page type document?

2 : 5 4 P M 7 A. Yes, that's correct.

2 : 5 4 P M 8 Q. And to your recollection, it was one form of a negative

2 : 5 4 P M 9 test?

2 : 5 4 P M 10 A. Yes, that's a good statement, I believe.

2 : 5 4 P M 11 Q. And it was formulated or prepared jointly by Jason

2 : 5 4 P M 12 Anderson and Murry Sepulvado?

2 : 5 4 P M 13 A. Yeah. I don't know exactly what role Jason played in

2 : 5 5 P M 14 that, but he definitely was involved.

2 : 5 5 P M 15 Q. Okay. Do you recall having told us that the only one you

2 : 5 5 P M 16 could talk about was one that Murry and Jason had designed out?

2 : 5 5 P M 17 A. I believe I did say that.

2 : 5 5 P M 18 Q. Now, I want to show you an e-mail from toolpusher,

2 : 5 5 P M 19 *Deepwater Horizon* rig, to George Coltrin, dated October 19th,

2 : 5 5 P M 20 2005, please. Do you see this is a note from toolpusher,

2 : 5 5 P M 21 *Deepwater Horizon* rig, to George Coltrin, dated October 15th,

2 : 5 5 P M 22 2005?

2 : 5 5 P M 23 A. Yes.

2 : 5 5 P M 24 Q. This would be a note from the toolpusher on the rig to

2 : 5 5 P M 25 George; correct?

## MILES RANDAL EZELL - CROSS

2 : 5 6 P M 1 A. I mean, it appears that way.

2 : 5 6 P M 2 Q. And does it say, "Here is the procedure for performing the

2 : 5 6 P M 3 negative. We would like to incorporate the negative test into

2 : 5 6 P M 4 the displacement. From an operational standpoint, this

2 : 5 6 P M 5 procedure makes the test much faster and easier to perform

2 : 5 6 P M 6 versus performing it with base oil, where the base oil has to

2 : 5 6 P M 7 be reversed out and then handled on the surface"? Do you see

2 : 5 6 P M 8 that?

2 : 5 6 P M 9 A. I do.

2 : 5 6 P M 10 Q. This is a suggestion from Transocean to BP about the

2 : 5 6 P M 11 conduct of the negative test?

2 : 5 6 P M 12 A. I'm not really sure exactly who with Transocean suggested

2 : 5 6 P M 13 this, if any.

2 : 5 6 P M 14 Q. Have you seen this before?

2 : 5 6 P M 15 A. No, sir, I haven't. I don't recall it.

2 : 5 7 P M 16 Q. That's fine, sir. Thank you.

2 : 5 7 P M 17 On the evening of the 20th -- taking you to a

2 : 5 7 P M 18 different topic, now. I apologize -- you were aware that

2 : 5 7 P M 19 fluids had leaked past the annular in the BOP stack during the

2 : 5 7 P M 20 first negative test; right?

2 : 5 7 P M 21 A. The one that was aborted?

2 : 5 7 P M 22 Q. I'm talking about the first negative test that was being

2 : 5 7 P M 23 conducted at about the time you came into the room and there

2 : 5 7 P M 24 was some discussion going on.

2 : 5 7 P M 25 A. Yes. That was the one that was aborted.

## MILES RANDAL EZELL - CROSS

2 : 5 7 P M 1 Q. Okay. I'm asking about a different question now. Were  
2 : 5 7 P M 2 you aware that fluids had leaked past the annular in the BOP  
2 : 5 7 P M 3 stack during the first negative test?  
2 : 5 7 P M 4 A. Yes.  
2 : 5 7 P M 5 Q. And do you recall that Jimmy Harrell told the crew to  
2 : 5 7 P M 6 exert more pressure on the annular to stop the leakage?  
2 : 5 7 P M 7 A. Yes.  
2 : 5 7 P M 8 Q. And then some additional mud was pumped into the hole to  
2 : 5 8 P M 9 make up for what had leaked?  
2 : 5 8 P M 10 A. I believe that's correct.  
2 : 5 8 P M 11 Q. Now, you told us that if you're performing a negative test  
2 : 5 8 P M 12 and you bleed pressure off, but it builds back up, it would  
2 : 5 8 P M 13 definitely be something that would need to be investigated;  
2 : 5 8 P M 14 correct?  
2 : 5 8 P M 15 A. I'm not sure that was my exact words, but I believe I said  
2 : 5 8 P M 16 something like that.  
2 : 5 8 P M 17 Q. Do you want to look at it? I mean, I'm happy to show you  
2 : 5 8 P M 18 what you've said.  
2 : 5 8 P M 19 Let me ask it again, and then if you want to look at  
2 : 5 8 P M 20 your testimony, we'll do that.  
2 : 5 8 P M 21 A. Okay. Fine.  
2 : 5 8 P M 22 Q. Do you agree that if you were performing a negative test  
2 : 5 8 P M 23 and bled pressure off, but it builds back up, it would  
2 : 5 9 P M 24 definitely be something that would need to be investigated?  
2 : 5 9 P M 25 A. I believe I said that.

## MILES RANDAL EZELL - CROSS

2 : 5 9 P M 1 Q. And you would agree that you would not declare a negative  
2 : 5 9 P M 2 test successful before conducting an investigation into the  
2 : 5 9 P M 3 cause of the pressure buildup?  
2 : 5 9 P M 4 A. It would have been something that we definitely would have  
2 : 5 9 P M 5 had to have an understanding of.  
2 : 5 9 P M 6 Q. And until you had that understanding, from Transocean's  
2 : 5 9 P M 7 perspective, you would not be in a position to declare the  
2 : 5 9 P M 8 negative test a success?  
2 : 5 9 P M 9 A. I suppose that's correct.  
2 : 5 9 P M 10 Q. Now, you've talked to us a little bit earlier today on the  
2 : 5 9 P M 11 topic of EDS -- so I'm changing topics. I'm trying to move  
3 : 0 0 P M 12 through this as quickly as I can.  
3 : 0 0 P M 13 You were on the *Deepwater Horizon* when EDS was  
3 : 0 0 P M 14 activated back in around 2003; correct?  
3 : 0 0 P M 15 A. Can you refresh my memory on what that event happened to  
3 : 0 0 P M 16 be?  
3 : 0 0 P M 17 Q. Yeah. Let me show you your testimony, and then see if  
3 : 0 0 P M 18 this helps you.  
3 : 0 0 P M 19 A. Yeah.  
3 : 0 0 P M 20 Q. Let's look at 582, lines 2 through 14.  
3 : 0 0 P M 21 I think this question was doing the same thing I am,  
3 : 0 0 P M 22 skipping around a bit.  
3 : 0 0 P M 23 A. Yeah.  
3 : 0 0 P M 24 Q. It says:  
3 : 0 0 P M 25 "QUESTION: Now, let me -- I'm going to be skipping



## MILES RANDAL EZELL - CROSS

3:00 PM 1 around now because I'm trying to cover stuff. This EDS,  
3:00 PM 2 or emergency disconnect, in 2003, more or less, okay?  
3:00 PM 3 That was a long time ago, but as best you can, describe  
3:00 PM 4 actually what happened."  
3:00 PM 5 And then you say?  
3:00 PM 6 "ANSWER: I'm going to be a little patchy on it."  
3:00 PM 7 Do you see that?  
3:00 PM 8 A. Right.  
3:00 PM 9 Q. And then you say:  
3:00 PM 10 "ANSWER: But I think I was still a driller at that  
3:01 PM 11 point. I was on my 12 hours off tour. And the EDS was  
3:01 PM 12 initiated just before I got up."  
3:01 PM 13 Does that help you?  
3:01 PM 14 A. I do remember that now.  
3:01 PM 15 Q. Okay. In this particular scenario you've told us that it  
3:01 PM 16 was the OIM that activated the EDS; correct?  
3:01 PM 17 A. I'm not sure if the OIM actually was the person who pushed  
3:01 PM 18 the buttons, but he's the one that told me and my drill crew  
3:01 PM 19 that we had just EDS'd.  
3:01 PM 20 Q. So the information about EDS came to you from the OIM?  
3:01 PM 21 A. Yes.  
3:01 PM 22 Q. And did he convey to you that he had instructed that the  
3:01 PM 23 rig EDS'd because of the circumstances that you were facing at  
3:01 PM 24 that time?  
3:01 PM 25 A. I can't remember. That's been 10 years. I don't remember

## MILES RANDAL EZELL - CROSS

3 : 0 1 P M 1 if he said that or not.

3 : 0 2 P M 2 Q. Okay. That's fair. Thank you.

3 : 0 2 P M 3 In that particular circumstance, the blind shear rams

3 : 0 2 P M 4 functioned as intended and sheared the drill pipe; correct?

3 : 0 2 P M 5 A. To the best of my memory, there was no complications. We

3 : 0 2 P M 6 did EDS.

3 : 0 2 P M 7 Q. Now, just a few new questions on the EDS. On the

3 : 0 2 P M 8 *Deepwater Horizon* at Macondo, as the senior toolpusher, you had

3 : 0 2 P M 9 authority to activate the emergency disconnect system; correct?

3 : 0 2 P M 10 A. I did.

3 : 0 2 P M 11 Q. And you, as you've said, had been trained on how to do

3 : 0 2 P M 12 that?

3 : 0 2 P M 13 A. Yes.

3 : 0 2 P M 14 Q. You didn't have to ask anyone for permission before you

3 : 0 2 P M 15 activated the emergency disconnect system?

3 : 0 2 P M 16 A. I did not.

3 : 0 2 P M 17 Q. Well control supervisors also had authority to activate

3 : 0 2 P M 18 the emergency disconnect?

3 : 0 2 P M 19 A. Yes.

3 : 0 2 P M 20 Q. The Transocean OIM had authority on board the *Deepwater*

3 : 0 3 P M 21 *Horizon* to activate the emergency disconnect?

3 : 0 3 P M 22 A. Yes.

3 : 0 3 P M 23 Q. The assistant driller on board the *Deepwater Horizon* would

3 : 0 3 P M 24 have had authority to activate the emergency disconnect if

3 : 0 3 P M 25 instructed to do so by the driller?

## MILES RANDAL EZELL - CROSS

3 : 0 3 P M 1 A. If instructed to do so, yes.

3 : 0 3 P M 2 Q. You've talked about this today -- moving to the issue of

3 : 0 3 P M 3 diverters now -- that you're aware that Transocean has a

3 : 0 3 P M 4 procedure for diverting gas?

3 : 0 3 P M 5 A. Yes.

3 : 0 3 P M 6 Q. And you agree that Transocean crew members make the

3 : 0 3 P M 7 decision re: diverting overboard versus the mud-gas separator?

3 : 0 3 P M 8 A. It would be the driller or the toolpusher's actual call,

3 : 0 3 P M 9 yes, on tour.

3 : 0 3 P M 10 Q. But it's an actual decision that has to be made, given the

3 : 0 3 P M 11 circumstances that are faced at the time; correct?

3 : 0 4 P M 12 A. Yes. He has to look at all the information that's

3 : 0 4 P M 13 available there.

3 : 0 4 P M 14 Q. He has to consider sights and sounds and data and all the

3 : 0 4 P M 15 input that he has at that point in time and then make a

3 : 0 4 P M 16 conscious decision, do we divert to mud-gas separator, or do we

3 : 0 4 P M 17 divert overboard?

3 : 0 4 P M 18 A. Correct.

3 : 0 4 P M 19 Q. You've mentioned today that Transocean had access to

3 : 0 4 P M 20 information about the drilling program in the form of well

3 : 0 4 P M 21 prognosis. Do you remember that?

3 : 0 4 P M 22 A. Yes.

3 : 0 4 P M 23 Q. Is it correct that within that well prognosis Transocean

3 : 0 4 P M 24 receives information about pore pressure profile, fracture

3 : 0 4 P M 25 profile, and temperature profile?

## MILES RANDAL EZELL - CROSS

3 : 0 4 P M 1 A. I haven't seen one in years, but I believe that would  
3 : 0 5 P M 2 possibly have been in there.

3 : 0 5 P M 3 Q. Okay. Do you remember us asking you some questions about  
3 : 0 5 P M 4 this at your deposition? We were looking at a section under  
3 : 0 5 P M 5 geology, Sections 2-H, I and J, and you confirmed that that  
3 : 0 5 P M 6 would include information about pore pressure profile,  
3 : 0 5 P M 7 formation fracture profile, and temperature profile?

3 : 0 5 P M 8 A. I can't recall, but that's a possibility, for sure.

3 : 0 5 P M 9 Q. Does that sound right to you?

3 : 0 5 P M 10 A. Yeah.

3 : 0 5 P M 11 Q. You would also receive from BP a drilling program;  
3 : 0 5 P M 12 correct?

3 : 0 5 P M 13 A. In my mind those are the same thing, what you --

3 : 0 5 P M 14 Q. We're talking about the same document there?

3 : 0 5 P M 15 A. Yeah.

3 : 0 5 P M 16 Q. Okay. We can cover that with someone else. Let's just  
3 : 0 6 P M 17 keep going.

3 : 0 6 P M 18 All right. I'm going to go back now to the document  
3 : 0 6 P M 19 we talked about earlier which relates to the on-the-job  
3 : 0 6 P M 20 training that was discussed with you by your counsel. Are you  
3 : 0 6 P M 21 with me on the topic?

3 : 0 6 P M 22 A. Yes.

3 : 0 6 P M 23 Q. All right. So if we go to TREN-22347, this is page 12.  
3 : 0 6 P M 24 22347, if I didn't say that.

3 : 0 6 P M 25 All right. Do you see this is the on-the-job

## MILES RANDAL EZELL - CROSS

3 : 0 6 P M 1 training module that was discussed with you earlier?

3 : 0 6 P M 2 A. Yes, sir, I do.

3 : 0 6 P M 3 Q. If we go to page 12 of that document. Do you see that

3 : 0 6 P M 4 part of the training is on pressure integrity tests?

3 : 0 7 P M 5 A. Yeah. And like I -- I don't know if I made this point or

3 : 0 7 P M 6 not, but this would not give us the ability to conduct this.

3 : 0 7 P M 7 This would just give us a global view to -- to try to

3 : 0 7 P M 8 understand.

3 : 0 7 P M 9 Q. Okay. That's fair. The point I'm making here is that --

3 : 0 7 P M 10 and we've looked at this earlier too -- but this on-the-job

3 : 0 7 P M 11 training manual that we've talked about does have as one of the

3 : 0 7 P M 12 well control topics the requirement of explaining how, when,

3 : 0 7 P M 13 and why a leak-off test or formation integrity test is

3 : 0 7 P M 14 performed; correct?

3 : 0 7 P M 15 A. Yes, it is there.

3 : 0 7 P M 16 Q. Now, let me just see what you know about pressure

3 : 0 7 P M 17 integrity tests. Is it your understanding that part of a

3 : 0 8 P M 18 pressure integrity test is to drill out 10 to 50 feet of new

3 : 0 8 P M 19 formation below the last shoot?

3 : 0 8 P M 20 A. Typically, 10 feet.

3 : 0 8 P M 21 Q. Let me ask you about one of the tests that was conducted.

3 : 0 8 P M 22 We're going to look at the leak-off test that was at the

3 : 0 8 P M 23 13 5/8-inch shoe on March 22.

3 : 0 8 P M 24 MR. BROCK: If we can look at Exhibit 47780, please.

3 : 0 8 P M 25 That's not -- 47780. Oh, this is -- I'm sorry.

## MILES RANDAL EZELL - CROSS

3:08 PM 1 Go to 41053. I apologize.

3:09 PM 2 **BY MR. BROCK:**

3:09 PM 3 **Q.** While that's coming up, Mr. Ezell, in terms of the

3:09 PM 4 practice of drilling, how does the driller know how much new

3:09 PM 5 hole he or she has drilled when drilling a new hole?

3:09 PM 6 **A.** Well, I mean, we had depth tracking on the HITEC. And

3:09 PM 7 also, Sperry, some data would show depth tracking as well. And

3:09 PM 8 we could actually use our numbers in our book, too, for that

3:09 PM 9 measurement.

3:09 PM 10 **Q.** So you had tools that would allow you to measure how much

3:09 PM 11 new hole had been drilled?

3:09 PM 12 **A.** We did.

3:09 PM 13 **Q.** And if we look at our call-out here, 2.2, do you see that

3:09 PM 14 this is the --

3:09 PM 15 **MR. BROCK:** I'm sorry, go back -- go to the date.

3:09 PM 16 **BY MR. BROCK:**

3:09 PM 17 **Q.** This is the March 22, 2010 drilling report. Do you see

3:10 PM 18 that?

3:10 PM 19 **A.** Yes.

3:10 PM 20 **Q.** Now, if we go to 2.2. And I just want to ask you to focus

3:10 PM 21 on the entry that is from 10:00 to 10:30. Do you see that?

3:10 PM 22 **A.** Yes, sir, I do.

3:10 PM 23 **Q.** Okay. And do you see it says "drilled 10 feet of new

3:10 PM 24 formation from 13150 to 13160"? Do you see that?

3:10 PM 25 **A.** Yes, sir.

## MILES RANDAL EZELL - CROSS

3 : 10 PM 1 Q. Do you have any reason to believe that the Transocean  
3 : 10 PM 2 drillers didn't drill out 10 feet of new formation there?  
3 : 10 PM 3 A. No, not to me.  
3 : 10 PM 4 Q. And then in the context of a pressure integrity test, it's  
3 : 10 PM 5 after you drill the new formation that the test is conducted;  
3 : 10 PM 6 correct?  
3 : 10 PM 7 A. That's correct. You have to have the new formation  
3 : 10 PM 8 exposed.  
3 : 11 PM 9 Q. Now, if we look at Call-out 2.3, do you see that the test  
3 : 11 PM 10 is pumped on the Halliburton cement pumps there?  
3 : 11 PM 11 A. Yes, sir.  
3 : 11 PM 12 Q. And actually, if you look down at the period of time 12:30  
3 : 11 PM 13 to 1:00, you see that they show they performed the leak-off  
3 : 11 PM 14 test?  
3 : 11 PM 15 A. I see that.  
3 : 11 PM 16 Q. Okay. And it goes on to give the maximum pressures, the  
3 : 11 PM 17 equivalent mud weight and the bleedback -- how much they bled  
3 : 11 PM 18 back. Do you see that?  
3 : 11 PM 19 A. I do.  
3 : 11 PM 20 Q. Are these tests conducted on the Halliburton pumps because  
3 : 11 PM 21 it's easier to pump flow rates and monitor and record the data  
3 : 11 PM 22 during the test if you use the Halliburton pumps?  
3 : 11 PM 23 A. Yes, and also you can make a chart.  
3 : 12 PM 24 Q. And Transocean would be aware of the results of the  
3 : 12 PM 25 pressure integrity tests; correct?

## MILES RANDAL EZELL - CROSS

3 : 12 PM 1 A. Yeah, we were always notified by BP what the results were.

3 : 12 PM 2 Q. And you would report that data in the IADC?

3 : 12 PM 3 A. Correct.

3 : 12 PM 4 Q. When you went back and looked at a lot of the records in

3 : 12 PM 5 connection with your work with Transocean counsel, did you look

3 : 12 PM 6 at the history of the well from the time drilling was complete

3 : 12 PM 7 on April the 9th up until the event on the evening of April the

3 : 12 PM 8 20th?

3 : 12 PM 9 A. What are you referring to? What sources of data here?

3 : 12 PM 10 Q. I'm primarily referring to the daily drilling reports.

3 : 13 PM 11 A. Okay. Now that I know that, would you ask the question

3 : 13 PM 12 once again?

3 : 13 PM 13 Q. Sure. Did you go back to see what the history of the well

3 : 13 PM 14 was from the period of time that the driller completed his work

3 : 13 PM 15 on April the 9th up until the event on April the 20th?

3 : 13 PM 16 A. I don't recall doing that.

3 : 13 PM 17 Q. You mentioned that on a daily basis you would conduct a

3 : 13 PM 18 meeting early in the morning with the leadership of your crew;

3 : 14 PM 19 correct?

3 : 14 PM 20 A. Leadership of?

3 : 14 PM 21 Q. The Transocean -- the Transocean crew.

3 : 14 PM 22 A. Yes.

3 : 14 PM 23 Q. And then that would be followed by a meeting with BP?

3 : 14 PM 24 A. Correct.

3 : 14 PM 25 Q. And you then described some other meetings that would take



## MILES RANDAL EZELL - CROSS

3 : 14 PM 1 place during the day, but I want to focus on those, too.

3 : 14 PM 2 A. Okay.

3 : 14 PM 3 Q. You would have available to you from BP the forward plan  
3 : 14 PM 4 in terms of what they would be thinking about in terms of  
3 : 14 PM 5 operations over the next period of time; correct?

3 : 14 PM 6 A. As a rule, with some exceptions, BP did provide a forward  
3 : 14 PM 7 plan.

3 : 14 PM 8 Q. And then you would have a meeting with BP to discuss  
3 : 14 PM 9 upcoming operations?

3 : 14 PM 10 A. If so required, yes, we would.

3 : 14 PM 11 Q. And in those meetings, there would be the opportunity for  
3 : 14 PM 12 interaction. That is, if you had questions or if they had  
3 : 15 PM 13 questions, that would be one of the times during the day that  
3 : 15 PM 14 you would have the opportunity to discuss issues in terms of  
3 : 15 PM 15 upcoming operations?

3 : 15 PM 16 A. Yes.

3 : 15 PM 17 MR. BROCK: Your Honor, if I could just have one  
3 : 15 PM 18 second, please.

3 : 15 PM 19 THE COURT: Yes.

3 : 15 PM 20 MR. BROCK: Thank you.

3 : 15 PM 21 Thank you for your patience and for being here.  
3 : 15 PM 22 That's all my questions, Your Honor.

3 : 15 PM 23 THE COURT: Okay. Cameron?

3 : 16 PM 24 MR. BECK: May it please the Court.  
25

## MILES RANDAL EZELL - CROSS

## CROSS-EXAMINATION

BY MR. BECK:

Q. Mr. Ezell, I would like to ask you some very general questions about some Transocean manuals, and I'm going to do that very quickly. And then I've got a handful of questions on about four or five subjects; and then, mercifully, I'll finish. Okay?

A. Okay.

Q. Let's start with the manuals. You've already told Judge Barbier about Transocean's well control handbook or manual, have you not?

A. Yes, sir.

Q. Now, in addition to the well control handbook, Transocean also has a field operations handbook or manual, does it not?

A. They do.

Q. And in addition to that, you have an emergency response manual for the *Deepwater Horizon* itself; is that correct?

A. Yes, sir, that's correct.

Q. All right. These are three manuals or publications that you're very familiar with, I take it?

A. Yes, but there's so many manuals that it could fill up that entire desk there.

Q. I understand.

But at least you're generally familiar with them?

A. I know how to find them and I know how to get information

## MILES RANDAL EZELL - CROSS

3 : 17 PM 1 from them, yes.

3 : 17 PM 2 Q. Okay. Would you agree that those manuals contain

3 : 17 PM 3 important well control principles and procedures?

3 : 17 PM 4 A. Yes.

3 : 17 PM 5 Q. And do you try to follow those?

3 : 17 PM 6 A. We do.

3 : 17 PM 7 Q. And not just you, but the other members of your crew, they

3 : 17 PM 8 try to follow those religiously; do they not?

3 : 17 PM 9 A. Yes, sir.

3 : 17 PM 10 Q. And I take it you think you all do a good job of doing

3 : 17 PM 11 that. Is that right?

3 : 17 PM 12 A. I felt like we did, yes, sir.

3 : 17 PM 13 Q. Now, let me ask you whether or not your take-away from

3 : 17 PM 14 those manuals is that for -- that the keys to effective well

3 : 18 PM 15 control are, first, early kick detection and, secondly, rapid

3 : 18 PM 16 response? Aren't those the keys to effective well control?

3 : 18 PM 17 A. I'll -- I could agree, yeah.

3 : 18 PM 18 Q. Okay. And when you talk about rapid response, if you have

3 : 18 PM 19 a kick, what you're essentially talking about in terms of a

3 : 18 PM 20 rapid response is shutting in the well with the BOP; correct?

3 : 18 PM 21 A. Yes.

3 : 18 PM 22 Q. All right. Now, I want to ask you -- could we bring up on

3 : 18 PM 23 the screen -- and I want to use this to refresh your

3 : 18 PM 24 recollection.

3 : 18 PM 25 **MR. BECK:** From the well control handbook itself,

## MILES RANDAL EZELL - CROSS

3 : 18 PM 1 that would be 596.7, Paul.

3 : 18 PM 2 **BY MR. BECK:**

3 : 18 PM 3 **Q.** Now, this part of the well control manual deals

3 : 18 PM 4 specifically with deep water. Do you see that, sir?

3 : 18 PM 5 **A.** Just a moment, let me . . . yes, I see it.

3 : 19 PM 6 **Q.** Okay. And right above the mark -- the area marked in

3 : 19 PM 7 yellow, it says: "As a result, wells drilled in deep water

3 : 19 PM 8 tend to have much lower kick tolerances than wells in shallower

3 : 19 PM 9 water. This fact, in addition to the problems that can occur

3 : 19 PM 10 if gas enters the riser, makes it very important to prevent

3 : 19 PM 11 kicks and, should one occur, detect and control it at an early

3 : 19 PM 12 stage."

3 : 19 PM 13 Do you see that, sir?

3 : 19 PM 14 **A.** I do.

3 : 19 PM 15 **Q.** I take it that is something that you would agree with?

3 : 19 PM 16 **A.** Yes, I can agree.

3 : 19 PM 17 **Q.** Now, just to kind of short-circuit this, one of the

3 : 19 PM 18 reasons you want to try to control the kick is because, if the

3 : 19 PM 19 situation becomes severe, it can actually cause the ram packers

3 : 19 PM 20 in the BOP to fail, can it not?

3 : 19 PM 21 **A.** There is potential for that to happen.

3 : 20 PM 22 **Q.** Okay. And as a matter of fact, that's stated in the well

3 : 20 PM 23 control manual, is it not?

3 : 20 PM 24 And let's bring up 596.8 to refresh your

3 : 20 PM 25 recollection, Mr. Ezell.

## MILES RANDAL EZELL - CROSS

3 : 2 0 P M 1 Do you see where it says, "Damage to BOP sealing  
3 : 2 0 P M 2 elements. Under severe well control conditions, failure of ram  
3 : 2 0 P M 3 packers can, in fact, occur"?

3 : 2 0 P M 4 Do you see that?

3 : 2 0 P M 5 A. Yes, yes.

3 : 2 0 P M 6 Q. That's a bad thing, isn't it?

3 : 2 0 P M 7 A. It's not a good thing.

3 : 2 0 P M 8 Q. Okay. Now, I want to shift subjects with you.

3 : 2 0 P M 9 Mr. Sterbcow asked you about the six to eight to ten  
3 : 2 0 P M 10 kicks that, I believe, you personally have been involved in  
3 : 2 0 P M 11 while you were on the *Deepwater Horizon*. Do you recall that?

3 : 2 0 P M 12 A. That I have knowledge of.

3 : 2 0 P M 13 Q. Yes, sir, that you have knowledge of.

3 : 2 0 P M 14 Is it not true that in every one of those situations  
3 : 2 0 P M 15 the Transocean drill crew responded quickly and they shut in  
3 : 2 0 P M 16 the well by using the BOP?

3 : 2 0 P M 17 A. Yeah, of course, they were all shut in, as you say.

3 : 2 1 P M 18 Q. Okay. And once the BOP closed the well, if you will, that  
3 : 2 1 P M 19 allowed you all to circulate out the kick?

3 : 2 1 P M 20 A. Sure.

3 : 2 1 P M 21 Q. Okay. And in each of those instances, the six to eight or  
3 : 2 1 P M 22 ten, however many there were that you were aware of, when the  
3 : 2 1 P M 23 kick was detected and your crew responded quickly, the blowout  
3 : 2 1 P M 24 preventer on the *Deepwater Horizon* worked properly and  
3 : 2 1 P M 25 satisfactorily on each and every occasion; is that not correct?

## MILES RANDAL EZELL - CROSS

3 : 2 1 P M 1 A. Yes, sir. We had no problem with the BOP.

3 : 2 1 P M 2 Q. Okay. Let me shift gears again, another subject.

3 : 2 1 P M 3 In addition to controlling kicks, before April 20th,

3 : 2 1 P M 4 2010, the *Deepwater Horizon* blowout preventer was also used to

3 : 2 1 P M 5 cut pipe in the field, was it not?

3 : 2 1 P M 6 A. Can you -- can you tell me what occasion you're talking

3 : 2 1 P M 7 about?

3 : 2 1 P M 8 Q. Yes, sir. For example, do you recall the *Deepwater*

3 : 2 2 P M 9 *Horizon* experiencing a rig drift-off situation on June -- in

3 : 2 2 P M 10 June of 2003, where you had to initiate the EDS?

3 : 2 2 P M 11 A. Yes.

3 : 2 2 P M 12 Q. Okay. Let's bring up TREN-1527 and let me just try to

3 : 2 2 P M 13 refresh your recollection a little bit, because I realize it's

3 : 2 2 P M 14 been a long time.

3 : 2 2 P M 15 MR. BECK: 1527, Paul, make it --

3 : 2 2 P M 16 BY MR. BECK:

3 : 2 2 P M 17 Q. Do you see the incident report there, Mr. Ezell?

3 : 2 2 P M 18 A. I do.

3 : 2 2 P M 19 Q. June 30th, 2003.

3 : 2 2 P M 20 MR. BECK: If we could bring up, Paul, 1527.1.

3 : 2 2 P M 21 BY MR. BECK:

3 : 2 2 P M 22 Q. Do you see where it says, "At this point, the driller

3 : 2 2 P M 23 activated the emergency disconnect sequence. The drill pipe

3 : 2 2 P M 24 had been previously hung off on the pipe rams prior to the

3 : 2 2 P M 25 drift-off."

## MILES RANDAL EZELL - CROSS

3 : 2 2 P M 1 And what happened here is the rig just kind of  
3 : 2 2 P M 2 started drifting off; is that correct?  
3 : 2 2 P M 3 A. That's what it says.  
3 : 2 2 P M 4 Q. Okay.  
3 : 2 2 P M 5 "The shear rams cut the drill pipe, and the LMRP  
3 : 2 3 P M 6 disconnected from the BOP."  
3 : 2 3 P M 7 Now, it goes on to say: "This sequence went entirely  
3 : 2 3 P M 8 as planned, and there was no damage to the rig or drilling  
3 : 2 3 P M 9 equipment, with the exception of the sheared joint of pipe."  
3 : 2 3 P M 10 Which you would expect, right, that the sheared joint  
3 : 2 3 P M 11 of pipe would be damaged?  
3 : 2 3 P M 12 A. That's correct.  
3 : 2 3 P M 13 Q. Okay. Now, you've already told us that the driller has  
3 : 2 3 P M 14 the authority to initiate the EDS. So I'm not going to -- so I  
3 : 2 3 P M 15 just want to ask you whether or not there's actually a button  
3 : 2 3 P M 16 on the BOP control panel in the driller's shack.  
3 : 2 3 P M 17 A. There is.  
3 : 2 3 P M 18 Q. And there's also a button on the BOP control panel on the  
3 : 2 3 P M 19 bridge?  
3 : 2 3 P M 20 A. Yes, there is.  
3 : 2 3 P M 21 Q. Okay. Now, in this June 2003 incident, is it your  
3 : 2 3 P M 22 understanding that the drill pipe was held by the variable bore  
3 : 2 3 P M 23 rams and held in tension?  
3 : 2 4 P M 24 A. Yes, it was -- the drill pipe was held by the variable  
3 : 2 4 P M 25 bore rams. I don't know if I can agree with "held in tension."

## MILES RANDAL EZELL - CROSS

3 : 2 4 P M 1 Q. But do you recall whether or not that's the recommended  
3 : 2 4 P M 2 procedure, to hold the drill pipe in tension?  
3 : 2 4 P M 3 A. The drill pipe above the rams.  
3 : 2 4 P M 4 Q. Yes, sir.  
3 : 2 4 P M 5 A. Yes, sir.  
3 : 2 4 P M 6 Q. To be clear, let's bring up 596.9.  
3 : 2 4 P M 7 MR. BECK: This is from the well control handbook,  
3 : 2 4 P M 8 Your Honor.  
3 : 2 4 P M 9 BY MR. BECK:  
3 : 2 4 P M 10 Q. Do you see where it says "shearing the drill string"?  
3 : 2 4 P M 11 A. Yes.  
3 : 2 4 P M 12 Q. And it says: "Optimum shearing characteristics are  
3 : 2 4 P M 13 obtained when the pipe is stationary and under tension. It is  
3 : 2 4 P M 14 recommended that the string weight be partially hung off prior  
3 : 2 4 P M 15 to shearing."  
3 : 2 4 P M 16 And then it goes on to say: "Ensure that the pipe  
3 : 2 4 P M 17 above the hang-off rams remains in tension."  
3 : 2 4 P M 18 Now, that's the recommended procedure, is did not?  
3 : 2 4 P M 19 A. Yes.  
3 : 2 4 P M 20 Q. And would you have any reason to believe that that was not  
3 : 2 4 P M 21 the procedure followed in June of 2003, the incident we just  
3 : 2 5 P M 22 looked over?  
3 : 2 5 P M 23 A. I believe that was the procedure that was used.  
3 : 2 5 P M 24 Q. Okay. And this recommended practice is the practice that  
3 : 2 5 P M 25 gives you the best chance, the best opportunity of a good shear



## RANDY EZELL - REDIRECT

3 : 2 5 P M 1 and a seal, does it not?

3 : 2 5 P M 2 A. Yes.

3 : 2 5 P M 3 THE COURT: Mr. Ezell, if you could get a little bit  
3 : 2 5 P M 4 closer to that microphone, please. You moved away, and we may  
3 : 2 5 P M 5 have trouble picking you up.

3 : 2 5 P M 6 THE WITNESS: Yes, sir, I'm sorry.

3 : 2 5 P M 7 BY MR. BROCK:

3 : 2 5 P M 8 Q. And that's what was done in June of 2003, and everything  
3 : 2 5 P M 9 went well and as planned; is that not correct?

3 : 2 5 P M 10 A. Yeah. I don't remember any major problem we had from that  
3 : 2 5 P M 11 EDS.

3 : 2 5 P M 12 MR. BECK: Okay. Thank you very much, sir.

3 : 2 5 P M 13 That's all I had, Your Honor.

3 : 2 5 P M 14 THE COURT: M-I.

3 : 2 5 P M 15 MR. TANNER: M-I has no questions of this witness.

3 : 2 5 P M 16 THE COURT: Any redirect?

3 : 2 5 P M 17 REDIRECT EXAMINATION

3 : 2 6 P M 18 BY MR. STERBCOW:

3 : 2 6 P M 19 Q. Mr. Ezell, Paul Sterbcow again. I want to cover a couple  
3 : 2 6 P M 20 of things that were gone over with you in your direct  
3 : 2 6 P M 21 examination.

3 : 2 6 P M 22 A. Okay.

3 : 2 6 P M 23 Q. The first topic is maintenance, rig maintenance.

3 : 2 6 P M 24 A. Okay.

3 : 2 6 P M 25 Q. You had testified that, aboard the *DWH*, *Deepwater Horizon*,

## RANDY EZELL - REDIRECT

3 : 2 6 P M 1 maintenance supervisor Steve Bertone was somebody you knew.  
3 : 2 6 P M 2 You'd known him for a while?  
3 : 2 6 P M 3 A. I did know him.  
3 : 2 6 P M 4 Q. And at the April 20th, 2010, safety meeting, you said he  
3 : 2 6 P M 5 attended; correct?  
3 : 2 6 P M 6 A. Yes, he was there.  
3 : 2 6 P M 7 Q. And there were no maintenance issues raised?  
3 : 2 6 P M 8 A. There were no issues raised, no.  
3 : 2 6 P M 9 Q. And I think you went on to say that, as far as you knew or  
3 : 2 6 P M 10 were concerned, there were no serious maintenance issues aboard  
3 : 2 6 P M 11 the vessel at that time and the time leading up to April 20th?  
3 : 2 7 P M 12 A. None that I was personally aware of.  
3 : 2 7 P M 13 Q. All right. Do you recall --  
3 : 2 7 P M 14 MR. STERBCOW: Pull up, if you would, TREN-05618.  
3 : 2 7 P M 15 BY MR. STERBCOW:  
3 : 2 7 P M 16 Q. Do you recall Mr. Bertone sending out an e-mail in late  
3 : 2 7 P M 17 October 2009 to Paul Johnson, James Kent, Robert Tiano, the  
3 : 2 7 P M 18 captain of the *Horizon*, the OIM aboard the *Horizon*, and the  
3 : 2 7 P M 19 toolpushers aboard the *Horizon*. Do you have any recollection  
3 : 2 7 P M 20 of that?  
3 : 2 7 P M 21 A. Let me -- give me just a second.  
3 : 2 7 P M 22 Q. Take your time.  
3 : 2 7 P M 23 A. Yes, I do remember some about this.  
3 : 2 7 P M 24 Q. All right. Well, it's a two-page detailed e-mail that I  
3 : 2 7 P M 25 won't go through with you chapter and verse, but it starts by

## RANDY EZELL - REDIRECT

3 : 2 7 P M 1 saying: "The issues that the *Deepwater Horizon* is currently  
3 : 2 7 P M 2 experiencing, in my opinion, is a lack of proper maintenance on  
3 : 2 7 P M 3 the equipment for many years. The drive behind this has been  
3 : 2 7 P M 4 from a performance-induced standpoint. Historically, the rig  
3 : 2 8 P M 5 has been a top performer" -- which you've testified to -- "and  
3 : 2 8 P M 6 has traded performance and staying in operation rather than  
3 : 2 8 P M 7 maintaining the equipment."

3 : 2 8 P M 8 Do you recall Mr. Bertone, as the maintenance  
3 : 2 8 P M 9 supervisor aboard the vessel in late '09, about six months  
3 : 2 8 P M 10 before the blowout, complaining to you and other leadership  
3 : 2 8 P M 11 that the rig was experiencing a serious lack of proper  
3 : 2 8 P M 12 maintenance on its equipment for many years?

3 : 2 8 P M 13 A. What I do remember about this is the rig manager, Paul  
3 : 2 8 P M 14 Johnson, had just sent an e-mail that was talking about how to  
3 : 2 8 P M 15 service our downtime events. I do remember Steve talking to me  
3 : 2 8 P M 16 about this. Steve was pretty well -- I don't want to use the  
3 : 2 8 P M 17 words "stressed out," but he was under pressure at that point.  
3 : 2 8 P M 18 And actually, it kind of teed him off because he thought he was  
3 : 2 9 P M 19 doing everything within his power to eliminate the potential  
3 : 2 9 P M 20 downtime.

3 : 2 9 P M 21 So to defend his honor, so to speak, he fired back  
3 : 2 9 P M 22 with this. And then after this was sent around to everybody, I  
3 : 2 9 P M 23 think Paul sent him something back that offered some type of  
3 : 2 9 P M 24 support, but I don't remember that e-mail. But . . .

3 : 2 9 P M 25 Q. Well, let's look. It may be above -- I think there's a

## RANDY EZELL - REDIRECT

3 : 2 9 P M 1 response. In fact, I know there is. If we go to the e-mail  
3 : 2 9 P M 2 just above this one. It's from Paul Johnson back the next day.  
3 : 2 9 P M 3 A. Yeah.  
3 : 2 9 P M 4 Q. And as you said, "As discussed, nobody is pointing any  
3 : 2 9 P M 5 fingers at you" -- which is consistent with what you remember,  
3 : 2 9 P M 6 Bertone being upset.  
3 : 2 9 P M 7 A. Yeah.  
3 : 2 9 P M 8 Q. And he said: "I fully understand why the rig is in its  
3 : 2 9 P M 9 current condition."  
3 : 2 9 P M 10 From October 30th, 2009, forward to the day of the  
3 : 3 0 P M 11 accident, there was no special effort made by Mr. Johnson or  
3 : 3 0 P M 12 anyone off the rig to address either Mr. Bertone's concerns or  
3 : 3 0 P M 13 anybody else's concerns aboard the rig about a chronic problem  
3 : 3 0 P M 14 with maintenance issues on the *Deepwater Horizon*, were there?  
3 : 3 0 P M 15 A. I don't know. I couldn't tell you.  
3 : 3 0 P M 16 Q. Nothing that you're aware of?  
3 : 3 0 P M 17 A. I wasn't aware of it.  
3 : 3 0 P M 18 Q. And do you recall the fact that in the entire time that  
3 : 3 0 P M 19 you were assigned to the *Deepwater Horizon*, she had never gone  
3 : 3 0 P M 20 to the shipyard or been drydocked for repairs?  
3 : 3 0 P M 21 A. It hasn't ever gone to the shipyard, that's true.  
3 : 3 0 P M 22 Q. All right.  
3 : 3 0 P M 23 A. But it had a lot of upgrades and it had a lot of equipment  
3 : 3 0 P M 24 changeouts that occurred.  
3 : 3 0 P M 25 Q. But it had never been formally taken out of service for a

## RANDY EZELL - REDIRECT

3 : 3 0 P M 1 comprehensive overall inspection and repair; correct?

3 : 3 0 P M 2 A. We had the UWILD inspections, but -- the only way I could

3 : 3 0 P M 3 answer that is, to my knowledge, it had never been to a

3 : 3 1 P M 4 shipyard.

3 : 3 1 P M 5 Q. And do you recall that during the time that you were

3 : 3 1 P M 6 aboard the *Deepwater Horizon*, the BOP had never been

3 : 3 1 P M 7 recertified, as was recommended by Cameron, its manufacturer?

3 : 3 1 P M 8 A. Now, that, I'm not aware of. That would be our subsea

3 : 3 1 P M 9 department.

3 : 3 1 P M 10 Q. Okay. In other words, that wouldn't be something that you

3 : 3 1 P M 11 would be aware of one way or the other?

3 : 3 1 P M 12 A. I would not be tracking that, no, sir.

3 : 3 1 P M 13 Q. You had mentioned that -- the blue screen problem, the

3 : 3 1 P M 14 "blue screen of death" problem on the drillers, when they would

3 : 3 1 P M 15 go out every now and then. Do you remember mentioning that?

3 : 3 1 P M 16 And you would switch from Chair A to Chair B when that

3 : 3 1 P M 17 happened?

3 : 3 1 P M 18 A. Now, I've never heard it on the rig called the blue screen

3 : 3 1 P M 19 of death.

3 : 3 1 P M 20 Q. You've never heard that term?

3 : 3 1 P M 21 A. I haven't.

3 : 3 1 P M 22 Q. Do you recall there being a problem with the screen going

3 : 3 1 P M 23 down and then having to switch chairs?

3 : 3 1 P M 24 A. I do. I do remember that.

3 : 3 1 P M 25 Q. Do you recall that being a long-standing problem that,

## RANDY EZELL - REDIRECT

3 : 3 1 P M 1 because the rig was working continuously, could never be  
3 : 3 1 P M 2 significantly -- or even addressed in any form or fashion up  
3 : 3 1 P M 3 through April 20th, 2010?

3 : 3 2 P M 4 A. I don't know exactly how it was being handled, but I do  
3 : 3 2 P M 5 know that it was not a problem to where we lost any type of  
3 : 3 2 P M 6 monitoring of the well. We were always able to swap chairs and  
3 : 3 2 P M 7 then reboot.

3 : 3 2 P M 8 Q. When it did happen, though, the driller, whoever the lead  
3 : 3 2 P M 9 driller would have been at the time, would have to leave his  
3 : 3 2 P M 10 chair, go to the next chair and give his lead chair time to, as  
3 : 3 2 P M 11 you say -- I guess you'd reboot the system as you'd reboot it  
3 : 3 2 P M 12 in the courtroom?

3 : 3 2 P M 13 A. Yes, sir. It took just a few minutes. But yeah, it did  
3 : 3 2 P M 14 happen. It wasn't that often, but it did happen.

3 : 3 2 P M 15 Q. Do you recall there being ongoing issues with the  
3 : 3 2 P M 16 annulars, the BOP annulars?

3 : 3 2 P M 17 A. No, sir, I wouldn't have a lot of knowledge about that  
3 : 3 2 P M 18 particular issue.

3 : 3 2 P M 19 Q. All right. So if there's evidence in the case regarding  
3 : 3 2 P M 20 damage to the rubber surrounding the annulars or problems on  
3 : 3 2 P M 21 deferred maintenance on the annulars, waiting from the time  
3 : 3 3 P M 22 that you left Macondo to go to another well, those wouldn't be  
3 : 3 3 P M 23 issues that you have personal knowledge of?

3 : 3 3 P M 24 MS. CLINGMAN: Your Honor, I'll object to lack of  
3 : 3 3 P M 25 foundation. He's already said he didn't do anything subsea.

## RANDY EZELL - REDIRECT

3 : 3 3 PM 1 THE COURT: Sustain the objection.

3 : 3 3 PM 2 BY MR. STERBCOW:

3 : 3 3 PM 3 Q. You did say you were aware of a problem the night of the  
3 : 3 3 PM 4 negative test where the annular didn't close all the way and  
3 : 3 3 PM 5 fluid leaked; correct? Do you remember that?

3 : 3 3 PM 6 A. I don't remember saying that it didn't close all the way,  
3 : 3 3 PM 7 but it did require additional pressure to seal.

3 : 3 3 PM 8 Q. To seal.

3 : 3 3 PM 9 And in the meantime, do you recall there being an  
3 : 3 3 PM 10 issue with spacer leaking into the BOP?

3 : 3 3 PM 11 A. Yes.

3 : 3 3 PM 12 Q. Was there ever any discussion that night, that you're  
3 : 3 3 PM 13 aware of, of the possible effects that that spacer may have had  
3 : 3 3 PM 14 on the drill crew's ability to properly interpret the negative  
3 : 3 3 PM 15 test?

3 : 3 4 PM 16 A. In my mind, that test was aborted. They were going to  
3 : 3 4 PM 17 stop the job and take whatever measures it took to line it up  
3 : 3 4 PM 18 properly, get everything in a correct state, and do that  
3 : 3 4 PM 19 negative test as per the BP new instructions.

3 : 3 4 PM 20 Q. And if there was an issue that was created by the spacer  
3 : 3 4 PM 21 leaking that may have affected the zero psi on the kill line,  
3 : 3 4 PM 22 that's not something you have any knowledge of?

3 : 3 4 PM 23 A. I was not aware of that.

3 : 3 4 PM 24 Q. No discussion in front of you, or nobody talked to you  
3 : 3 4 PM 25 about that?

## RANDY EZELL - REDIRECT

3 : 3 4 P M 1 A. No, sir.

3 : 3 4 P M 2 Q. All right. Let's talk about the diverter for a second,  
3 : 3 4 P M 3 because that was brought up.

3 : 3 4 P M 4 I think you mentioned you had regular drills aboard  
3 : 3 4 P M 5 the *Deepwater Horizon* involving operating the diverter and  
3 : 3 4 P M 6 being familiar with the system, how it worked?

3 : 3 4 P M 7 A. That's correct.

3 : 3 4 P M 8 Q. All right. Were there any specific emergency diverter  
3 : 3 4 P M 9 drills?

3 : 3 5 P M 10 A. There was discussion about emergency diverter drills, but  
3 : 3 5 P M 11 other than the weekly hands-on operation and checking the  
3 : 3 5 P M 12 valves out, that's what I remember.

3 : 3 5 P M 13 Q. Okay. Nothing that went beyond the discussion of -- to  
3 : 3 5 P M 14 say, "Assume now we're in an emergency situation. Diverter has  
3 : 3 5 P M 15 to be activated. We have gas in the riser," and actually  
3 : 3 5 P M 16 physically take steps to get that done.

3 : 3 5 P M 17 Those types of drills weren't done, were they?

3 : 3 5 P M 18 A. No. But, I mean, the guys knew how to close the diverter  
3 : 3 5 P M 19 and divert. They were aware of how to do that.

3 : 3 5 P M 20 Q. They knew how to close the diverter and divert.

3 : 3 5 P M 21 But you didn't put the guys in a situation where,  
3 : 3 5 P M 22 hypothetically, something was going very wrong, there's gas in  
3 : 3 5 P M 23 the riser, and you tested them on what they did, their  
3 : 3 5 P M 24 decision-making process, how they did it? No drill like that?

3 : 3 5 P M 25 A. I --



## RANDY EZELL - REDIRECT

3 : 3 5 P M 1 Q. Not that you're aware of?

3 : 3 5 P M 2 A. Yeah, I'm only one of the senior toolpushers. I can't

3 : 3 6 P M 3 speak for the others.

3 : 3 6 P M 4 Q. All right. And you mentioned when you made it aboard the

3 : 3 6 P M 5 *Bankston*, you looked back at the *Horizon* and you saw fire

3 : 3 6 P M 6 coming out of what you thought was one of the big diverter

3 : 3 6 P M 7 pipes?

3 : 3 6 P M 8 A. That's correct.

3 : 3 6 P M 9 Q. Have you ever read Transocean's own investigation of this

3 : 3 6 P M 10 case?

3 : 3 6 P M 11 A. Not the complete investigation, no.

3 : 3 6 P M 12 Q. Did you read the part that dealt with the use of the

3 : 3 6 P M 13 diverter versus the mud-gas separator?

3 : 3 6 P M 14 A. If I did, I can't recall the wording.

3 : 3 6 P M 15 Q. Nobody from Transocean has informed you that the company

3 : 3 6 P M 16 itself concluded that the mud-gas separator was used first and

3 : 3 6 P M 17 not the overboard diverter lines in response to this event?

3 : 3 6 P M 18 A. Well, I guess all I can tell you, as being a survivor of

3 : 3 6 P M 19 that incident and being on the boat, and I know what I thought

3 : 3 6 P M 20 I saw, and --

3 : 3 6 P M 21 Q. Understood.

3 : 3 6 P M 22 A. -- that's my opinion.

3 : 3 6 P M 23 Q. But nobody from Transocean ever sat you down and said --

3 : 3 6 P M 24 asked you what you saw and then compared it to their

3 : 3 7 P M 25 analysis -- which is the opposite -- which is the mud-gas

## RANDY EZELL - REDIRECT

3 : 3 7 PM 1 separator was used and it was overwhelmed. You've never had a  
3 : 3 7 PM 2 discussion?

3 : 3 7 PM 3 MS. CLINGMAN: Objection.

3 : 3 7 PM 4 THE COURT: Ms. Clingman's about to object, and I'm  
3 : 3 7 PM 5 going to sustain it.

3 : 3 7 PM 6 BY MR. STERBCOW:

3 : 3 7 PM 7 Q. I want to make sure I understand one more point about the  
3 : 3 7 PM 8 diverter.

3 : 3 7 PM 9 I think you said that you wouldn't want to use the  
3 : 3 7 PM 10 large one, the big pipe, and blow gas into the wind because it  
3 : 3 7 PM 11 would blow -- theoretically blow what you were trying to divert  
3 : 3 7 PM 12 right back on you?

3 : 3 7 PM 13 A. I don't think that was actually what I said.

3 : 3 7 PM 14 Q. That's what I misunderstood.

3 : 3 7 PM 15 What were you trying to tell us?

3 : 3 7 PM 16 A. Well, say, if you have two diverter lines, port and the  
3 : 3 7 PM 17 starboard, okay, and if the wind direction is going this  
3 : 3 7 PM 18 direction, well, you would want to divert on the, say,  
3 : 3 7 PM 19 starboard side --

3 : 3 7 PM 20 Q. Right. With the wind?

3 : 3 7 PM 21 A. Yes, yes.

3 : 3 7 PM 22 Q. Okay. All right. Did you also then say that the *Bankston*  
3 : 3 8 PM 23 was more near the *Deepwater Horizon*, downwind?

3 : 3 8 PM 24 A. To the best of my recollection, I think it was on the  
3 : 3 8 PM 25 starboard side. That's what I can recall.

## RANDY EZELL - REDIRECT

3 : 3 8 P M 1 Q. Would that have created a situation where, if the crew had  
3 : 3 8 P M 2 decided to use the diverter on the starboard side to make sure  
3 : 3 8 P M 3 that the gas was diverted downwind, that they would have  
3 : 3 8 P M 4 actually been blowing the gas towards the *Bankston*?

3 : 3 8 P M 5 A. I don't know what direction the wind was blowing that  
3 : 3 8 P M 6 night. I mean, there could have virtually been no wind, which  
3 : 3 8 P M 7 if that happened to be the case, they could have diverted port  
3 : 3 8 P M 8 side.

3 : 3 8 P M 9 Q. Either way?

3 : 3 8 P M 10 A. Yeah.

3 : 3 8 P M 11 Q. Are you aware of any Transocean policy that deals with the  
3 : 3 8 P M 12 issue of using a diverter when there's a vessel, any type of  
3 : 3 8 P M 13 crew boat or supply boat, moored near the rig?

3 : 3 9 P M 14 A. Well, if there's a boat moored next to the rig, you have  
3 : 3 9 P M 15 to release that boat, get him out of the way.

3 : 3 9 P M 16 Q. Before you activate that big 14-inch -- or however big it  
3 : 3 9 P M 17 is -- diverter?

3 : 3 9 P M 18 A. Yeah, but like I say, it depends. You could always divert  
3 : 3 9 P M 19 in the port side. I mean, you know, I'm just using it as a  
3 : 3 9 P M 20 hypothetical.

3 : 3 9 P M 21 Q. Understood. My point being, if you happen to find  
3 : 3 9 P M 22 yourself in a situation where you have to divert downwind, and  
3 : 3 9 P M 23 your support vessel is more downwind, it's imperative that  
3 : 3 9 P M 24 somebody move that vessel before the diverter be activated.

3 : 3 9 P M 25 A. Before you divert overboard, yes.

## RANDY EZELL - REDIRECT

3 : 3 9 P M 1 Q. All right. Move on.

3 : 3 9 P M 2 One of the last topics you talked about, EDS, I want

3 : 3 9 P M 3 to make sure I understood what you said.

3 : 3 9 P M 4 The EDS can be activated from the bridge, right, the

3 : 3 9 P M 5 marine crew?

3 : 3 9 P M 6 A. It could be.

3 : 3 9 P M 7 Q. And the marine crew does not know the location of the pipe

3 : 3 9 P M 8 in the hole at the time that the decision has to be made unless

3 : 3 9 P M 9 they've had communication with the drill crew; correct?

3 : 3 9 P M 10 A. That's correct.

3 : 3 9 P M 11 Q. So the marine crew has no way of knowing whether the pipe

3 : 4 0 P M 12 is in the position where the blind shear ram can shear the pipe

3 : 4 0 P M 13 or whether the blind hear ram is going to hit a tool joint and

3 : 4 0 P M 14 fail to shear the pipe, correct, unless they can communicate

3 : 4 0 P M 15 with the driller?

3 : 4 0 P M 16 A. That's right. They wouldn't know that.

3 : 4 0 P M 17 Q. So in this situation, given what happened, there was no

3 : 4 0 P M 18 way for the marine crew to know when somebody made the decision

3 : 4 0 P M 19 whether or not to EDS, whether the EDS could even work, because

3 : 4 0 P M 20 they didn't know whether a tool joint was stuck at the blind

3 : 4 0 P M 21 shear ram or not?

3 : 4 0 P M 22 A. They really didn't. They would have left it up to the

3 : 4 0 P M 23 drill floor.

3 : 4 0 P M 24 Q. All right. You went into training a lot, and I won't go

3 : 4 0 P M 25 into it chapter and verse, but I wanted to ask you. I didn't

## RANDY EZELL - REDIRECT

3 : 4 0 P M 1 see anything or hear anything in those documents or hear any  
3 : 4 0 P M 2 testimony during your direct where there was specific training  
3 : 4 0 P M 3 on the method and the interpretation of negative tests.

3 : 4 0 P M 4 Was there any such training provided to your rig crew  
3 : 4 0 P M 5 at any point in time that you can recall on how to perform a  
3 : 4 1 P M 6 negative test and how to interpret a negative test?

3 : 4 1 P M 7 MS. CLINGMAN: Your Honor, I believe this has been  
3 : 4 1 P M 8 asked and answered by at least several counsel.

3 : 4 1 P M 9 THE COURT: I think it has, too. Sustain the  
3 : 4 1 P M 10 objection.

3 : 4 1 P M 11 BY MR. STERBCOW:

3 : 4 1 P M 12 Q. Can you recall any training, other than the ones you  
3 : 4 1 P M 13 specifically talked about, which I think was PIT drills, where  
3 : 4 1 P M 14 actual conditions were simulated?

3 : 4 1 P M 15 A. Trip drill is actual conditions simulated.

3 : 4 1 P M 16 Q. Right, right, I understand that.

3 : 4 1 P M 17 Beyond pit drills, was there any --

3 : 4 1 P M 18 A. No, I said trip. Trip.

3 : 4 1 P M 19 Q. Trip, I'm sorry. Okay.

3 : 4 1 P M 20 A. And PIT.

3 : 4 1 P M 21 Q. And PIT.

3 : 4 1 P M 22 A. And D5 drill, that also is simulated with a -- like a  
3 : 4 1 P M 23 pressure in the well where you're circulating it out.

3 : 4 1 P M 24 Q. Okay.

3 : 4 1 P M 25 A. Yeah, they're all simulations.

## RANDY EZELL - REDIRECT

3 : 4 1 P M 1 Q. Were there simulations performed where a toolpusher and a  
3 : 4 2 P M 2 driller and assistant driller would be put in a simulated  
3 : 4 2 P M 3 emergency well control situation, like a pilot is when he's  
3 : 4 2 P M 4 trained to fly, and then they're forced to go through a series  
3 : 4 2 P M 5 of steps to see how they react?

3 : 4 2 P M 6 Do you have any training like that?

3 : 4 2 P M 7 A. The only training I can think of would be major emergency  
3 : 4 2 P M 8 management that would be anywhere similar to that.

3 : 4 2 P M 9 Q. Is that what happened in major emergency management  
3 : 4 2 P M 10 training? Is that what they did?

3 : 4 2 P M 11 A. It was different scenarios. It could be like a helicopter  
3 : 4 2 P M 12 crash on the heliport and try to help you learn how to prepare  
3 : 4 2 P M 13 with, you know, situations like that. That's just one example.  
3 : 4 2 P M 14 There could be --

3 : 4 2 P M 15 THE COURT: I think what you were asking, though, is  
3 : 4 2 P M 16 something like a simulator, like a pilot simulator or a capsule  
3 : 4 3 P M 17 that somebody would go into. It's not a real rig or a  
3 : 4 3 P M 18 driller's shack; it's a simulator itself.

3 : 4 3 P M 19 You're not talking about that, are you?

3 : 4 3 P M 20 THE WITNESS: No, sir, I'm not.

3 : 4 3 P M 21 THE COURT: Okay.

3 : 4 3 P M 22 BY MR. STERBCOW:

3 : 4 3 P M 23 Q. In terms of the wells, you spent some time talking about  
3 : 4 3 P M 24 where wells were drilled, how deeply they had been drilled over  
3 : 4 3 P M 25 time, the history of the rig. Do you remember that? You had

## RANDY EZELL - REDIRECT

3 : 4 3 P M 1 the graph with the lines?

3 : 4 3 P M 2 A. Right. Yeah.

3 : 4 3 P M 3 Q. Do you know or can you tell us -- although the number and

3 : 4 3 P M 4 the depths of the wells drilled was shown, how many of those

3 : 4 3 P M 5 were drilled in what we'd call "no-salt formations"? Do you

3 : 4 3 P M 6 have any idea?

3 : 4 3 P M 7 A. No, sir, I can't recall exactly.

3 : 4 3 P M 8 Q. All right.

3 : 4 3 P M 9 A. That's a vast number of wells.

3 : 4 3 P M 10 Q. And do you know that the Macondo was, in fact, a no-salt

3 : 4 3 P M 11 well? If you know.

3 : 4 3 P M 12 A. No, sir.

3 : 4 3 P M 13 Q. You don't know one way or the other?

3 : 4 3 P M 14 A. No.

3 : 4 3 P M 15 Q. Finally, in terms of safety, you looked at your Transocean

3 : 4 4 P M 16 Daily Start Think Report.

3 : 4 4 P M 17 Would you agree with me that the emphasis in those

3 : 4 4 P M 18 reports and the activities surrounding those reports is

3 : 4 4 P M 19 personal safety aboard the rig; in other words, roustabouts

3 : 4 4 P M 20 avoiding pinch points during loading operations, dropped

3 : 4 4 P M 21 objects, slips and falls, stairways, that type of thing?

3 : 4 4 P M 22 A. Yes.

3 : 4 4 P M 23 Q. That's the emphasis; correct?

3 : 4 4 P M 24 A. Personal safety, yes.

3 : 4 4 P M 25 Q. It does not deal with issues surrounding ensuring that you

## RANDY EZELL - REDIRECT

3 : 4 4 P M 1 and your crew are prepared for dangerous situations like loss  
3 : 4 4 P M 2 of well control?

3 : 4 4 P M 3 A. Well control school is where you get that particular  
3 : 4 4 P M 4 training.

3 : 4 4 P M 5 Q. And I understand that, but I want to make sure that we  
3 : 4 4 P M 6 understand. Those Daily Start Think Reports don't deal with  
3 : 4 4 P M 7 that at all?

3 : 4 4 P M 8 A. No, that's different. That's a different system  
3 : 4 4 P M 9 altogether.

3 : 4 5 P M 10 Q. And the last question: During BP's exam, a negative test  
3 : 4 5 P M 11 procedure was put up and then a 2005 e-mail was put up  
3 : 4 5 P M 12 regarding negative test procedure. And you and I had a  
3 : 4 5 P M 13 discussion earlier about Jimmy Harrell's negative test  
3 : 4 5 P M 14 procedure?

3 : 4 5 P M 15 A. That's right.

3 : 4 5 P M 16 Q. Based on what you have told us, have I correctly concluded  
3 : 4 5 P M 17 that at no time prior to the night of the incident was a single  
3 : 4 5 P M 18 standardized procedure for negative tests established aboard  
3 : 4 5 P M 19 the *Deepwater Horizon*?

3 : 4 5 P M 20 A. We had different versions of a negative test, but not a  
3 : 4 5 P M 21 single one.

3 : 4 5 P M 22 Q. And none of those versions, it sounds like, took into  
3 : 4 5 P M 23 account the situation that actually occurred where you had  
3 : 4 5 P M 24 pressure on the drill pipe, no pressure on the kill line, and  
3 : 4 5 P M 25 what do we do if that happens?



## MILES RANDAL EZELL - REDIRECT

3 : 4 5 P M 1 A. That's something I've never been exposed to.

3 : 4 5 P M 2 Q. Thank you.

3 : 4 5 P M 3 MR. STERBCOW: I have no further questions, Your  
3 : 4 5 P M 4 Honor.

3 : 4 5 P M 5 THE COURT: Okay.

3 : 4 5 P M 6 MR. UNDERHILL: No questions from the United States,  
3 : 4 6 P M 7 Your Honor.

3 : 4 6 P M 8 MR. KANNER: No questions.

3 : 4 6 P M 9 THE COURT: You-all don't get to go again, you know.  
3 : 4 6 P M 10 Everybody doesn't get to go again.

3 : 4 6 P M 11 I'll ask Ms. Clingman if she has a few more  
3 : 4 6 P M 12 questions. Hopefully very few.

3 : 4 6 P M 13 MS. CLINGMAN: I have brief redirect, Your Honor, if  
3 : 4 6 P M 14 I may.

3 : 4 6 P M 15 **REDIRECT EXAMINATION**

3 : 4 6 P M 16 **BY MS. CLINGMAN:**

3 : 4 6 P M 17 Q. All right, Mr. Ezell, deep breath. A few more questions.

3 : 4 6 P M 18 A. Okay.

3 : 4 6 P M 19 Q. Really quickly. You were asked about dry dock, and you  
3 : 4 6 P M 20 mentioned UWILD. What is UWILD?

3 : 4 6 P M 21 A. It's similar to a shipyard. I don't know exactly if it's  
3 : 4 6 P M 22 identical; but it's an underwater inspection by divers, I  
3 : 4 6 P M 23 believe.

3 : 4 6 P M 24 Q. Is it "underwater inspection in lieu of dry dock"? Is  
3 : 4 6 P M 25 that what UWILD stands for?

## MILES RANDAL EZELL - REDIRECT

3 : 4 6 P M 1 A. Yeah, I'm sorry. I froze, I didn't -- I couldn't do it in  
3 : 4 6 P M 2 my head.

3 : 4 7 P M 3 Q. That's a lot of acronyms.

3 : 4 7 P M 4 But then we saw the size of the *Deepwater Horizon* in  
3 : 4 7 P M 5 the shipyard earlier?

3 : 4 7 P M 6 A. Right.

3 : 4 7 P M 7 Q. *Deepwater Horizon* wasn't often in dock. In fact, it was  
3 : 4 7 P M 8 never in dock after leaving Korea?

3 : 4 7 P M 9 A. Not to my knowledge.

3 : 4 7 P M 10 Q. Did it have underwater in lieu of dry dock inspections  
3 : 4 7 P M 11 while you were on board?

3 : 4 7 P M 12 A. Yes, it did.

3 : 4 7 P M 13 Q. Those were done every couple years?

3 : 4 7 P M 14 A. They were periodic, yes.

3 : 4 7 P M 15 Q. On the issue of simulators, like an aircraft simulator,  
3 : 4 7 P M 16 was that part of well control school at Transocean offices?

3 : 4 7 P M 17 A. The actual simulator in the well control school, yes, you  
3 : 4 7 P M 18 can do a lot of things with it.

3 : 4 7 P M 19 Q. And that's where you put people in and actually simulate  
3 : 4 7 P M 20 an emergency and they can actually push the buttons and close  
3 : 4 7 P M 21 the valves?

3 : 4 7 P M 22 A. Yeah, you could do it, but it's not like a cockpit or  
3 : 4 7 P M 23 anything of that nature.

3 : 4 8 P M 24 Q. Not as fancy?

3 : 4 8 P M 25 A. It's not as fancy as one would think. It's very simple.

## MILES RANDAL EZELL - REDIRECT

3 : 4 8 P M 1 Q. But you did simulate the experience of different well  
3 : 4 8 P M 2 control activities?  
3 : 4 8 P M 3 A. Yes, yes.  
3 : 4 8 P M 4 Q. Let me ask you briefly, sir. I believe you told me  
3 : 4 8 P M 5 earlier of your friend, Mr. Steve Bertone, who was on the rig?  
3 : 4 8 P M 6 A. Yeah, he and I were friends.  
3 : 4 8 P M 7 Q. He was the maintenance supervisor?  
3 : 4 8 P M 8 A. That's correct.  
3 : 4 8 P M 9 Q. You were shown an e-mail, if you remember, TREN-5618, at  
3 : 4 8 P M 10 the end of October 2009; and you said you remembered talking  
3 : 4 8 P M 11 about this with Steve Bertone?  
3 : 4 8 P M 12 A. I do.  
3 : 4 8 P M 13 Q. What did he tell you about sending this e-mail to quite a  
3 : 4 8 P M 14 number of people, including Paul Johnson onshore? Actually,  
3 : 4 8 P M 15 yes, sent it to him.  
3 : 4 8 P M 16 A. He was a little perturbed, to say the least. And like I  
3 : 4 8 P M 17 say, he fired this off just in anger. Steve was upset about  
3 : 4 9 P M 18 it --  
3 : 4 9 P M 19 Q. Go ahead.  
3 : 4 9 P M 20 A. Steve was upset about it for a couple of days, but then he  
3 : 4 9 P M 21 got back to his normal self. He was overloaded at one point.  
3 : 4 9 P M 22 We had a new maintenance system that came in. We used to have  
3 : 4 9 P M 23 EMPAC, and then we got RMS. And he was trying to deal with  
3 : 4 9 P M 24 that, and he was feeling the pressure of all of that.  
3 : 4 9 P M 25 Q. Was that about the time that Transocean converted the

## MILES RANDAL EZELL - REDIRECT

3 : 4 9 P M 1 maintenance system on the *Deepwater Horizon* from EMPAC to RMS?

3 : 4 9 P M 2 A. Yes, it would have been along about that time.

3 : 4 9 P M 3 Q. Was it also immediately following the BP extensive audit

3 : 4 9 P M 4 of the *Deepwater Horizon*?

3 : 4 9 P M 5 A. I think so. I think so.

3 : 4 9 P M 6 Q. Also, while you all were at Macondo, were you also

3 : 4 9 P M 7 planning for an SPS, for a special periodic survey time coming

3 : 4 9 P M 8 up?

3 : 4 9 P M 9 A. Yes, we were.

3 : 4 9 P M 10 Q. Was there a lot of maintenance work and preparation for

3 : 5 0 P M 11 that inspection and overhaul?

3 : 5 0 P M 12 A. Right. That was upcoming very soon.

3 : 5 0 P M 13 Q. Were those some of the things stressing Mr. Bertone, as he

3 : 5 0 P M 14 explained to you, in October of 2009?

3 : 5 0 P M 15 A. Yes, that was it.

3 : 5 0 P M 16 Q. That was 2009, October. Was he then on the rig with you

3 : 5 0 P M 17 in November, December, January, February, March, April, after

3 : 5 0 P M 18 that?

3 : 5 0 P M 19 A. Yes, he was.

3 : 5 0 P M 20 Q. Did he have any other rants like this that you know of?

3 : 5 0 P M 21 A. No. I think that was as bad as I've ever seen Steve at

3 : 5 0 P M 22 that moment in time.

3 : 5 0 P M 23 Q. Went back to being Steve after that?

3 : 5 0 P M 24 A. He came back to his normal self.

3 : 5 0 P M 25 Q. We all have our moments.

## MILES RANDAL EZELL - REDIRECT

3 : 5 0 P M 1 One other question I wanted to ask you, Mr. Ezell.  
3 : 5 0 P M 2 You were asked about the bladder effect and the annular  
3 : 5 0 P M 3 compression. This is a dead horse, so I just want to confirm.  
3 : 5 0 P M 4 Have you heard the term bladder effect before this  
3 : 5 0 P M 5 litigation, post-incident, from anyone at any time for any  
3 : 5 1 P M 6 reason?  
3 : 5 1 P M 7 A. I have not at all.  
3 : 5 1 P M 8 Q. Annular compression, you mentioned, was a term you had  
3 : 5 1 P M 9 heard on the BP engineering side. Had you ever heard that from  
3 : 5 1 P M 10 your crew?  
3 : 5 1 P M 11 MR. BROCK: I object. That misstates the testimony.  
3 : 5 1 P M 12 MS. CLINGMAN: Well, let me ask him, because I was  
3 : 5 1 P M 13 pretty sure he said that.  
3 : 5 1 P M 14 BY MS. CLINGMAN:  
3 : 5 1 P M 15 Q. You said you had heard the --  
3 : 5 1 P M 16 THE COURT: No, no. He said he had heard -- he had  
3 : 5 1 P M 17 some vague recollection of hearing the term annular  
3 : 5 1 P M 18 compression, but he couldn't recall from whom or where.  
3 : 5 1 P M 19 THE WITNESS: Yeah, that's right, Judge.  
3 : 5 1 P M 20 MS. CLINGMAN: Fair enough.  
3 : 5 1 P M 21 BY MS. CLINGMAN:  
3 : 5 1 P M 22 Q. Had you heard that from Jason Anderson?  
3 : 5 1 P M 23 THE COURT: He just said he doesn't remember who he  
3 : 5 1 P M 24 heard it from.  
3 : 5 1 P M 25 MS. CLINGMAN: Well, but he --

## MILES RANDAL EZELL - REDIRECT

3 : 5 1 P M 1 THE COURT: So how can he answer that question?

3 : 5 1 P M 2 MR. BROCK: Objection.

3 : 5 1 P M 3 BY MS. CLINGMAN:

3 : 5 1 P M 4 Q. Do you know if it was from your crew or not, when you said

3 : 5 1 P M 5 you don't know --

3 : 5 1 P M 6 THE COURT: He said he doesn't know who he heard it

3 : 5 1 P M 7 from, Ms. Clingman.

3 : 5 1 P M 8 MS. CLINGMAN: I think he knows who he didn't --

3 : 5 1 P M 9 THE COURT: I think we've beat that horse enough.

3 : 5 1 P M 10 Okay?

3 : 5 1 P M 11 MS. CLINGMAN: Okay.

3 : 5 1 P M 12 BY MS. CLINGMAN:

3 : 5 1 P M 13 Q. Let's look real quickly at the organizational chart that

3 : 5 1 P M 14 Mr. Brock showed you.

3 : 5 1 P M 15 MS. CLINGMAN: I don't have the TREX number, so I'm

3 : 5 1 P M 16 hoping Connie does.

3 : 5 1 P M 17 BY MS. CLINGMAN:

3 : 5 1 P M 18 Q. You were shown an organizational chart for the *Deepwater*

3 : 5 1 P M 19 *Horizon*. Do you remember looking at this?

3 : 5 1 P M 20 A. Yes, I do.

3 : 5 2 P M 21 Q. Okay. And down at the bottom right -- you weren't asked

3 : 5 2 P M 22 specifically about this -- is there a distinction between when

3 : 5 2 P M 23 the rig is underway and when the rig is drilling?

3 : 5 2 P M 24 A. Yes, I see that.

3 : 5 2 P M 25 Q. And with respect to person in charge, what's the

## MILES RANDAL EZELL - REDIRECT

3 : 5 2 P M 1 difference when you're drilling or when you're floating,  
3 : 5 2 P M 2 underway?

3 : 5 2 P M 3 A. Underway, the master is the PIC; and then drilling mode is  
3 : 5 2 P M 4 the OIM. But the master has always got overriding authority.

3 : 5 2 P M 5 Q. With respect to overriding authority you just mentioned,  
3 : 5 2 P M 6 did you experience any confusion about that on the *Deepwater*  
3 : 5 2 P M 7 *Horizon*?

3 : 5 2 P M 8 A. Not at all.

3 : 5 2 P M 9 Q. Did you say you had been the acting OIM person at times?

3 : 5 2 P M 10 A. I had on several occasions on the *Horizon*.

3 : 5 2 P M 11 Q. Had you been acting OIM while crews were drilling?

3 : 5 2 P M 12 A. Yes, I have.

3 : 5 2 P M 13 Q. So you would have been the person in charge?

3 : 5 3 P M 14 A. Correct.

3 : 5 3 P M 15 Q. And at that time, in your personal experience, Mr. Ezell,  
3 : 5 3 P M 16 who did you see as having overriding authority?

3 : 5 3 P M 17 A. It would have been the master.

3 : 5 3 P M 18 Q. Does that ever change?

3 : 5 3 P M 19 A. Yes, it was the master.

3 : 5 3 P M 20 Q. Now, the captain may have the authority, Mr. Ezell; but  
3 : 5 3 P M 21 would it be common for the master to pull rank over the OIM  
3 : 5 3 P M 22 with respect to a drilling issue?

3 : 5 3 P M 23 A. No, it wouldn't be common. And they worked together, too,  
3 : 5 3 P M 24 as a team.

3 : 5 3 P M 25 Q. If there were any question in your mind about the chain of

## MILES RANDAL EZELL - REDIRECT

3 : 5 3 P M 1 command on the rig, where would you look?

3 : 5 3 P M 2 A. I would look on our station bill, which was posted all

3 : 5 3 P M 3 around the rig.

3 : 5 3 P M 4 Q. Okay. Let's take a quick look at that. I believe it's

3 : 5 3 P M 5 3 -- it's TREN-4603. Is this the *Deepwater Horizon* station

3 : 5 3 P M 6 bill?

3 : 5 3 P M 7 A. Yes, it is.

3 : 5 3 P M 8 Q. You said it's all around the rig. Where, for example, is

3 : 5 3 P M 9 this posted on the rig?

3 : 5 4 P M 10 A. I don't know if I can name all the spots. It was in

3 : 5 4 P M 11 multiple places. But it was in the helicopter waiting room

3 : 5 4 P M 12 where you depart and arrive; it was right outside the galley

3 : 5 4 P M 13 posted where you could see it; it was in the toolpusher's

3 : 5 4 P M 14 office; it was in the OIM's office, the master's office; it was

3 : 5 4 P M 15 on the bridge; and it was in my room, on the door. And I feel

3 : 5 4 P M 16 like it was in the majority of the rooms as well, but I

3 : 5 4 P M 17 can't -- I haven't been in all the rooms.

3 : 5 4 P M 18 Q. In your sleeping quarters room, in your cabin?

3 : 5 4 P M 19 A. In my sleeping quarters room, right.

3 : 5 4 P M 20 Q. Did you consider the station bill to clearly indicate the

3 : 5 4 P M 21 master's overriding authority?

3 : 5 4 P M 22 A. Yes, I do. We have to comply and go by it.

3 : 5 4 P M 23 Q. Now, in an emergency situation, Mr. Ezell, would you need

3 : 5 4 P M 24 to go and consult the station bill or manual?

3 : 5 5 P M 25 **MR. BROCK:** I'm just going to object. It's beyond



## MILES RANDAL EZELL - REDIRECT

3 : 5 5 P M 1 the scope of examination.

3 : 5 5 P M 2 THE COURT: I think it is. I think it is, yeah. I  
3 : 5 5 P M 3 believe we're getting beyond the scope of cross-examinations.

3 : 5 5 P M 4 MS. CLINGMAN: Okay.

3 : 5 5 P M 5 BY MS. CLINGMAN:

3 : 5 5 P M 6 Q. Then let me ask you this: You were asked about emergency  
3 : 5 5 P M 7 disconnect. With respect to a well control situation, would  
3 : 5 5 P M 8 the master have the authority to make an emergency disconnect?

3 : 5 5 P M 9 MR. BROCK: Same objection.

3 : 5 5 P M 10 THE COURT: Sustained. Sustained.

3 : 5 5 P M 11 MS. CLINGMAN: BP asked if the drill crew members  
3 : 5 5 P M 12 would have the authority. He was not asked if the master would  
3 : 5 5 P M 13 have that authority, and so I'm completing the set of questions  
3 : 5 5 P M 14 that were asked by BP's counsel.

3 : 5 5 P M 15 THE COURT: I still sustain the objection.

3 : 5 5 P M 16 MS. CLINGMAN: Sustain the objection, okay.

3 : 5 5 P M 17 BY MS. CLINGMAN:

3 : 5 5 P M 18 Q. With respect to the captain, you indicated that he  
3 : 5 5 P M 19 launched your life raft; right?

3 : 5 5 P M 20 A. Yes.

3 : 5 5 P M 21 Q. And how did he evacuate the rig?

3 : 5 6 P M 22 THE COURT: He said he jumped off.

3 : 5 6 P M 23 BY MS. CLINGMAN:

3 : 5 6 P M 24 Q. How far was that? How far did he have to jump?

3 : 5 6 P M 25 A. Probably 70 or so feet.

## MILES RANDAL EZELL - REDIRECT

3 : 5 6 P M 1 Q. From your experience that night and participating in the  
3 : 5 6 P M 2 evacuation, do you have any criticism of the captain?  
3 : 5 6 P M 3 A. I have none whatsoever. Actually, one part about this I  
3 : 5 6 P M 4 haven't stated is we were connected to the rig by like a  
3 : 5 6 P M 5 quarter-inch rope, a lanyard. And we were getting extremely  
3 : 5 6 P M 6 hot, we were cooking. And we couldn't locate our knife at the  
3 : 5 6 P M 7 moment with all the heat and all; and it popped, and we just  
3 : 5 6 P M 8 thought the line popped due to the heat.  
3 : 5 6 P M 9 But the captain, when he jumped in, he saw we were  
3 : 5 6 P M 10 connected to the rig, he swam to a *Damon Bankston*, fast rescue  
3 : 5 6 P M 11 boat, and got a knife, because Transocean was knife-free, came  
3 : 5 6 P M 12 back and cut that lanyard. That allowed us to escape from the  
3 : 5 7 P M 13 rig.  
3 : 5 7 P M 14 MS. CLINGMAN: Nothing further, Your Honor.  
3 : 5 7 P M 15 Thank you, Mr. Ezell.  
3 : 5 7 P M 16 THE COURT: Thank you, Mr. Ezell. You're free.  
3 : 5 7 P M 17 THE WITNESS: All right.  
3 : 5 7 P M 18 THE COURT: Next witness will be who?  
3 : 5 7 P M 19 MR. WILLIAMS: Ronnie Sepulvado.  
3 : 5 7 P M 20 THE COURT: All right. Let's take a 15-minute  
3 : 5 7 P M 21 recess.  
3 : 5 7 P M 22 THE DEPUTY CLERK: All rise.  
3 : 5 7 P M 23 (WHEREUPON, the Court took a recess.)  
4 : 1 6 P M 24 THE DEPUTY CLERK: All rise.  
4 : 1 6 P M 25 THE COURT: Let's be seated, everyone.

## MILES RANDAL EZELL - REDIRECT

1 Plaintiffs can call their next witness.

2 **MR. KRAUS:** Your Honor, before we do that, do you  
3 mind if we introduce our exhibits related to Mr. Ezell's  
4 examination?

5 Doug Kraus on behalf of the State of Louisiana.  
6 I'd like to go ahead and introduce Trial Exhibit 0929, 0687,  
7 and 1887.

8 **THE COURT:** All right. Any objections?

9 Without objections, those exhibits are admitted.

10 **MR. STERBCOW:** Your Honor, Paul Sterbcow with the  
11 PSC. With respect to Mr. Ezell's testimony, I would offer into  
12 evidence all exhibits, demonstratives, and call-outs used and  
13 discussed during his testimony which have not already been  
14 introduced into evidence. And as per the Court's prior  
15 instruction, we'll submit an in globo list as soon as possible.

16 Also, we have, finally, an agreed-upon list of  
17 the exhibits and demonstratives from Mark Bly's examination --

18 **THE COURT:** Well, wait. Let's take Mr. Ezell first.  
19 Are there any objections to the --

20 **MR. BROCK:** Your Honor, I don't think we have any.  
21 I'd probably like to just look at the list and let you know --

22 **THE COURT:** Okay.

23 **MR. BROCK:** -- tomorrow morning. But I don't think  
24 we have any.

25 **THE COURT:** Okay. Make sure you circulate those

## MILES RANDAL EZELL - REDIRECT

4 : 1 7 P M 1 around. If anybody has any objections, let us know by tomorrow  
4 : 1 7 P M 2 morning. We can formally admit those in the morning.

4 : 1 7 P M 3 Do you want to tell me about Mr. Bly?

4 : 1 7 P M 4 **MR. STERBCOW:** Mr. Bly, we have circulated the list.  
4 : 1 7 P M 5 It's been vetted. Any objections have been dealt with. So  
4 : 1 7 P M 6 this is the final list that we'll submit to the Court, along  
4 : 1 7 P M 7 with flash drives of the demonstratives.

4 : 1 7 P M 8 **THE COURT:** Any objections regarding the PSC's  
4 : 1 7 P M 9 exhibits in connection with their examination of Mr. Bly?

4 : 1 7 P M 10 Hearing none, those are admitted.

4 : 1 7 P M 11 **MR. STERBCOW:** Finally, Your Honor, we will offer the  
4 : 1 7 P M 12 transcript of the video of Michael Keith Williams played  
4 : 1 7 P M 13 yesterday, along with the depo excerpts on a flash drive.

4 : 1 7 P M 14 **THE COURT:** Okay. Very well. Those are admitted.

4 : 1 8 P M 15 **MR. STERBCOW:** Thank you, Your Honor.

4 : 1 8 P M 16 **MR. ROBERTS:** Your Honor, on the transcript of Mike  
4 : 1 8 P M 17 Williams, may Transocean have an opportunity to review it? We  
4 : 1 8 P M 18 believe that there was an error made by the PSC in some of the  
4 : 1 8 P M 19 questionings and answers on the transcript.

4 : 1 8 P M 20 **THE COURT:** An error in the transcript?

4 : 1 8 P M 21 **MR. ROBERTS:** I'm sorry, on the video. They skipped  
4 : 1 8 P M 22 over part of the answer, and we just want an opportunity to  
4 : 1 8 P M 23 sync it a little bit better. We can get that done by tomorrow.

4 : 1 8 P M 24 **THE COURT:** Very well.

4 : 1 8 P M 25 Did you hear that, Mr. Sterbcow?

## MILES RANDAL EZELL - REDIRECT

4 : 18 PM 1           **MR. STERBCOW:** I'm sorry. I should have --

4 : 18 PM 2           **THE COURT:** Mr. Roberts wants until tomorrow

4 : 18 PM 3 morning -- he thinks maybe your transcript of Mr. Williams'

4 : 18 PM 4 video clip was maybe not 100 percent accurate, so he wants a

4 : 18 PM 5 chance to look at that.

4 : 18 PM 6           **MR. ROBERTS:** No malice implied, I think it's just a

4 : 18 PM 7 mistake.

4 : 18 PM 8           **THE COURT:** That's fine. We'll deal with that again

4 : 18 PM 9 in the morning.

4 : 18 PM 10           Okay. Ms. Clingman?

4 : 18 PM 11           **MS. CLINGMAN:** Yes, sir. Rachel Clingman on behalf

4 : 18 PM 12 of Transocean. We would offer and move into evidence most of

4 : 18 PM 13 the demonstratives and the exhibits that we used with

4 : 18 PM 14 Mr. Ezell. To the extent they have not already been admitted,

4 : 19 PM 15 I have a list here that I can read into the record and provide

4 : 19 PM 16 to the Court.

4 : 19 PM 17           **THE COURT:** No, I do not want you to read that into

4 : 19 PM 18 the record.

4 : 19 PM 19           **MS. CLINGMAN:** Good. I appreciate that.

4 : 19 PM 20           **THE COURT:** Do you want until tomorrow morning again?

4 : 19 PM 21           **MR. BROCK:** Please, Your Honor.

4 : 19 PM 22           **THE COURT:** Okay.

4 : 19 PM 23           **MS. CLINGMAN:** We'll circulate our list.

4 : 19 PM 24           **THE COURT:** Make sure you circulate that around. If

4 : 19 PM 25 there are any objections, we'll take that up first thing in the

## MILES RANDAL EZELL - REDIRECT

4 : 19 PM 1 morning. Okay?

4 : 19 PM 2 MS. CLINGMAN: Thank you, Your Honor.

4 : 19 PM 3 MR. UNDERHILL: Thank you, Your Honor. Mike

4 : 19 PM 4 Underhill for the U.S. This is on Bly, and BP had reserved on

4 : 19 PM 5 our list and we've worked it out, so --

4 : 19 PM 6 Correct, Counsel?

4 : 19 PM 7 MS. KARIS: We have, subject to our agreement that

4 : 19 PM 8 one of the exhibits would not be used.

4 : 19 PM 9 MR. UNDERHILL: So the list that we submitted is

4 : 19 PM 10 kosher; both parties agree to it, Your Honor.

4 : 19 PM 11 THE COURT: All right.

4 : 19 PM 12 MS. KARIS: Your Honor, just with the understanding

4 : 19 PM 13 that one exhibit used during Mr. Ezell's deposition, while it

4 : 19 PM 14 was on his list, will not be offered into the record.

4 : 19 PM 15 MR. UNDERHILL: That's a "roger."

4 : 19 PM 16 THE COURT: So with that understanding, those

4 : 19 PM 17 exhibits are admitted.

4 : 19 PM 18 MR. GODWIN: Thank you, Your Honor. Don Godwin --

4 : 19 PM 19 THE COURT: Wait a minute. Excuse me, Mr. Godwin.

4 : 19 PM 20 Let's not get ahead of ourselves.

4 : 19 PM 21 You gave that list to Stephanie and --

4 : 19 PM 22 THE DEPUTY CLERK: I have a corrected list --

4 : 19 PM 23 MR. UNDERHILL: It did not need correction. As

4 : 20 PM 24 submitted was correct.

4 : 20 PM 25 THE DEPUTY CLERK: Okay.

## MILES RANDAL EZELL - REDIRECT

4 : 2 0 P M 1 THE COURT: Okay. Mr. Godwin.

4 : 2 0 P M 2 MR. GODWIN: Thank you, Your Honor. Don Godwin for

4 : 2 0 P M 3 Halliburton. Ms. Karis and I conferred at the break,

4 : 2 0 P M 4 Your Honor, regarding the exhibits with Bly that was talked

4 : 2 0 P M 5 about earlier today. She said that BP has no objection.

4 : 2 0 P M 6 THE COURT: All right. Anyone else have any

4 : 2 0 P M 7 objection to Mr. Godwin's Bly-related exhibits?

4 : 2 0 P M 8 Without objection, those are admitted.

4 : 2 0 P M 9 MR. GODWIN: Thank you, Your Honor.

4 : 2 0 P M 10 THE COURT: Would you give that to -- okay.

4 : 2 0 P M 11 Stephanie has that. Thank you.

4 : 2 0 P M 12 MR. GODWIN: You're welcome

4 : 2 0 P M 13 MR. WILLIAMS: I'm just here to ask a couple of

4 : 2 0 P M 14 questions, Judge. I don't have anything to say about exhibits.

4 : 2 0 P M 15 THE COURT: Okay. Very well.

4 : 2 0 P M 16 MR. BROCK: Just one last. BP would offer the

4 : 2 0 P M 17 exhibits that I had discussed with Mr. Ezell, and we'll furnish

4 : 2 0 P M 18 a list first thing tomorrow morning.

4 : 2 0 P M 19 THE COURT: Sounds like everybody can take a final

4 : 2 0 P M 20 look at the other lists of the Ezell-related exhibits, and we

4 : 2 0 P M 21 can deal with that and formally admit them first thing in the

4 : 2 0 P M 22 morning.

4 : 2 0 P M 23 Okay. Stephanie, you need to swear in the

4 : 2 0 P M 24 witness.

4 : 2 0 P M 25 THE DEPUTY CLERK: I'm sorry.

## RONNIE W. SEPULVADO - DIRECT

4 : 2 0 P M 1 (WHEREUPON, **RONNIE W. SEPULVADO**, having been duly  
4 : 2 0 P M 2 sworn, testified as follows.)

4 : 2 1 P M 3 **THE DEPUTY CLERK:** Please state your full name and  
4 : 2 1 P M 4 correct spelling for the record.

4 : 2 1 P M 5 **THE WITNESS:** Ronnie, R-O-N-N-I-E, W., Sepulvado,  
4 : 2 1 P M 6 S-E-P-U-L-V-A-D-O.

**DIRECT EXAMINATION**

4 : 2 1 P M 7  
4 : 2 1 P M 8 **BY MR. WILLIAMS:**

4 : 2 1 P M 9 **Q.** Good evening, Mr. Sepulvado. My name is Duke Williams,  
4 : 2 1 P M 10 and I represent the plaintiffs. I'm a member of the Plaintiffs  
4 : 2 1 P M 11 Steering Committee, and I'm taking you on cross-examination  
4 : 2 1 P M 12 this afternoon.

4 : 2 1 P M 13 Could you give us a brief overview of your work  
4 : 2 1 P M 14 history, please?

4 : 2 1 P M 15 **A.** Started out --

4 : 2 1 P M 16 **THE COURT:** Wait, wait, Mr. Sepulvado. You don't  
4 : 2 1 P M 17 have to get quite that close to the microphone. Just about 5  
4 : 2 1 P M 18 or 6 inches -- or where you are should be okay. That would be  
4 : 2 1 P M 19 fine. Thank you.

4 : 2 1 P M 20 **THE WITNESS:** Is this good?

4 : 2 1 P M 21 **BY MR. WILLIAMS:**

4 : 2 1 P M 22 **Q.** Yeah, it's great.

4 : 2 1 P M 23 **A.** I graduated from LSU in 1971, in animal science. I went  
4 : 2 2 P M 24 to work in the oilfield, roustabout and roughnecking. And I  
4 : 2 2 P M 25 started out mud engineering for Baroid in 1971. Worked for



## RONNIE W. SEPULVADO - DIRECT

4 : 2 2 P M 1 them about three years. Then I went into directional drilling  
4 : 2 2 P M 2 for Wilson Downhole. I did that for about three years.

4 : 2 2 P M 3 Then I went to work in 1977 for Pennzoil as a well  
4 : 2 2 P M 4 site leader. I worked for them until 1980.

4 : 2 2 P M 5 And from 1980 to 2000, I worked for ARCO Vastar; and  
4 : 2 2 P M 6 then BP bought ARCO Vastar in 2000, and I worked as a well site  
4 : 2 2 P M 7 leader for them from 2000 to 2010.

4 : 2 2 P M 8 2011, I retired.

4 : 2 2 P M 9 2012, I worked as a well site leader on land horizon  
4 : 2 2 P M 10 drilling for BHP Billiton. And now I'm retired again.

4 : 2 3 P M 11 Q. Congratulations. So you got about 30 years' experience as  
4 : 2 3 P M 12 a well site leader. Is that about right?

4 : 2 3 P M 13 A. 34 years.

4 : 2 3 P M 14 Q. Okay. Thank you, sir.

4 : 2 3 P M 15 And you're retired twice. Now, you retired from BP  
4 : 2 3 P M 16 in 2010?

4 : 2 3 P M 17 A. Yes, sir. December the 30th, 2010.

4 : 2 3 P M 18 Q. Okay. And how long were you a well site leader assigned  
4 : 2 3 P M 19 to the Transocean *Deepwater Horizon*?

4 : 2 3 P M 20 A. Almost eight years.

4 : 2 3 P M 21 Q. What typically was the duration of your hitch on the  
4 : 2 3 P M 22 *Deepwater Horizon*?

4 : 2 3 P M 23 A. I worked 14 days on and 14 days off.

4 : 2 3 P M 24 Q. And was that your hitch throughout your whole assignment  
4 : 2 3 P M 25 to the *Horizon*?

## RONNIE W. SEPULVADO - DIRECT

4 : 2 3 P M 1 A. Yes, sir.

4 : 2 3 P M 2 Q. I'm going to ask you a series of questions now that I want  
4 : 2 3 P M 3 to restrict to the time frame of the month of April of 2010.  
4 : 2 3 P M 4 Okay?

4 : 2 3 P M 5 A. Okay.

4 : 2 3 P M 6 Q. And about nine days into your hitch in April of 2010, you  
4 : 2 4 P M 7 left the Transocean *Deepwater Horizon*, did you not?

4 : 2 4 P M 8 A. That's correct, April 16th.

4 : 2 4 P M 9 Q. Okay. And the reason you left is because your well  
4 : 2 4 P M 10 control certificate was about to expire; right?

4 : 2 4 P M 11 A. Yes, sir.

4 : 2 4 P M 12 Q. And BP requires that you have a valid well control  
4 : 2 4 P M 13 certificate to work as a well site leader offshore; correct?

4 : 2 4 P M 14 A. Yes, that's right.

4 : 2 4 P M 15 Q. Did you seek -- try and seek a waiver, an extension of --  
4 : 2 4 P M 16 get an exemption from BP?

4 : 2 4 P M 17 A. BP wouldn't give an exemption. And they wouldn't give us  
4 : 2 4 P M 18 a window. You know, by a *window* I mean 30 days over or  
4 : 2 4 P M 19 something like that. But we had to go at the two-year date.

4 : 2 4 P M 20 Q. That was a hard-and-fast rule. If you didn't have a valid  
4 : 2 4 P M 21 well control certificate, you couldn't be out there; correct?

4 : 2 4 P M 22 A. That's correct.

4 : 2 5 P M 23 Q. So arrangements were made to get a substitute well site  
4 : 2 5 P M 24 leader out there to take your place; right?

4 : 2 5 P M 25 A. Yes, sir.

## RONNIE W. SEPULVADO - DIRECT

4 : 2 5 P M 1 Q. And that was coordinated through the well's team leader  
4 : 2 5 P M 2 for the Macondo well, John Guide; is that correct?  
4 : 2 5 P M 3 A. That's correct.  
4 : 2 5 P M 4 Q. And there are two BP well site leaders on the *Deepwater*  
4 : 2 5 P M 5 *Horizon* at all times while it's drilling; correct?  
4 : 2 5 P M 6 A. That's correct.  
4 : 2 5 P M 7 Q. And each well site leader works an on-duty tour of  
4 : 2 5 P M 8 12 hours, more or less; right?  
4 : 2 5 P M 9 A. Yes, sir.  
4 : 2 5 P M 10 Q. And the well site leader, BP's well site leader, basically  
4 : 2 5 P M 11 is the eyes and ears of BP on that rig while it's drilling or  
4 : 2 5 P M 12 engaged in completion operations or doing any kind of work for  
4 : 2 5 P M 13 BP; right?  
4 : 2 5 P M 14 A. Yes, sir, we worked for BP.  
4 : 2 5 P M 15 Q. And your job is to make sure that whatever the job is,  
4 : 2 5 P M 16 that it is executed and completed in a manner that is  
4 : 2 6 P M 17 acceptable to BP; correct?  
4 : 2 6 P M 18 A. I worked with everybody on the rig. We worked as a team  
4 : 2 6 P M 19 drilling the well. The Transocean guys, third-party people,  
4 : 2 6 P M 20 you know, we have to all work together to drill the well.  
4 : 2 6 P M 21 Q. Right. Teamwork is important.  
4 : 2 6 P M 22 A. That's true. Different people specialize in different  
4 : 2 6 P M 23 things. You know, it's a lot of things that goes into drilling  
4 : 2 6 P M 24 a well.  
4 : 2 6 P M 25 Q. The other well site leader on your last hitch right before

## RONNIE W. SEPULVADO - DIRECT

4 : 2 6 P M 1 you left the rig in April of 2010 was Donald Vidrine; correct?

4 : 2 6 P M 2 A. Yes. I overlapped a week with Don Vidrine.

4 : 2 6 P M 3 Q. How long had you worked with Don Vidrine?

4 : 2 6 P M 4 A. Ever since he'd been on the rig, six, eight -- however

4 : 2 6 P M 5 long he'd been on the rig.

4 : 2 6 P M 6 Q. Did you have any issues or problems with working with him?

4 : 2 7 P M 7 A. No, I didn't.

4 : 2 7 P M 8 Q. Any issues or problems or questions about his competence,

4 : 2 7 P M 9 his ability to act as a well site leader?

4 : 2 7 P M 10 A. No. Don Vidrine was a very competent man. He had a lot

4 : 2 7 P M 11 of experience.

4 : 2 7 P M 12 Q. And the name of the well site leader that was sent out to

4 : 2 7 P M 13 replace you when you headed to the beach was Robert Kaluza;

4 : 2 7 P M 14 correct?

4 : 2 7 P M 15 A. That's correct.

4 : 2 7 P M 16 Q. Did you know Mr. Kaluza?

4 : 2 7 P M 17 A. I knew him, yes, sir.

4 : 2 7 P M 18 Q. Did you have a chance to meet with him and talk to him

4 : 2 7 P M 19 before you passed the watch, so to speak, to Mr. Kaluza and

4 : 2 7 P M 20 went back to the beach to go to well control school?

4 : 2 7 P M 21 A. I called him a couple of days before I left, and I talked

4 : 2 7 P M 22 to him about what was going on on the rig, what materials and

4 : 2 7 P M 23 equipment we had lined up for when he was coming out, and where

4 : 2 7 P M 24 we would probably be on the well when he got out there. I also

4 : 2 7 P M 25 sent him an e-mail.

## RONNIE W. SEPULVADO - DIRECT

4 : 2 7 P M 1 And then we relieved -- when the helicopter landed, I  
4 : 2 8 P M 2 guess we had 15, 20, 30 minutes, something like that; and I  
4 : 2 8 P M 3 just kind of brought him up to speed as to where we were at the  
4 : 2 8 P M 4 moment.

4 : 2 8 P M 5 Q. When you say "the helicopter landed," when it landed on  
4 : 2 8 P M 6 the rig or back in Houma, at the PHI base?

4 : 2 8 P M 7 A. When it landed at the rig.

4 : 2 8 P M 8 Q. Now, before he came out to relieve you, Mr. Kaluza had  
4 : 2 8 P M 9 been permanently assigned to the *Thunder Horse PDQ*  
4 : 2 8 P M 10 installation; is that correct?

4 : 2 8 P M 11 A. That's correct.

4 : 2 8 P M 12 Q. And that's a BP-owned -- perhaps with another partner,  
4 : 2 8 P M 13 Exxon, I think. But that's a BP-owned and operated  
4 : 2 8 P M 14 installation, is it not?

4 : 2 8 P M 15 A. Yes, it is.

4 : 2 8 P M 16 Q. And the *Thunder Horse* is a different type of installation  
4 : 2 8 P M 17 than the Transocean *Deepwater Horizon*, isn't it?

4 : 2 8 P M 18 A. Yes, sir, it's a different type of rig.

4 : 2 8 P M 19 Q. It's production, drilling, and quarters. That's what  
4 : 2 8 P M 20 "PDQ" stands for; correct?

4 : 2 8 P M 21 A. Right.

4 : 2 8 P M 22 Q. And it's permanently moored in place in a particular  
4 : 2 9 P M 23 field; correct?

4 : 2 9 P M 24 A. That's true.

4 : 2 9 P M 25 Q. And it doesn't move, it's permanently anchored; correct?

## RONNIE W. SEPULVADO - DIRECT

4 : 2 9 P M 1 A. Correct.

4 : 2 9 P M 2 Q. And when it drills wells, it drills production wells; is

4 : 2 9 P M 3 that right?

4 : 2 9 P M 4 A. I'm not sure what they do on it, because I've never been

4 : 2 9 P M 5 on it.

4 : 2 9 P M 6 Q. Okay. You said earlier you had been assigned to the

4 : 2 9 P M 7 Transocean *Deepwater Horizon* for approximately eight years;

4 : 2 9 P M 8 correct?

4 : 2 9 P M 9 A. Yes, sir.

4 : 2 9 P M 10 Q. And during that period of time, did the Transocean

4 : 2 9 P M 11 *Deepwater Horizon* ever go into dry dock that you know of?

4 : 2 9 P M 12 A. No, sir.

4 : 2 9 P M 13 Q. Since you spent roughly, I guess, four years of your life

4 : 2 9 P M 14 out there on that vessel, is it fair for me to say that you're

4 : 2 9 P M 15 generally familiar with how the vessel was laid out?

4 : 2 9 P M 16 A. Yes, sir, I knew where everything was at on it.

4 : 2 9 P M 17 Q. Okay. Excuse me. I want to talk a little bit about some

4 : 3 0 P M 18 aspects generally of the layout or general arrangement of the

4 : 3 0 P M 19 *Deepwater Horizon*.

4 : 3 0 P M 20 MR. WILLIAMS: Carl, if you could bring up

4 : 3 0 P M 21 TREN-48116, please.

4 : 3 0 P M 22 BY MR. WILLIAMS:

4 : 3 0 P M 23 Q. Now, this is an arrangement drawing. We -- for some

4 : 3 0 P M 24 reason, my finger doesn't really work on this screen. But I'm

4 : 3 0 P M 25 just going to ask you a couple questions about where things are

## RONNIE W. SEPULVADO - DIRECT

4:30 PM 1 on this arrangement drawing.

4:30 PM 2 Now, this thing doesn't like my finger, so I'm going

4:30 PM 3 to use -- thanks. Do you see where I tried to put the arrow

4:30 PM 4 right there?

4:30 PM 5 A. Yes, sir.

4:30 PM 6 Q. What is that right there?

4:30 PM 7 A. It looks like the rig floor.

4:30 PM 8 Q. Okay. This is the drill floor, and it's the arrangement

4:30 PM 9 plan overhead the drill floor. Is that the rotary table right

4:30 PM 10 there? Can you see it?

4:30 PM 11 A. Yes. The rotary table is the round piece in the middle of

4:30 PM 12 that square --

4:30 PM 13 Q. Right there?

4:30 PM 14 **THE COURT:** Mr. Williams, can you have some of that

4:31 PM 15 blown up? If you're going to go into any detail. I don't know

4:31 PM 16 where you're going with this, but . . .

4:31 PM 17 There you go. Okay.

4:31 PM 18 **MR. WILLIAMS:** Now just to the bottom, if you could

4:31 PM 19 move that a little bit, Carl.

4:31 PM 20 **BY MR. WILLIAMS:**

4:31 PM 21 Q. Is that the drill shack right there? Can you see it?

4:31 PM 22 Right there?

4:31 PM 23 A. Yes, sir. That's the driller's cabin.

4:31 PM 24 Q. Okay. Now, the drill floor is one level above the main

4:31 PM 25 deck, is it not?

## RONNIE W. SEPULVADO - DIRECT

4:31 PM 1 A. Yes, sir.

4:31 PM 2 Q. And just below the drill floor is the moon pool; correct?

4:31 PM 3 A. Correct.

4:31 PM 4 Q. 2143.

4:31 PM 5           Okay. This is a -- obviously, it's a graphic but

4:32 PM 6 taken from underneath the vessel. Does that generally depict

4:32 PM 7 the moon pool?

4:32 PM 8 A. Pretty much. There would be another square piece right in

4:32 PM 9 the middle where it

4:32 PM 10 Q. Okay --

4:32 PM 11 A. -- the point there where the air -- the moon pool is.

4:32 PM 12 Q. And it's through the moon pool that the riser and the

4:32 PM 13 lower marine riser package, or LMRP, are raised or lowered;

4:32 PM 14 correct?

4:32 PM 15 A. Yes, sir.

4:32 PM 16 Q. And it's through the moon pool that the vessel multiplex,

4:32 PM 17 or MUX, cables were routed; correct?

4:32 PM 18 A. Yes, sir. The MUX cable run along the riser. As you run

4:32 PM 19 the riser, you attach the MUX cables to the riser.

4:32 PM 20 Q. Okay. And that's done as you run the riser down to where

4:32 PM 21 it's going to be latched to the wellhead; correct?

4:32 PM 22 A. Yes, sir.

4:32 PM 23 Q. Now, on the *Deepwater Horizon*, the MUX cables provide the

4:32 PM 24 only means of direct communication between the rig and the BOP

4:33 PM 25 stack; is that correct?



## RONNIE W. SEPULVADO - DIRECT

4 : 3 3 P M 1 A. Yes, sir. That's the -- the fiber optics in those cables  
4 : 3 3 P M 2 to operate the stack, they have a 1-inch line that has  
4 : 3 3 P M 3 hydraulic fluid in it also. They call them a hot line.  
4 : 3 3 P M 4 There's also a 2-inch pipe that's attached to the riser that  
4 : 3 3 P M 5 has hydraulic fluid.

4 : 3 3 P M 6 Q. So it's a communication link that supplies electrical  
4 : 3 3 P M 7 power, and it also supplies hydraulic pressure power from the  
4 : 3 3 P M 8 rig; correct?

4 : 3 3 P M 9 A. Yes, sir.

4 : 3 3 P M 10 Q. Let's -- the derrick of the *Deepwater Horizon* was  
4 : 3 3 P M 11 approximately centered over the rotary table, as we saw  
4 : 3 3 P M 12 earlier; is that correct?

4 : 3 3 P M 13 A. It was pretty much center. I don't know what you figure  
4 : 3 3 P M 14 to be the actual center.

4 : 3 3 P M 15 Q. Depending on the particular drilling -- or the particular  
4 : 3 3 P M 16 operation going on at the time, the drill crew ran casing,  
4 : 3 4 P M 17 drill pipe, and drilling tools through the rotary table, down  
4 : 3 4 P M 18 the riser and into the well; correct?

4 : 3 4 P M 19 A. Correct.

4 : 3 4 P M 20 Q. Now, the *Deepwater Horizon* was a top-drive rig, was it  
4 : 3 4 P M 21 not?

4 : 3 4 P M 22 A. Yes, sir.

4 : 3 4 P M 23 Q. And could you explain just briefly what a top-drive rig is  
4 : 3 4 P M 24 and how it works?

4 : 3 4 P M 25 A. A top drive, when you make a joint of pipe up or a stand

## RONNIE W. SEPULVADO - DIRECT

4 : 3 4 P M 1 of pipe in the rotary table stump, you just lower the top drive  
4 : 3 4 P M 2 into the top of it. And it's got a swivel in it that screws  
4 : 3 4 P M 3 into the pipe, and you torque it up with the top drive.

4 : 3 4 P M 4 Also, you route fluid through the top drive. It goes  
4 : 3 4 P M 5 through, it's connected to some hoses. It goes through the  
4 : 3 4 P M 6 derrick down to the pump room. So you're pumping fluid from  
4 : 3 4 P M 7 the pumps all the way up into the derrick and down through the  
4 : 3 4 P M 8 top drive.

4 : 3 4 P M 9 Also, your top drive is used for rotation. It has a  
4 : 3 4 P M 10 motor on it that turns the pipe.

4 : 3 5 P M 11 Q. What was the function -- what is the function of the  
4 : 3 5 P M 12 rotary table on a top-drive rig?

4 : 3 5 P M 13 A. We would use it for making up bits and breaking out bits.

4 : 3 5 P M 14 Q. Had there been any problems with the rotary table on the  
4 : 3 5 P M 15 *Deepwater Horizon* that you can recall?

4 : 3 5 P M 16 A. It had been out for two or three years.

4 : 3 5 P M 17 Q. And because it had been out for two or three years, did  
4 : 3 5 P M 18 that have an impact, even a minor impact, on operations?

4 : 3 5 P M 19 A. No. We could operate around it. It just wasn't as safe  
4 : 3 5 P M 20 to operate around it. But we studied the risks, and Transocean  
4 : 3 5 P M 21 was comfortable with making the bits up without the rotary  
4 : 3 5 P M 22 table.

4 : 3 5 P M 23 Q. Had you ever discussed that problem with anybody on the  
4 : 3 5 P M 24 rig during that two- or three-year period of time?

4 : 3 5 P M 25 A. Yes, sir.

## RONNIE W. SEPULVADO - DIRECT

4 : 3 5 P M 1 Q. Who had you discussed it with?

4 : 3 5 P M 2 A. Probably just about everybody on the rig. With Jimmy  
4 : 3 6 P M 3 Harrell would be one. The OIMs. You know, everybody on the  
4 : 3 6 P M 4 rig knew it was out. We had a white board in our office, and  
4 : 3 6 P M 5 it had been up there for two or three years: "Rotary table  
4 : 3 6 P M 6 out."

4 : 3 6 P M 7 We also put it on -- log it on our morning reports.  
4 : 3 6 P M 8 So everybody in Transocean's office, up in our office,  
4 : 3 6 P M 9 everything knew the rotary table was out.

4 : 3 6 P M 10 Q. Had anybody made a request that you know of back at the  
4 : 3 6 P M 11 beach to have it fixed?

4 : 3 6 P M 12 A. They kept telling me they were waiting on parts. You  
4 : 3 6 P M 13 know, I asked them several times. And then I think the last  
4 : 3 6 P M 14 time I asked them, they said they were going to swap it out  
4 : 3 6 P M 15 with a new rotary table whenever they went in to ship dock --  
4 : 3 6 P M 16 dry dock in 2011.

4 : 3 6 P M 17 Q. Now, Mr. Harrell was the offshore -- the OIM; correct?

4 : 3 6 P M 18 A. Jimmy Harrell, yes.

4 : 3 6 P M 19 Q. Jimmy Harrell.

4 : 3 6 P M 20 Had Mr. Harrell or anybody else on the rig expressed  
4 : 3 7 P M 21 frustration during that two- or three-year period that the  
4 : 3 7 P M 22 rotary table was broken, not working?

4 : 3 7 P M 23 A. Well, I mean, we were all a little frustrated because we  
4 : 3 7 P M 24 couldn't get it -- couldn't get it fixed; but we couldn't make  
4 : 3 7 P M 25 the parts to fix it, so we had to wait until they gave us the

## RONNIE W. SEPULVADO - DIRECT

4 : 3 7 P M 1 parts.

4 : 3 7 P M 2 Q. Okay.

4 : 3 7 P M 3 MR. WILLIAMS: Carl, could you pull up TREX-48109,

4 : 3 7 P M 4 please.

4 : 3 7 P M 5 BY MR. WILLIAMS:

4 : 3 7 P M 6 Q. I'm only going to ask you a couple questions about this.

4 : 3 7 P M 7 We've seen it on multiple occasions. And I just want to ask

4 : 3 7 P M 8 you if -- well, this is a picture of the drill shack; is that

4 : 3 7 P M 9 correct?

4 : 3 7 P M 10 A. Yes, sir.

4 : 3 7 P M 11 Q. Now, there's some overhead windows at an angle above the

4 : 3 7 P M 12 two driller positions that you can see in that picture;

4 : 3 7 P M 13 correct?

4 : 3 7 P M 14 A. Yes, sir.

4 : 3 7 P M 15 Q. The driller and the assistant driller, if they looked up

4 : 3 7 P M 16 through those windows, could they see the crown block?

4 : 3 8 P M 17 A. Yes, sir.

4 : 3 8 P M 18 Q. Could they see the top of the derrick?

4 : 3 8 P M 19 A. Yes, sir.

4 : 3 8 P M 20 Q. Obviously -- and we've heard from Mr. Ezell before you

4 : 3 8 P M 21 took the witness stand, we've heard about the displays that

4 : 3 8 P M 22 were in there. Did you spend any of your time when you were on

4 : 3 8 P M 23 duty in the drill shack?

4 : 3 8 P M 24 A. Quite a bit of time.

4 : 3 8 P M 25 Q. Could you tell us what you did when you were in there?

## RONNIE W. SEPULVADO - DIRECT

4 : 3 8 P M 1 A. For one thing, we didn't have any land lines up there, so  
4 : 3 8 P M 2 we could go up there and have a little peace and watch the well  
4 : 3 8 P M 3 being drilled.

4 : 3 8 P M 4 But all these monitors that he's got has got  
4 : 3 8 P M 5 different things on them, and you can see the weight on the  
4 : 3 8 P M 6 bit, the rotary RPMs, torque, ROP, which is rate of  
4 : 3 8 P M 7 penetration. You can see your pump pressure. You see, your  
4 : 3 8 P M 8 flow shows in there, so you know what kind of flow was coming  
4 : 3 8 P M 9 out of the flow line.

4 : 3 8 P M 10 And there's eight or nine different things you can  
4 : 3 9 P M 11 put on any one of these -- any one of the readouts up there.  
4 : 3 9 P M 12 They usually have -- to the left there of the driller's chair,  
4 : 3 9 P M 13 they have another monitor, and you could also see mud logging  
4 : 3 9 P M 14 readouts from there.

4 : 3 9 P M 15 Q. Okay. Was that other monitor the HITEC -- I'm sorry --  
4 : 3 9 P M 16 the INSITE -- did it display INSITE data supplied by Sperry?

4 : 3 9 P M 17 A. Yes, I think it did.

4 : 3 9 P M 18 Now, most of the mud logging equipment got its  
4 : 3 9 P M 19 information from HITEC. I think the only thing that was  
4 : 3 9 P M 20 separate from HITEC would have been the flow pattern.

4 : 3 9 P M 21 Q. Did you favor one source of data over the INSITE, i.e.,  
4 : 3 9 P M 22 what they used on the rig, Transocean's displays or the  
4 : 3 9 P M 23 Sperry-Sun displays? Did it make any difference to you?

4 : 4 0 P M 24 A. Either one of them were good displays. You could see  
4 : 4 0 P M 25 about what you needed to see on either one of them.

## RONNIE W. SEPULVADO - DIRECT

4 : 4 0 P M 1 Q. Now, INSITE data, the data generated by the Sperry-Sun  
4 : 4 0 P M 2 equipment, was transmitted back to shore, back to BP at  
4 : 4 0 P M 3 Westlake, was it not?

4 : 4 0 P M 4 A. That's correct.

4 : 4 0 P M 5 One other thing that you could get from the mud  
4 : 4 0 P M 6 loggers that the rig didn't have, but they could put it in  
4 : 4 0 P M 7 these screens, is the log. While we were doing the -- had the  
4 : 4 0 P M 8 tubes downhole -- we call them MWD-2s -- we were getting logs,  
4 : 4 0 P M 9 and we could see those up on the screen.

4 : 4 0 P M 10 Q. Okay. Could you get this information anywhere else on the  
4 : 4 0 P M 11 rig?

4 : 4 0 P M 12 A. Yes. You could get it anywhere it had those monitors: in  
4 : 4 0 P M 13 the company man's office, the rig clerk's office, third-party  
4 : 4 0 P M 14 office, OIM's office, toolpusher's office.

4 : 4 0 P M 15 Q. Now, the company man's office is your office; correct?

4 : 4 0 P M 16 A. That's correct.

4 : 4 0 P M 17 Q. And what deck was that?

4 : 4 1 P M 18 A. It was on the -- well, you had the main deck; and it would  
4 : 4 1 P M 19 be the first deck down below the main deck.

4 : 4 1 P M 20 Q. Okay. Now, let's look real quick at another view inside  
4 : 4 1 P M 21 the driller's shack.

4 : 4 1 P M 22 MR. WILLIAMS: Carl, if you could pull up 48110,  
4 : 4 1 P M 23 please.

4 : 4 1 P M 24 BY MR. WILLIAMS:

4 : 4 1 P M 25 Q. Now, this is a picture taken of the bulkhead behind the

## RONNIE W. SEPULVADO - DIRECT

4 : 4 1 P M 1 driller and the assistant driller's chairs; correct?

4 : 4 1 P M 2 A. Yes, sir.

4 : 4 1 P M 3 Q. And you see the -- you see the case back there with two

4 : 4 1 P M 4 glass doors?

4 : 4 1 P M 5 A. Correct.

4 : 4 1 P M 6 Q. What is that?

4 : 4 1 P M 7 A. The one on the left operates the BOP; the one on the right

4 : 4 1 P M 8 operates the diverter system.

4 : 4 1 P M 9 Q. Okay. And that's never locked, is it?

4 : 4 1 P M 10 A. No, sir, it's never locked.

4 : 4 1 P M 11 Q. Let's take -- let's take a closer look at that panel,

4 : 4 1 P M 12 TREX-48101.

4 : 4 2 P M 13 Okay. That's a close-up of the BOP control panel, is

4 : 4 2 P M 14 it not?

4 : 4 2 P M 15 A. That's correct.

4 : 4 2 P M 16 Q. And before we get into this, how many BOP control panels

4 : 4 2 P M 17 are on the *Deepwater Horizon*?

4 : 4 2 P M 18 A. You had one on the rig floor, one in the toolpusher's

4 : 4 2 P M 19 office, one up on the bridge, and the subsea office had one

4 : 4 2 P M 20 down in their control room.

4 : 4 2 P M 21 Q. Okay. And if we look at this picture, it's true that the

4 : 4 2 P M 22 various control features -- which are essentially backlit

4 : 4 2 P M 23 buttons; correct?

4 : 4 2 P M 24 A. Yes.

4 : 4 3 P M 25 Q. They're laid out vertically from the bottom to the top of

## RONNIE W. SEPULVADO - DIRECT

4 : 4 3 P M 1 the panel; correct?

4 : 4 3 P M 2 A. Correct.

4 : 4 3 P M 3 Q. And they're laid out in essentially the same way that the

4 : 4 3 P M 4 BOP and the LMRP are built and stacked on the floor of the sea;

4 : 4 3 P M 5 correct?

4 : 4 3 P M 6 A. Pretty much the same configuration, yes, sir.

4 : 4 3 P M 7 Q. So at the very bottom -- at the very bottom right here,

4 : 4 3 P M 8 you have a wellhead connector and you've got controls that

4 : 4 3 P M 9 operate that, that unlatch and latch that; correct?

4 : 4 3 P M 10 MR. WILLIAMS: Could you blow that up, Carl, if you

4 : 4 3 P M 11 can, a little bit?

4 : 4 3 P M 12 THE WITNESS: Yes, sir.

4 : 4 3 P M 13 BY MR. WILLIAMS:

4 : 4 3 P M 14 Q. And just above it, you've got a pipe ram. And on the

4 : 4 3 P M 15 *Deepwater Horizon*, that pipe ram was actually a test ram, was

4 : 4 3 P M 16 it not?

4 : 4 3 P M 17 A. Yes, sir. A couple of years ago, we inverted the ram to

4 : 4 4 P M 18 where you could -- we would hold pressure from the top.

4 : 4 4 P M 19 Q. Okay. And as you walk --

4 : 4 4 P M 20 MR. WILLIAMS: Carl, you can take the blowup down,

4 : 4 4 P M 21 please.

4 : 4 4 P M 22 BY MR. WILLIAMS:

4 : 4 4 P M 23 Q. As you work your way up from the bottom to the top, you've

4 : 4 4 P M 24 got -- this is the test ram here. You've got controls for pipe

4 : 4 4 P M 25 ram here, pipe ram here, your casing shear ram right here --



## RONNIE W. SEPULVADO - DIRECT

4 : 4 4 P M 1 we'll look at those a little bit carefully -- your blind shear  
4 : 4 4 P M 2 ram there, and then the LMRP unlatch or disconnect; correct?  
4 : 4 4 P M 3 A. Yes, sir.  
4 : 4 4 P M 4 Q. And it all just goes right up the stack. Each control  
4 : 4 4 P M 5 follows logically the way the BOP stack is built; correct?  
4 : 4 4 P M 6 A. Yes, sir.  
4 : 4 4 P M 7 Q. Okay. Now, do you ever -- do you ever touch the BOP  
4 : 4 4 P M 8 control panel?  
4 : 4 4 P M 9 A. No, sir.  
4 : 4 4 P M 10 Q. That's not your job, is it?  
4 : 4 5 P M 11 A. That's correct.  
4 : 4 5 P M 12 Q. In fact, you're not authorized to activate or operate any  
4 : 4 5 P M 13 controls on the BOP control panel; is that correct?  
4 : 4 5 P M 14 A. That's correct.  
4 : 4 5 P M 15 Q. And the same can be said of anything in the drill shack.  
4 : 4 5 P M 16 You don't sit in the driller's chair and provide inputs to the  
4 : 4 5 P M 17 drilling system while drilling, do you?  
4 : 4 5 P M 18 A. No, sir.  
4 : 4 5 P M 19 Q. It's a hard-and-fast rule by Transocean that company men,  
4 : 4 5 P M 20 third parties who are not employed by Transocean, cannot  
4 : 4 5 P M 21 operate or in any way tamper with or fool with any  
4 : 4 5 P M 22 transition -- I mean, Transocean equipment on that rig;  
4 : 4 5 P M 23 correct?  
4 : 4 5 P M 24 A. Yes, sir. And that's a good policy.  
4 : 4 5 P M 25 Q. Now, let's go back to T Rex-48110 real quick.

## RONNIE W. SEPULVADO - DIRECT

4 : 4 5 P M 1 Now, the BOP control panel -- subsurface control  
4 : 4 6 P M 2 panel -- or subsea control panel, excuse me -- they're covered  
4 : 4 6 P M 3 by glass doors, aren't they?  
4 : 4 6 P M 4 A. Yes, sir.  
4 : 4 6 P M 5 Q. And is it your understanding that the reason there are  
4 : 4 6 P M 6 doors there is because the atmosphere in that control panel box  
4 : 4 6 P M 7 is slightly or positively pressured?  
4 : 4 6 P M 8 A. Yes, sir, pressurized.  
4 : 4 6 P M 9 Q. And it's called a "purge" system; correct?  
4 : 4 6 P M 10 A. Correct.  
4 : 4 6 P M 11 Q. And how about the driller's shack itself? Isn't that  
4 : 4 6 P M 12 positively pressurized as well or have a purge system?  
4 : 4 6 P M 13 A. Yes, sir.  
4 : 4 6 P M 14 Q. And isn't it true that the BOP and subsea control panels  
4 : 4 6 P M 15 and the driller's shack have these purge systems as a safety  
4 : 4 6 P M 16 measure?  
4 : 4 6 P M 17 A. That's correct.  
4 : 4 6 P M 18 Q. And the reason there's positive pressure in that space is  
4 : 4 7 P M 19 to keep combustible gas, poisonous fumes, other types of bad  
4 : 4 7 P M 20 things in the atmosphere that may encroach on the drill floor  
4 : 4 7 P M 21 out of the drill shack; correct?  
4 : 4 7 P M 22 A. Yes, sir.  
4 : 4 7 P M 23 Q. And with respect to the subsea and BOP control panel,  
4 : 4 7 P M 24 that's positively pressurized because it's a potential ignition  
4 : 4 7 P M 25 source; correct?

## RONNIE W. SEPULVADO - DIRECT

4 : 4 7 P M 1 A. That's correct.

4 : 4 7 P M 2 Q. Now, I'm going to show you another general arrangement  
4 : 4 7 P M 3 drawing, the ones that are kind of difficult to see.

4 : 4 7 P M 4 MR. WILLIAMS: If you could pull up 48113, please,  
4 : 4 7 P M 5 Carl. And I'd like a closeup of that area of the rig right  
4 : 4 7 P M 6 there, please.

4 : 4 7 P M 7 BY MR. WILLIAMS:

4 : 4 7 P M 8 Q. On the arrangement drawing, it says this is the central  
4 : 4 7 P M 9 control room. Is that the bridge of the vessel right there?  
4 : 4 8 P M 10 Can you tell? The helivac is on top this.

4 : 4 8 P M 11 A. Okay. That's correct. If the heliport's on top of it, it  
4 : 4 8 P M 12 is the control room.

4 : 4 8 P M 13 Q. Okay. And is this -- would this be the same level that  
4 : 4 8 P M 14 you lived on -- or that your office was on?

4 : 4 8 P M 15 A. No, sir. That's the main deck.

4 : 4 8 P M 16 Are you talking about where you were pointing just  
4 : 4 8 P M 17 now down around the pipe rack?

4 : 4 8 P M 18 Q. Correct.

4 : 4 8 P M 19 A. That would be the main deck, and then you have to go up  
4 : 4 8 P M 20 the stairs to go to the bridge, and you'd have to go down the  
4 : 4 8 P M 21 stairs to go to my office.

4 : 4 8 P M 22 Q. So if you go down these stairs and walk over in this  
4 : 4 8 P M 23 direction, you would get to your office -- the office that you  
4 : 4 8 P M 24 used while you're on the rig?

4 : 4 8 P M 25 A. Yes, sir.

## RONNIE W. SEPULVADO - DIRECT

4 : 4 8 P M 1 Q. Now, in your office, you had the same types of displays  
4 : 4 8 P M 2 that they had -- maybe not as fancy, but you could access the  
4 : 4 9 P M 3 same data on a computer screen in your office that they could  
4 : 4 9 P M 4 in the drill shack; correct?

4 : 4 9 P M 5 A. Yes, sir. We had five or six monitors in our office and,  
4 : 4 9 P M 6 you know, we could -- we could go to a different -- different  
4 : 4 9 P M 7 stream. But I could see mostly what he was seeing up on the  
4 : 4 9 P M 8 drill floor.

4 : 4 9 P M 9 Q. Okay. Thanks.

4 : 4 9 P M 10 Is it accurate to say -- when you're on duty, you've  
4 : 4 9 P M 11 got a lot of things you've got to worry about, don't you?

4 : 4 9 P M 12 A. Yes, sir. We have a lot of meetings. I have equipment to  
4 : 4 9 P M 13 check on, people to get to the rig, get in from the rig, get  
4 : 4 9 P M 14 equipment in and out; and meetings to go to, safety meetings  
4 : 4 9 P M 15 and also operational meetings.

4 : 4 9 P M 16 Q. You're not just sitting in your cabin or in the drill  
4 : 4 9 P M 17 shack or anywhere else just looking at a computer screen and  
4 : 4 9 P M 18 watching the drilling operations in realtime, are you?

4 : 4 9 P M 19 A. No, sir. I don't monitor it at all unless somebody calls  
4 : 4 9 P M 20 and tells me something may not be right. Then I may want to go  
4 : 5 0 P M 21 and look at it.

4 : 5 0 P M 22 Q. Now, the Transocean *Deepwater Horizon* had a pretty large  
4 : 5 0 P M 23 crew on it, didn't it?

4 : 5 0 P M 24 A. Roughly 80 people most of the time, give or take 10.

4 : 5 0 P M 25 Q. 80 people total?

## RONNIE W. SEPULVADO - DIRECT

4:50 PM 1 A. Yes, for Transocean.

4:50 PM 2 Q. And that would include -- just for Transocean?

4:50 PM 3 A. That would probably include their service contractors too,  
4 because they had a catering crew. And sometimes they would  
4:50 PM 5 have painting going on on the rig, sandblasting, and they'd  
4:50 PM 6 have extra people.

4:50 PM 7 But, yes, about 80 Transocean people.

4:50 PM 8 Q. 80 Transocean people and they're have subcontractors out  
4:50 PM 9 there, as well, correct --

4:50 PM 10 A. Correct.

4:50 PM 11 Q. -- like M-I SWACO has?

4:50 PM 12 A. Halliburton. Yeah, Halliburton.

4:50 PM 13 Q. Halliburton, Sperry-Sun, that type of thing, Weatherford?

4:50 PM 14 A. Correct.

4:50 PM 15 Q. While the *Deepwater Horizon* was at sea, whether it was  
4:50 PM 16 drilling or going from place to place, different parts of the  
4:51 PM 17 crew were obviously involved in different activities; correct?

4:51 PM 18 A. Yes, sir.

4:51 PM 19 Q. Part of the crew was involved in vessel maintenance, you  
4:51 PM 20 know, including deck maintenance, electronic maintenance,  
4:51 PM 21 machinery stuff, that kind of thing; correct?

4:51 PM 22 A. Correct. The marine crew would be in charge of moving the  
4:51 PM 23 rig.

4:51 PM 24 Q. Okay. So they had -- there are two -- basically two  
4:51 PM 25 different Transocean -- or the Transocean crew was involved in

## RONNIE W. SEPULVADO - DIRECT

4 : 5 1 P M 1 marine activities. There was a marine crew or a bridge crew,  
4 : 5 1 P M 2 and there was a drilling crew; correct?

4 : 5 1 P M 3 A. Yes, sir.

4 : 5 1 P M 4 Q. Now, the marine crew did most of its work on the bridge of  
4 : 5 1 P M 5 the vessel?

4 : 5 1 P M 6 A. That's true. They had work they did downstairs, too, in  
4 : 5 1 P M 7 the -- in some of the ballast tanks, if they had to go down  
4 : 5 1 P M 8 there. Some of the -- you know, they're in charge of keeping  
4 : 5 1 P M 9 the rig on location. And there was -- they were not only  
4 : 5 2 P M 10 working in the ballast -- on the bridge, they were working  
4 : 5 2 P M 11 other places on the rig, too.

4 : 5 2 P M 12 Q. Okay. Well, they had A-B seamen, bosuns?

4 : 5 2 P M 13 A. Yes, sir.

4 : 5 2 P M 14 Q. And sometimes they would do work on the drill floor,  
4 : 5 2 P M 15 cleaning up, chipping paint, that kind of thing?

4 : 5 2 P M 16 A. Yes, sir.

4 : 5 2 P M 17 Q. But they were on -- a dedicated segment of the Transocean  
4 : 5 2 P M 18 crew was dedicated to marine operations; correct?

4 : 5 2 P M 19 A. Yes, sir.

4 : 5 2 P M 20 Q. Now, the *Deepwater Horizon*, as you testified, has never  
4 : 5 2 P M 21 been to the shipyard. It's been at sea working since  
4 : 5 2 P M 22 essentially it arrived in the Gulf of Mexico; is that correct?

4 : 5 2 P M 23 A. That's correct. It had never been in the shipyard.

4 : 5 2 P M 24 Q. And while -- whether it's going from location to location,  
4 : 5 2 P M 25 driving around anywhere in the Gulf, or maintaining

## RONNIE W. SEPULVADO - DIRECT

4 : 5 2 P M 1 station-keeping while it's drilling a well, that marine crew is  
4 : 5 2 P M 2 on duty 24/7, is it not?  
4 : 5 3 P M 3 A. That's correct.  
4 : 5 3 P M 4 Q. I'm talking about the master, chief mates, second mates,  
4 : 5 3 P M 5 DPOs; all those people work 24/7 regardless of what the vessel  
4 : 5 3 P M 6 is doing?  
4 : 5 3 P M 7 A. That's correct.  
4 : 5 3 P M 8 Q. And while it's drilling, even, that vessel is moving back  
4 : 5 3 P M 9 and forth, is it not?  
4 : 5 3 P M 10 A. Keeping it on station, yes, sir. They move around a  
4 : 5 3 P M 11 little bit.  
4 : 5 3 P M 12 Q. It's keeping on station. It's under power, compensating  
4 : 5 3 P M 13 for currents, winds, wave action. Whatever's affecting the  
4 : 5 3 P M 14 vessel, it has to move to counteract that movement to stay  
4 : 5 3 P M 15 generally right on top of that well, on top of the wellhead  
4 : 5 3 P M 16 while it's drilling; correct?  
4 : 5 3 P M 17 A. Yes, sir, that's right.  
4 : 5 3 P M 18 Q. If it doesn't, the results can be catastrophic,  
4 : 5 3 P M 19 potentially?  
4 : 5 3 P M 20 A. Yes, sir.  
4 : 5 3 P M 21 Q. Now, while the vessel is moving from location to location,  
4 : 5 3 P M 22 if it's going it take five or six days, for instance, to go,  
4 : 5 3 P M 23 let's say, from Macondo to Nile or any other location to  
4 : 5 4 P M 24 spud-in and start drilling a new well, do the well site leaders  
4 : 5 4 P M 25 stay on the vessel?

## RONNIE W. SEPULVADO - DIRECT

4 : 5 4 P M 1 A. Yes, sir.

4 : 5 4 P M 2 Q. Is the drill shack manned 24/7 while the vessel is moving  
4 : 5 4 P M 3 from location to location? Not drilling.

4 : 5 4 P M 4 A. Not -- sometimes there wouldn't be anybody in the drill  
4 : 5 4 P M 5 shack when we were moving. They'd be outside doing other  
4 : 5 4 P M 6 things.

4 : 5 4 P M 7 Q. Okay. But nobody would be in there controlling the  
4 : 5 4 P M 8 drilling function of the rig or anything like that?

4 : 5 4 P M 9 A. Not, like, when, you know, lights and things whenever when  
4 : 5 4 P M 10 we were drilling.

4 : 5 4 P M 11 Q. I want to ask you a few questions -- technical questions,  
4 : 5 4 P M 12 I think, about the BOP.

4 : 5 4 P M 13 The BOP on that rig is owned by Transocean, isn't it?

4 : 5 4 P M 14 A. That's correct.

4 : 5 4 P M 15 Q. And Transocean's responsible for the maintenance of that  
4 : 5 4 P M 16 BOP, isn't it?

4 : 5 4 P M 17 A. Correct.

4 : 5 5 P M 18 Q. The BOP stays with the vessel at all times, doesn't it?

4 : 5 5 P M 19 A. Yes, sir.

4 : 5 5 P M 20 Q. And would you agree with me that it's a vital component of  
4 : 5 5 P M 21 the vessel?

4 : 5 5 P M 22 A. One of the vital components, yes, sir.

4 : 5 5 P M 23 Q. Well, the *Deepwater Horizon* couldn't do its job without  
4 : 5 5 P M 24 the BOP, could it?

4 : 5 5 P M 25 A. That's true.



## RONNIE W. SEPULVADO - DIRECT

4 : 5 5 P M 1 Q. And when a well is completed, the BOP goes with the  
4 : 5 5 P M 2 Transocean *Deepwater Horizon* to the next location; isn't that  
4 : 5 5 P M 3 right?  
4 : 5 5 P M 4 A. Yes, sir.  
4 : 5 5 P M 5 Q. Now, when there's a well control event -- or if there is a  
4 : 5 5 P M 6 well control event -- and I'm talking about your time and your  
4 : 5 6 P M 7 experience on the *Deepwater Horizon*. If there were a well  
4 : 5 6 P M 8 control event, the *Deepwater Horizon's* drilling crew handles  
4 : 5 6 P M 9 the response to that event; isn't that true?  
4 : 5 6 P M 10 A. That's correct.  
4 : 5 6 P M 11 Q. That's their job; correct?  
4 : 5 6 P M 12 A. Yes, sir.  
4 : 5 6 P M 13 Q. Now, Mr. Randy Ezell testified just before you did. I  
4 : 5 6 P M 14 don't know if you saw him in the hall.  
4 : 5 6 P M 15 You've known Mr. Ezell for a long time, haven't you?  
4 : 5 6 P M 16 A. He was on the rig when they put me on the rig.  
4 : 5 6 P M 17 Q. Okay. He's a good and competent senior toolpusher, isn't  
4 : 5 6 P M 18 he?  
4 : 5 6 P M 19 A. I thought he was.  
4 : 5 6 P M 20 Q. Mr. Ezell, when he was testifying, stated that when a  
4 : 5 6 P M 21 negative pressure test is conducted and the well is  
4 : 5 6 P M 22 underbalanced, the drill crew must exercise a high degree of  
4 : 5 6 P M 23 vigilance in monitoring the well.  
4 : 5 6 P M 24 You'd agree with Mr. Ezell as a well site leader,  
4 : 5 6 P M 25 wouldn't you?

## RONNIE W. SEPULVADO - DIRECT

4 : 5 6 P M 1 A. Well, you know, we do a lot of testing on the wells,  
4 : 5 7 P M 2 whether it's negative test, positive test or whatever, you  
4 : 5 7 P M 3 know, they're all important tests; and every one of them should  
4 : 5 7 P M 4 be monitored, regardless -- I mean, a negative test is a  
4 : 5 7 P M 5 negative test. Like a pressure test, you know, you just -- you  
4 : 5 7 P M 6 have to monitor any kind of test.

4 : 5 7 P M 7 Q. You don't need just to monitor them; you need to monitor  
4 : 5 7 P M 8 them with a high degree of vigilance. You really have it pay  
4 : 5 7 P M 9 attention to them, don't you?

4 : 5 7 P M 10 A. Well, you should pay attention to every test.

4 : 5 7 P M 11 Q. And you would agree with me that a negative pressure test  
4 : 5 7 P M 12 is a safety-critical test?

4 : 5 7 P M 13 A. It's critical like any other test.

4 : 5 7 P M 14 Q. And it's critical that it be executed correctly. Is that  
4 : 5 7 P M 15 I true statement?

4 : 5 7 P M 16 A. Yes, sir.

4 : 5 7 P M 17 Q. It's really the most important or critical task that's  
4 : 5 7 P M 18 completed before securing the lockdown so you can abandon your  
4 : 5 7 P M 19 well, isn't it?

4 : 5 7 P M 20 A. Yeah. It's one of the critical tests, yes, sir.

4 : 5 8 P M 21 Q. Mr. Ezell -- I'm sorry, Mr. Sepulvado --

4 : 5 8 P M 22 A. That's okay.

4 : 5 8 P M 23 MR. WILLIAMS: I'm sorry, Judge, I'm tired.

4 : 5 8 P M 24 BY MR. WILLIAMS:

4 : 5 8 P M 25 Q. You would agree that it's critical that a kick, a well

## RONNIE W. SEPULVADO - DIRECT

4 : 5 8 P M 1 kick, be recognized and dealt with immediately, wouldn't you?

4 : 5 8 P M 2 A. As soon as possible, yes, sir.

4 : 5 8 P M 3 Q. And that's the drill crew's primary responsibility, isn't

4 : 5 8 P M 4 it?

4 : 5 8 P M 5 A. That's correct.

4 : 5 8 P M 6 Q. On your last hitch on the *Deepwater Horizon*, who did you

4 : 5 8 P M 7 consider to be the person in charge, the PIC, on that rig?

4 : 5 8 P M 8 A. Jimmy Harrell.

4 : 5 8 P M 9 Q. Have you ever heard of the term bladder effect"?

4 : 5 8 P M 10 A. No, sir.

4 : 5 8 P M 11 Q. Have you ever heard of anybody at BP, any other well site

4 : 5 8 P M 12 leader or anybody back on the beach, wells team leaders or any

4 : 5 8 P M 13 of the engineers talk about bladder effect or a phenomenon

4 : 5 8 P M 14 called annular compression?

4 : 5 9 P M 15 A. No, I've never heard of that before the incident. I heard

4 : 5 9 P M 16 it then, but before that, no.

4 : 5 9 P M 17 Q. Now, when you were on the rig and a negative pressure test

4 : 5 9 P M 18 was done, did you have a standardized, written-out protocol to

4 : 5 9 P M 19 do a negative pressure test?

4 : 5 9 P M 20 A. Yes, sir, I have a procedure that I used.

4 : 5 9 P M 21 Q. And it was -- and that procedure was something that you

4 : 5 9 P M 22 developed yourself over the course of years; correct?

4 : 5 9 P M 23 A. Yes, sir. I've been doing negative tests over the last

4 : 5 9 P M 24 15 years.

4 : 5 9 P M 25 Q. That wasn't really a BP negative pressure test, was it?

## RONNIE W. SEPULVADO - DIRECT

4:59 PM 1 It was more of a "Ronnie Sepulvado negative pressure test"?

4:59 PM 2 A. Yes, sir. It's the one that I was comfortable with and

4:59 PM 3 the one that I used.

4:59 PM 4 Q. Okay. Did Mr. Kaluza or Mr. Vidrine have a negative

4:59 PM 5 pressure test protocol or checklist that they used that you

4:59 PM 6 know of?

4:59 PM 7 A. I don't know.

4:59 PM 8 Q. How about any of the drillers or the toolpushers on the

4:59 PM 9 *Deepwater Horizon*?

5:00 PM 10 A. I never saw any tests that they came up with step-by-step.

5:00 PM 11 We took what I had, and we got the mud engineer involved in it,

5:00 PM 12 because he knows all -- you know, it's his fluid, so he needs

5:00 PM 13 to know where the water and the mud's at.

5:00 PM 14 Before every negative test, we put down step by step

5:00 PM 15 what we're going to be doing, how many strokes we're going to

5:00 PM 16 be pumping here and there. And we'd give that to the driller

5:00 PM 17 and the toolpushers and let them look at it and make sure

5:00 PM 18 everybody agreed what we were going to be doing once he

5:00 PM 19 started.

5:00 PM 20 And once the mud engineer and myself, the driller and

5:00 PM 21 the toolpusher got finished with it, then we did a

5:00 PM 22 task-specific THINK drill on it to involve the rest of the crew

5:00 PM 23 so everybody would be familiar with what we were doing.

5:00 PM 24 Q. Okay. And during that whole process that you just

5:00 PM 25 described, you had participated in that; correct?

## RONNIE W. SEPULVADO - CROSS

5:01PM 1 A. Yes, sir.

5:01PM 2 Q. As would the driller and the mud loggers --

5:01PM 3 A. Mud engineer.

5:01PM 4 Q. -- mud engineer and everyone else; right?

5:01PM 5 A. Yeah. Everybody involved.

5:01PM 6 MR. WILLIAMS: Those are all the questions I have for  
5:01PM 7 you right now. Thank you very much.

5:01PM 8 THE COURT: Anything from the United States?

5:01PM 9 MR. UNDERHILL: Yes, Your Honor.

5:01PM 10 CROSS-EXAMINATION

5:02PM 11 BY MR. UNDERHILL:

5:02PM 12 Q. Good afternoon, Mr. Sepulvado. We've met before, Mike  
5:02PM 13 Underhill on behalf of the United States. I'm going to be even  
5:02PM 14 way shorter than my colleague, Mr. Williams, was.

5:02PM 15 I think you've touched upon it in the last series of  
5:02PM 16 questions. You mentioned that -- when you performed tests, the  
5:02PM 17 negative pressure test on the *Deepwater Horizon*, that you  
5:02PM 18 would -- either you or you'd have the crew calculate the pump  
5:02PM 19 strokes. Is that what you said?

5:02PM 20 A. Yes, sir.

5:02PM 21 Q. And is that what you're talking about, you're trying to  
5:02PM 22 establish the bleed-back volumes? Is that part of what you're  
5:02PM 23 doing in this process?

5:02PM 24 A. No, sir, it's the pipe volume. What we normally do is  
5:02PM 25 pump water down the drill pipe, so you'd need to know that pipe

## RONNIE W. SEPULVADO - CROSS

5 : 0 2 P M 1 volume so you can convert it into strokes so you know when you  
5 : 0 2 P M 2 got water coming around the outside. We always figured the  
5 : 0 2 P M 3 strokes from wherever the end of pipe was until we got to the  
5 : 0 2 P M 4 water above the BOP stack. And we'd come up with those strokes  
5 : 0 3 P M 5 to know where that water was when we got finished pumping, to  
5 : 0 3 P M 6 make sure it was above the BOP stack. And to pump the choke  
5 : 0 3 P M 7 and kill line out is the same thing. You know, we'd calculate  
5 : 0 3 P M 8 the strokes.

5 : 0 3 P M 9 But it's not going to tell you what you're going to  
5 : 0 3 P M 10 bleed back, but it will give you a differential pressure when  
5 : 0 3 P M 11 you shut down. If you displace 14-pound mud with 8/6 water all  
5 : 0 3 P M 12 the way around the BOP stack, shut that annular to isolate the  
5 : 0 3 P M 13 heavy mud above it from the bottom, then you're going to have  
5 : 0 3 P M 14 roughly 20-something-hundred pounds of differential pressure.  
5 : 0 3 P M 15 Then you bleed that pressure off.

5 : 0 3 P M 16 Q. And you very kindly demonstrated my ignorance of drilling  
5 : 0 3 P M 17 processes.

5 : 0 3 P M 18 Sticking with what you just said, the procedure you  
5 : 0 3 P M 19 did describe that you said is not a bleed-back volume process,  
5 : 0 3 P M 20 is all that you described done in order to provide both the  
5 : 0 3 P M 21 well site leader and the drilling crew information to be able  
5 : 0 3 P M 22 to know and assist them in the process of determining whether  
5 : 0 4 P M 23 they performed a successful or unsuccessful negative pressure  
5 : 0 4 P M 24 test?

5 : 0 4 P M 25 A. Yes, sir. You can estimate the amount of fluid you should

## RONNIE W. SEPULVADO - CROSS

5 : 0 4 P M 1 get back from compressibility. And water doesn't compress as  
5 : 0 4 P M 2 much as the synthetic mud. As a matter of fact, water doesn't  
5 : 0 4 P M 3 hardly compress at all.

5 : 0 4 P M 4 So when you've got 2300 pounds of pressure trapped on  
5 : 0 4 P M 5 the drill pipe, you're going to get a barrel or so of water  
5 : 0 4 P M 6 back when you bleed that pressure off. But then that's all you  
5 : 0 4 P M 7 should get back. Once that pressure is bled off, you shouldn't  
5 : 0 4 P M 8 get any water back .

5 : 0 4 P M 9 Q. Gotcha.

5 : 0 4 P M 10 What I should have asked you: Was it your practice  
5 : 0 4 P M 11 to calculate the bleed-back volume before you performed the  
5 : 0 4 P M 12 negative pressure test?

5 : 0 4 P M 13 A. Yes, sir.

5 : 0 4 P M 14 Q. And why did you do that? What was your purpose?

5 : 0 4 P M 15 A. Because I wanted to know if, when I got that certain  
5 : 0 4 P M 16 amount of volume back, that that well should have quit flowing.

5 : 0 4 P M 17 Q. And would it be to the closest barrel, two barrels, three  
5 : 0 5 P M 18 barrels? You tell me.

5 : 0 5 P M 19 A. It may vary sometimes, but normally one or two barrels.

5 : 0 5 P M 20 Q. And if you got significantly more bleedback than you  
5 : 0 5 P M 21 calculated you should get, what does that indicate, if  
5 : 0 5 P M 22 anything?

5 : 0 5 P M 23 A. Well, if you get a lot more than you should get, then  
5 : 0 5 P M 24 you're getting fluid from somewhere else. It could be from the  
5 : 0 5 P M 25 well; it could be something leaking on the BOP stack and making

## RONNIE W. SEPULVADO - CROSS

5 : 0 5 P M 1 that mud yield to back up through the drill pipe, or it could  
5 : 0 5 P M 2 be coming from the well .

5 : 0 5 P M 3 Q. And as to the latter, it could be coming from the well?

5 : 0 5 P M 4 A. Yes.

5 : 0 5 P M 5 Q. Not necessarily, but it could be.

5 : 0 5 P M 6 A. But it could be, yes, sir.

5 : 0 5 P M 7 Q. And given the fact, as I understand what you just said,  
5 : 0 5 P M 8 that it might be from the well, and you've described other  
5 : 0 5 P M 9 possibilities, would that be something that when you performed  
5 : 0 5 P M 10 the well site leader function, you would have felt obligated to  
5 : 0 5 P M 11 try to investigate to figure out if it's from the well or some  
5 : 0 5 P M 12 other reason?

5 : 0 5 P M 13 A. Yeah. The driller should have known -- if it was leaking  
5 : 0 6 P M 14 past the BOP stack, the driller should know pretty quick.

5 : 0 6 P M 15 Because what we do is we put a trip tank on that  
5 : 0 6 P M 16 riser that keeps the backside of the hole filled, and if that  
5 : 0 6 P M 17 mud starts to follow and going past the BOP stack, then this  
5 : 0 6 P M 18 mud out of your trip tank starts filling the hole. And he's  
5 : 0 6 P M 19 watching that trip tank the whole time.

5 : 0 6 P M 20 Q. Thank you.

5 : 0 6 P M 21 The last question on the bleedback: That process  
5 : 0 6 P M 22 you've kindly described, is that performed in order to allow  
5 : 0 6 P M 23 the well site leader and the drillers and others involved in  
5 : 0 6 P M 24 the process to assist them in determining whether they have a  
5 : 0 6 P M 25 negative pressure test that's successful or unsuccessful? Is



## RONNIE W. SEPULVADO - CROSS

5:06 PM 1 it just one more method -- is what I'm getting at -- to try to  
5:06 PM 2 assist them to make that final call?

5:06 PM 3 A. Yes, sir. If it's a successful negative test, once you  
5:06 PM 4 bleed that pressure off, or whatever amount of water that's  
5:06 PM 5 compressing that compression in your pipe to make that  
5:06 PM 6 pressure, you know, then you shouldn't get anything else.

5:07 PM 7 Like I say, those will vary. Those volumes will vary  
5:07 PM 8 because it depends on how much volume you're talking about and  
5:07 PM 9 how much differential pressure you've got. But yeah, you know,  
5:07 PM 10 if you calculate how much it should be, and if you start  
5:07 PM 11 getting more than that and nothing's coming from around your  
5:07 PM 12 BOP stack or anywhere else, yeah, that will help you determine  
5:07 PM 13 if it's coming from the well or not.

5:07 PM 14 Q. Thank you. Home stretch, coming around the back turn.  
5:07 PM 15 Home stretch, at least with my questions, sir.

5:07 PM 16 But again, I'm not talking about anything that  
5:07 PM 17 happened on the *Deepwater Horizon* on the 20th, because you  
5:07 PM 18 weren't there; correct?

5:07 PM 19 A. Right. I wasn't there.

5:07 PM 20 Q. Good enough.

5:07 PM 21 I'm only talking about your practice as a BP well  
5:07 PM 22 site leader aboard the *Deepwater Horizon*.

5:07 PM 23 Before you would allow the riser to be displaced with  
5:07 PM 24 seawater as a part of the temporary abandonment process, and  
5:08 PM 25 after the cementing of the production casing, was it your

## RONNIE W. SEPULVADO - CROSS

5:08 PM 1 practice to want to make sure that either you or other BP  
5:08 PM 2 engineers ashore had reviewed the compressive strength test for  
5:08 PM 3 the cement to be pumped in the production casing?

5:08 PM 4 A. What I look for in testing cement is pumpability time.  
5:08 PM 5 You've got the setting time on cement. So you figure your time  
5:08 PM 6 that it's going to take -- how long it's going to take you to  
5:08 PM 7 mix the cement, how long it's going to take you to get it in  
5:08 PM 8 place. And you want to make sure you don't run out of pumping  
5:08 PM 9 time before you get that cement in place. So that's what I  
5:08 PM 10 look for from a lab test.

5:08 PM 11 As far as compressibility, you know, I don't know  
5:08 PM 12 anything about compressibility. All I can do is look at tests  
5:08 PM 13 and see that 12 hours, you you may have one value; 24 hours,  
5:08 PM 14 you may have a higher value. And that's about all I know about  
5:08 PM 15 compressibility tests.

5:08 PM 16 Q. I'll demonstrate I've learned something in the last two  
5:09 PM 17 and a half years. Is there a term called WOC or "waiting on  
5:09 PM 18 cement"?

5:09 PM 19 A. Yes, sir.

5:09 PM 20 Q. And in your words, could you briefly describe it for the  
5:09 PM 21 Court, please.

5:09 PM 22 A. After you get your cement in place and you stop pumping,  
5:09 PM 23 you give that cement time to set up, so you wait on the cement.

5:09 PM 24 Q. Your practice as a well site leader aboard the rig, would  
5:09 PM 25 you have wanted to perform a negative pressure test and then

## RONNIE W. SEPULVADO - CROSS

5 : 0 9 P M 1 actually proceed to displacement if you didn't know whether the  
5 : 0 9 P M 2 cement was -- I guess the layman's term would be "hard enough"  
5 : 0 9 P M 3 to do its job."

5 : 0 9 P M 4 A. Well, since I don't know that -- I'm saying, I'm not an  
5 : 0 9 P M 5 expert in compressibilities but, you know, I depend on somebody  
5 : 0 9 P M 6 else to tell me that, like, you know, the Halliburton in-house  
5 : 0 9 P M 7 guy or the BP engineer or somebody that's familiar with that,  
5 : 0 9 P M 8 to say, "Well, we don't want to do this negative test because  
5 : 0 9 P M 9 we waited on cement so long." And that's what I'd do.

5 : 1 0 P M 10 Q. Sometimes common sense meets with technical stuff. Is  
5 : 1 0 P M 11 this basically a commonsense thing, that you wouldn't -- just  
5 : 1 0 P M 12 as a well site leader, you wouldn't want to displace and  
5 : 1 0 P M 13 underbalance the well until you felt comfortable, either  
5 : 1 0 P M 14 through your own endeavors or relying upon Halliburton or  
5 : 1 0 P M 15 relying upon BP engineers, that you wouldn't want to do that  
5 : 1 0 P M 16 until the cement was going to act as an effective barrier to  
5 : 1 0 P M 17 hydrocarbons down at the bottom of the hole; isn't that right?

5 : 1 0 P M 18 A. Yeah, I'd reach out to somebody else to give me that  
5 : 1 0 P M 19 information. You know, I'd ask them, you know, "What kind of  
5 : 1 0 P M 20 compressive strength do we need on the cement before we do this  
5 : 1 0 P M 21 negative test?"

5 : 1 0 P M 22 MR. UNDERHILL: That's all I have. Thank you very  
5 : 1 0 P M 23 much, sir.

5 : 1 0 P M 24 THE COURT: Any questions from Alabama?

5 : 1 0 P M 25 MR. MAZE: No questions, Your Honor.

## RONNIE W. SEPULVADO - CROSS

5 : 10 PM 1 THE COURT: Louisiana?

5 : 10 PM 2 MR. KRAUS: Yes, just a couple, Your Honor.

5 : 11 PM 3 CROSS-EXAMINATION

5 : 11 PM 4 BY MR. KRAUS:

5 : 11 PM 5 Q. Good afternoon, sir. Doug Kraus on behalf of the State of

5 : 11 PM 6 Louisiana.

5 : 11 PM 7 While you were drilling the Macondo well, you were

5 : 11 PM 8 relying upon drilling engineers back onshore for drilling plans

5 : 11 PM 9 and procedures, weren't you?

5 : 11 PM 10 A. That's correct.

5 : 11 PM 11 Q. Were there ever instances in which you were drilling ahead

5 : 11 PM 12 of the pace in which the plans and procedures were coming to

5 : 11 PM 13 you on the rig?

5 : 11 PM 14 A. No, sir.

5 : 11 PM 15 MR. KRAUS: Could we get trial Exhibit 529?

5 : 11 PM 16 BY MR. KRAUS:

5 : 11 PM 17 Q. This is -- if you look at the bottom e-mail, it's an

5 : 12 PM 18 e-mail that your brother authored to Brian Morel. Who is Brian

5 : 12 PM 19 Morel?

5 : 12 PM 20 A. He was the junior engineer on the Macondo well for BP.

5 : 12 PM 21 Q. Okay and this e-mail is dated April 12th. You were on the

5 : 12 PM 22 rig at that time, weren't you?

5 : 12 PM 23 A. Yes, sir.

5 : 12 PM 24 Q. And tell me how you worked in conjunction with your

5 : 12 PM 25 brother.

## RONNIE W. SEPULVADO - CROSS

5 : 12 PM 1 A. We overlapped a week. We worked opposite each other while  
5 : 12 PM 2 we were on the rig on that shift.

5 : 12 PM 3 These plans you're talking about, you're asking about  
5 : 12 PM 4 drilling the well, did we get plans behind drilling the well.  
5 : 12 PM 5 The well is drilled when this comes about.

5 : 12 PM 6 Q. Okay. So your brother is asking Mr. Morel: "Brian, we  
5 : 12 PM 7 need procedures for running casing, cementing, T & A work" --  
5 : 12 PM 8 what is that?

5 : 12 PM 9 A. That's when you're going to T & A the well.

5 : 12 PM 10 Q. What is T & A's the well?

5 : 13 PM 11 A. Temporary abandonment.

5 : 13 PM 12 Q. Okay.

5 : 13 PM 13 "We are in the dark and nearing the end of logging  
5 : 13 PM 14 operations."

5 : 13 PM 15 Did I read that correctly?

5 : 13 PM 16 A. Yes, sir.

5 : 13 PM 17 Q. Mr. Morel says he'll reply in the morning; correct?

5 : 13 PM 18 A. That's right.

5 : 13 PM 19 Q. Is that correct?

5 : 13 PM 20 A. Correct.

5 : 13 PM 21 **MR. KRAUS:** Could we turn to Exhibit 533?

5 : 13 PM 22 **BY MR. KRAUS:**

5 : 13 PM 23 Q. I think, if you look at the bottom of that e-mail,  
5 : 13 PM 24 Mr. Morel replies on the same day: "This isn't perfect yet,  
5 : 13 PM 25 but I wanted to get everyone a copy so we can ensure all the

## RONNIE W. SEPULVADO - CROSS

5 : 13 PM 1 equipment required for our upcoming operations is offshore in  
5 : 13 PM 2 time. Please let me know if you have any questions or  
5 : 13 PM 3 suggestions how to improve the procedure."

5 : 13 PM 4 And then you reply in the e-mail above that: "We  
5 : 13 PM 5 need to do a negative test before displacing 14-pound mud to  
5 : 13 PM 6 seawater, will have to pick a time to lay down some drill pipe.

5 : 13 PM 7 Did I read that correctly?

5 : 14 PM 8 A. Yes, sir.

5 : 14 PM 9 Q. So Mr. Morel provides a procedure back to you the same day  
5 : 14 PM 10 and it does not include a negative pressure test; is that  
5 : 14 PM 11 correct?

5 : 14 PM 12 A. That's correct.

5 : 14 PM 13 Q. Would you expect someone in Mr. Morel's position to know  
5 : 14 PM 14 to include a negative pressure test in a temporary abandonment  
5 : 14 PM 15 procedure?

5 : 14 PM 16 A. Well, this is a draft procedure. It happens all the time  
5 : 14 PM 17 on draft procedures, you know. That's the reason they send  
5 : 14 PM 18 them out. You know, we look at them, we send them information  
5 : 14 PM 19 back. If it's not in there, they send it back. We may go  
5 : 14 PM 20 through four or five of these before we get a final.

5 : 14 PM 21 Q. Excuse me. I didn't mean to talk over you.

5 : 14 PM 22 Do drilling engineers onshore forget to include  
5 : 14 PM 23 negative pressure tests in temporary abandonment procedures all  
5 : 14 PM 24 the time?

5 : 14 PM 25 A. Not all the time. Sometimes -- very seldom you'll find

## RONNIE W. SEPULVADO - CROSS

5 : 14 PM 1 one that leaves some steps out, though. It may not be negative  
5 : 14 PM 2 tests, but it will be something else.

5 : 14 PM 3 **MR. KRAUS:** Could we pull up Trial Exhibit 537.

5 : 15 PM 4 **BY MR. KRAUS:**

5 : 15 PM 5 **Q.** In the bottom e-mail, Brian Morel e-mails James Wilson and  
5 : 15 PM 6 yourself a note on April 14th, 2010, entitled "Forward Ops":

5 : 15 PM 7 "Nick, below are plans forward. Could you please  
5 : 15 PM 8 update the five-day planner to reflect. I will send out  
5 : 15 PM 9 detailed procedures shortly.

5 : 15 PM 10 "Ronnie, anything you see that we should do  
5 : 15 PM 11 differently based on these limited details?"

5 : 15 PM 12 Did I read that correctly?

5 : 15 PM 13 **A.** Yes, sir.

5 : 15 PM 14 **Q.** And you reply: "Will we have to test casing before  
5 : 15 PM 15 setting surface cement plug?"

5 : 15 PM 16 What are you referring to there?

5 : 15 PM 17 **A.** Normally, when we're setting a string of pipe, we have to  
5 : 15 PM 18 do an internal test.

5 : 15 PM 19 **Q.** Is that called a positive pressure test?

5 : 15 PM 20 **A.** Yes, sir, positive pressure test.

5 : 15 PM 21 **Q.** So in this instance when Mr. Morel sends out forward ops,  
5 : 16 PM 22 he forgets the positive pressure test?

5 : 16 PM 23 **A.** Yes, sir.

5 : 16 PM 24 **MR. KRAUS:** I think those are all the questions that  
5 : 16 PM 25 I have. Thank you very much.

## RONNIE SEPULVADO - DIRECT

5 : 16 PM 1 THE COURT: All right. Transocean?

5 : 16 PM 2 MR. ROBERTS: Your Honor, I believe it's BP's  
5 : 16 PM 3 witness, and they're going next.

5 : 16 PM 4 THE COURT: Oh, okay. Go ahead.

5 : 16 PM 5 MS. KARIS: Thank you, Your Honor.

5 : 17 PM 6 Hariklia Karis for BP, conducting the direct  
5 : 17 PM 7 examination of Mr. Sepulvado. I put the mic on, and if it's  
5 : 17 PM 8 too loud or too -- too high or too low, if you could please let  
5 : 17 PM 9 me know. Thank you.

5 : 17 PM 10 DIRECT EXAMINATION

5 : 17 PM 11 BY MS. KARIS:

5 : 17 PM 12 Q. Mr. Sepulvado, I want to back up a little bit. We're  
5 : 17 PM 13 going to come to that test procedure that we just saw. But  
5 : 17 PM 14 before we do that, I want to talk a little bit about your  
5 : 17 PM 15 background beyond what Mr. Conrad covered with you.

5 : 17 PM 16 Is it correct that at the time of this incident, you  
5 : 17 PM 17 had been a well site leader for almost -- or over 20 years?

5 : 17 PM 18 A. Yes, ma'am.

5 : 17 PM 19 Q. All right. And 11 of those years had been with BP and, in  
5 : 17 PM 20 fact, of those 11 years, you had spent eight on the *Deepwater*  
5 : 17 PM 21 *Horizon*?

5 : 17 PM 22 A. Yes, ma'am. It was 10 years and, yeah, almost eight on  
5 : 17 PM 23 the *Deepwater Horizon*.

5 : 17 PM 24 Q. Okay. When you came to BP as a result of, you said, the  
5 : 18 PM 25 merger with ARCO, had you had training as a well site leader?



## RONNIE SEPULVADO - DIRECT

5 : 18 PM 1 A. I did my training with Pennzoil, and I went to work for  
5 : 18 PM 2 them in 1977 as a well site leader. And the rest of it has  
5 : 18 PM 3 been through going to schools, CBTs, and experience.

5 : 18 PM 4 Q. Okay. So you already came as a trained well site leader.  
5 : 18 PM 5 Is that fair to say?

5 : 18 PM 6 A. Yes, I did.

5 : 18 PM 7 Q. And then in the course of the 11 years -- 10 years that  
5 : 18 PM 8 you were with BP, did you then continue to go through training  
5 : 18 PM 9 with BP?

5 : 18 PM 10 A. Yes, ma'am, I did.

5 : 18 PM 11 MS. KARIS: Okay. And if we can pull up Exhibit 557,  
5 : 18 PM 12 please.

5 : 18 PM 13 BY MS. KARIS:

5 : 18 PM 14 Q. Mr. Sepulvado, if we can just leaf through it, multiple  
5 : 18 PM 15 pages. Is this a list of the various training programs that  
5 : 19 PM 16 you had participated in while you were a BP employee?

5 : 19 PM 17 MS. KARIS: If we could go to the last page, please,  
5 : 19 PM 18 call out the end.

5 : 19 PM 19 BY MS. KARIS:

5 : 19 PM 20 Q. Is it correct that BP had provided you with over 600 hours  
5 : 19 PM 21 of training at the time, at least as of the time you left BP?

5 : 19 PM 22 A. Yes, ma'am.

5 : 19 PM 23 Q. All right. And did some of that training include well  
5 : 19 PM 24 control training?

5 : 19 PM 25 A. We had to go to well control training every two years.

## RONNIE SEPULVADO - DIRECT

5 : 19 PM 1 Q. All right. Let's look at some of the other trainings that  
5 : 19 PM 2 you had been through.

5 : 19 PM 3 MS. KARIS: If we can go to 557.1.1.

5 : 19 PM 4 THE COURT: We're not going to go through these like  
5 : 19 PM 5 we did with the last fellow, one by one.

5 : 19 PM 6 MS. KARIS: I promise we won't.

5 : 19 PM 7 THE COURT: Okay. This is in the record; right?

5 : 19 PM 8 MS. KARIS: Fair enough, I won't --

5 : 19 PM 9 THE COURT: I can read it. Okay.

5 : 20 PM 10 MR. UNDERHILL: Your Honor, on behalf of the United  
5 : 20 PM 11 States, we'd be glad to stipulate to the high competence of  
5 : 20 PM 12 Mr. Sepulvado. We don't have any argument otherwise.

5 : 20 PM 13 THE COURT: Thank you, Mr. Williams.

5 : 20 PM 14 MR. ROBERTS: Your Honor, my only problem is I can't  
5 : 20 PM 15 hear.

5 : 20 PM 16 THE COURT: Well, I can't help you with that. You're  
5 : 20 PM 17 having all sorts of disability problems, Mr. Roberts.

5 : 20 PM 18 MR. ROBERTS: I could move somewhere -- I'm sorry,  
5 : 20 PM 19 Carrie.

5 : 20 PM 20 THE COURT: Do you want to move up here? There's a  
5 : 20 PM 21 couple chairs up here.

5 : 20 PM 22 MR. BROCK: Come on and move over to BP's table.

5 : 20 PM 23 THE COURT: I think he's on the injured reserve.  
5 : 20 PM 24 He's walking around pretty good today.

5 : 20 PM 25 All right. Let's continue.

## RONNIE SEPULVADO - DIRECT

5 : 2 0 P M 1 MS. KARIS: Thank you.

5 : 2 1 P M 2 THE COURT: Excuse me, I'm just trying to -- I'd

5 : 2 1 P M 3 really like to accommodate Mr. Sepulvado to finish his

5 : 2 1 P M 4 testimony today, you know, so he doesn't have to come back

5 : 2 1 P M 5 tomorrow. Okay?

5 : 2 1 P M 6 MS. KARIS: I hope that can happen -- I will try --

5 : 2 1 P M 7 THE COURT: He was not out on the rig when this

5 : 2 1 P M 8 happened. We've heard a lot of testimony from others, and I'm

5 : 2 1 P M 9 sure we'll have more. So let's see if we can condense this,

5 : 2 1 P M 10 okay, as much as possible.

5 : 2 1 P M 11 MS. KARIS: Thank you. Thank you, Your Honor.

5 : 2 1 P M 12 BY MS. KARIS:

5 : 2 1 P M 13 Q. Mr. Sepulvado, let me ask you this: Without going through

5 : 2 1 P M 14 your training, was it your experience, in dealing with various

5 : 2 1 P M 15 well site leaders at BP, that BP provided them with a variety

5 : 2 1 P M 16 of different training courses and programs?

5 : 2 1 P M 17 A. That's correct.

5 : 2 1 P M 18 Q. And to your knowledge, was there anything unique about the

5 : 2 1 P M 19 training that you got as opposed to the training that some

5 : 2 1 P M 20 others like Mr. Vidrine or Mr. Kaluza had received?

5 : 2 1 P M 21 A. It would have been the same training. They required us to

5 : 2 1 P M 22 go through so many hours of school. Some of them you had to

5 : 2 1 P M 23 redo every year, some every two years, some every three years.

5 : 2 2 P M 24 Q. Okay. In addition to whatever formal training you

5 : 2 2 P M 25 received, did you also get other safety-related training from

## RONNIE SEPULVADO - DIRECT

5 : 2 2 P M 1 BP?

5 : 2 2 P M 2 A. Yes, we did.

5 : 2 2 P M 3 Q. All right. We won't go through all of that safety-related

5 : 2 2 P M 4 training, but we've been talking a lot in this case about

5 : 2 2 P M 5 personal safety versus process safety.

5 : 2 2 P M 6 Was it your experience that you received training

5 : 2 2 P M 7 from BP both in personal safety as well as process safety as it

5 : 2 2 P M 8 related to drilling operations?

5 : 2 2 P M 9 A. Yes, we did.

5 : 2 2 P M 10 Q. Did you ever separate those two in your mind?

5 : 2 2 P M 11 A. To me, they could come together, and the process safety

5 : 2 2 P M 12 could quickly turn into personal safety.

5 : 2 2 P M 13 Q. Explain what you mean.

5 : 2 2 P M 14 A. Well, if you take process safety, you know, whenever we

5 : 2 2 P M 15 get equipment out to the rig, because it has to meet BP specs,

5 : 2 2 P M 16 it has to -- you know, the casing has to be ready for certain

5 : 2 2 P M 17 pressures. And if we don't meet those pressures, I mean, you

5 : 2 3 P M 18 could blow the casing up; and then it turns into personal

5 : 2 3 P M 19 safety.

5 : 2 3 P M 20 Q. So to you, there was no difference, if you will?

5 : 2 3 P M 21 A. No, ma'am.

5 : 2 3 P M 22 Q. All right. We've heard a lot about the safety record of

5 : 2 3 P M 23 *Deepwater Horizon*. And in the interest of time, we won't go

5 : 2 3 P M 24 back through all of it. But could you tell us whether you

5 : 2 3 P M 25 yourself consider the *Deepwater Horizon* to be a safe rig?

## RONNIE SEPULVADO - DIRECT

5 : 2 3 P M 1 A. Very safe.

5 : 2 3 P M 2 Q. All right.

5 : 2 3 P M 3 MS. KARIS: And if we can pull up Exhibit 51350,  
5 : 2 3 P M 4 please. If you go to the end.

5 : 2 3 P M 5 BY MS. KARIS:

5 : 2 3 P M 6 Q. There has been and there will, I suspect, be some  
5 : 2 3 P M 7 criticism of the some of the folks from BP that you worked with  
5 : 2 3 P M 8 and I want to put some of their actions in context here.

5 : 2 3 P M 9 MS. KARIS: So if we can call out the bottom e-mail,  
5 : 2 3 P M 10 please.

5 : 2 4 P M 11 BY MS. KARIS:

5 : 2 4 P M 12 Q. Do you know Mr. Johnson?

5 : 2 4 P M 13 A. Yes, I do.

5 : 2 4 P M 14 Q. All right. And this is dated April 2nd of 2010, and the  
5 : 2 4 P M 15 subject is *Deepwater Horizon* 1-year recordable free.

5 : 2 4 P M 16 Do you see that?

5 : 2 4 P M 17 A. Yes, ma'am.

5 : 2 4 P M 18 Q. All right. And Mr. -- who is Mr. Johnson, first of all?

5 : 2 4 P M 19 A. He's the superintendent for Transocean over the *Deepwater*  
5 : 2 4 P M 20 *Horizon*.

5 : 2 4 P M 21 Q. All right. And some of the folks he's sending this to are  
5 : 2 4 P M 22 the *Deepwater Horizon* OIM, with a carbon copy to folks,  
5 : 2 4 P M 23 including John Guide. Who is Mr. Guide?

5 : 2 4 P M 24 A. He's the well -- he was the well's team leader that I  
5 : 2 4 P M 25 worked directly for.

## RONNIE SEPULVADO - DIRECT

5 : 2 4 P M 1 Q. Was he your boss?

5 : 2 4 P M 2 A. Yes, ma'am.

5 : 2 4 P M 3 Q. How many years did you work with Mr. Guide?

5 : 2 4 P M 4 A. I've worked with him ever since he came over as well's

5 : 2 4 P M 5 team leader on the *Horizon*. Four or five years earlier, I

5 : 2 4 P M 6 worked with him on the Horn Mountain project.

5 : 2 4 P M 7 Q. Okay. So you had worked with him several years. Is that

5 : 2 5 P M 8 fair to say?

5 : 2 5 P M 9 A. Yes, ma'am.

5 : 2 5 P M 10 Q. Can you describe for us what your relationship was like

5 : 2 5 P M 11 with Mr. Guide?

5 : 2 5 P M 12 A. I thought it was pretty good. You know, if John told me

5 : 2 5 P M 13 to do something and I thought otherwise, we'd talk about it and

5 : 2 5 P M 14 vice versa. You know, if he wanted me to do something

5 : 2 5 P M 15 different from what I was trying to do, you know, we'd explain

5 : 2 5 P M 16 each other's situations, and normally we came to some

5 : 2 5 P M 17 conclusion we could work with.

5 : 2 5 P M 18 Q. Okay. Do you know what Mr. Guide's background was in the

5 : 2 5 P M 19 oil and gas industry?

5 : 2 5 P M 20 A. He had been a drilling engineer, I don't know how many

5 : 2 5 P M 21 years. He came from the ARCO Vastar side, and he had been as a

5 : 2 5 P M 22 well's team leader, that I know of, on a couple different times

5 : 2 5 P M 23 on different projects.

5 : 2 5 P M 24 Q. And based upon your reporting to Mr. Guide and your

5 : 2 5 P M 25 exposure to the drill crew, how would you describe Mr. Guide's

## RONNIE SEPULVADO - DIRECT

5 : 2 5 P M 1 relationship with the *Deepwater Horizon* rig crew?

5 : 2 6 P M 2 A. It was very good.

5 : 2 6 P M 3 Q. Some of the other folks on this e-mail are Mr. Cocalles,

5 : 2 6 P M 4 Mr. Sims. Did you know these folks, Mr. Cocalles and Mr. Sims?

5 : 2 6 P M 5 A. Yes, ma'am.

5 : 2 6 P M 6 Q. All right. And is Mr. Sims Mr. Guide's boss, if you know?

5 : 2 6 P M 7 A. Yes, ma'am.

5 : 2 6 P M 8 Q. All right. And let's see what Mr. Johnson writes,

5 : 2 6 P M 9 April 2nd, 2010, 18 days before this incident.

5 : 2 6 P M 10 "Please pass on my congratulations and admiration to

5 : 2 6 P M 11 the entire *Deepwater Horizon* team."

5 : 2 6 P M 12 Were you a member of that team?

5 : 2 6 P M 13 A. Yes, ma'am.

5 : 2 6 P M 14 Q. And did you consider Mr. Guide to be a member of that team

5 : 2 6 P M 15 as well?

5 : 2 6 P M 16 A. Yes.

5 : 2 6 P M 17 Q. And Mr. Sims?

5 : 2 6 P M 18 A. Yes, ma'am.

5 : 2 6 P M 19 Q. And he goes on to say: "Reaching the milestone of working

5 : 2 6 P M 20 one-year recordable free is a great achievement and something

5 : 2 6 P M 21 we should all feel proud of. It takes hard work and commitment

5 : 2 6 P M 22 from the entire crew, and I would like to thank you. Once

5 : 2 7 P M 23 again, we have demonstrated what can be achievable if we truly

5 : 2 7 P M 24 believe we can work injury-free."

5 : 2 7 P M 25 And at the end he ends by saying, "Great job."

## RONNIE SEPULVADO - DIRECT

5 : 2 7 P M 1 Was it your experience, in working with Mr. Guide and  
5 : 2 7 P M 2 Mr. Sims and for BP, that there was a focus and emphasis on  
5 : 2 7 P M 3 working in an injury-free environment?

5 : 2 7 P M 4 A. Yes, ma'am.

5 : 2 7 P M 5 Q. Tell us how they demonstrated that, in your experience.

5 : 2 7 P M 6 A. A lot of the -- if they'd give bonuses for wells, part of  
5 : 2 7 P M 7 that was -- you know, you had to be injury-free. The accidents  
5 : 2 7 P M 8 or the incidents was included in that; also, the  
5 : 2 7 P M 9 environmental -- any kind of environmental incidents, any kind  
5 : 2 7 P M 10 of INCs. And if you had any kind of accident during that --  
5 : 2 7 P M 11 that well time, if you made a bonus, you'd lose it all, if you  
5 : 2 8 P M 12 have a card.

5 : 2 8 P M 13 MS. KARIS: Okay. If we can go to the response  
5 : 2 8 P M 14 e-mail from Mr. Winslow further up.

5 : 2 8 P M 15 BY MS. KARIS:

5 : 2 8 P M 16 Q. Do you know who Mr. Winslow is?

5 : 2 8 P M 17 A. Yes, ma'am.

5 : 2 8 P M 18 Q. Who is he?

5 : 2 8 P M 19 A. He was -- I don't know what his title was, but he was over  
5 : 2 8 P M 20 the rig manager.

5 : 2 8 P M 21 Q. Okay. So he was senior to Mr. Johnson at Transocean; is  
5 : 2 8 P M 22 that correct?

5 : 2 8 P M 23 A. Yes, ma'am.

5 : 2 8 P M 24 Q. And he says: "Rod, I echo the words of Paul. Great  
5 : 2 8 P M 25 milestone, one day at a time. It can be done, Daun."



## RONNIE SEPULVADO - DIRECT

5 : 2 8 P M 1 Correct?

5 : 2 8 P M 2 A. Correct.

5 : 2 8 P M 3 Q. There's no mention in this e-mail anywhere, is there, that

5 : 2 8 P M 4 BP is rushing Transocean's crew?

5 : 2 8 P M 5 A. No.

5 : 2 8 P M 6 Q. Any mention in here that BP is asking Transocean to cut

5 : 2 8 P M 7 corners?

5 : 2 8 P M 8 A. No.

5 : 2 8 P M 9 Q. Any mention in here that BP wants to move to the next well

5 : 2 8 P M 10 and so they should hurry up and get the job done?

5 : 2 8 P M 11 A. No.

5 : 2 8 P M 12 Q. Let's move to the further up e-mail.

5 : 2 9 P M 13 Now, this is Mr. Canducci. He's another member of

5 : 2 9 P M 14 Transocean's leadership team. Is that fair?

5 : 2 9 P M 15 A. I didn't know him.

5 : 2 9 P M 16 Q. Okay. Fair enough.

5 : 2 9 P M 17 He says: I would like to say thank you for a "job

5 : 2 9 P M 18 well done," too. Unfortunately, the job never ends, but you

5 : 2 9 P M 19 guys are demonstrating how it is done every day. Excellent

5 : 2 9 P M 20 achievement. Please express my appreciation to the entire

5 : 2 9 P M 21 crew.

5 : 2 9 P M 22 And the appreciation he is expressing includes to

5 : 2 9 P M 23 BP's well site leaders, well's team leader, and operations

5 : 2 9 P M 24 manager; correct?

5 : 2 9 P M 25 A. Correct.

## RONNIE SEPULVADO - DIRECT

5 : 2 9 P M 1 Q. All right. And then finally, you get copied on it at the  
5 : 2 9 P M 2 very top. Mr. Sims, we already said was Mr. Guide's boss,  
5 : 2 9 P M 3 passes this on to you and to your brother Murry and to a bunch  
5 : 2 9 P M 4 of other folks, and he, too, expresses his congratulations;  
5 : 2 9 P M 5 right?

5 : 3 0 P M 6 He says, "To the *Horizon* Team, congratulations and  
5 : 3 0 P M 7 great job. I feel proud, honored, and very lucky to be  
5 : 3 0 P M 8 associated with such a high-performing rig. Keep up the  
5 : 3 0 P M 9 excellent work."

5 : 3 0 P M 10 And Mr. Vidrine was part of this crew as well, as we  
5 : 3 0 P M 11 see in the e-mail; correct?

5 : 3 0 P M 12 A. Correct.

5 : 3 0 P M 13 Q. All right. We won't go through each of the folks that  
5 : 3 0 P M 14 were on the *Deepwater Horizon* crew. But if you could summarize  
5 : 3 0 P M 15 for us, based on your experience with Mr. Harrell, Mr. Ezell,  
5 : 3 0 P M 16 Mr. Anderson, and Transocean's drilling crew who was on the  
5 : 3 0 P M 17 *Deepwater Horizon* on the night of April 20th, how would you  
5 : 3 0 P M 18 describe your experience with that crew?

5 : 3 0 P M 19 A. I didn't have a problem working with any of them. You  
5 : 3 0 P M 20 know, at times we'd have disagreements on certain things, but  
5 : 3 0 P M 21 we were able to work those disagreements out.

5 : 3 1 P M 22 Q. And did you think all of them were competent to perform  
5 : 3 1 P M 23 the jobs that they were assigned do?

5 : 3 1 P M 24 A. Yes, I did.

5 : 3 1 P M 25 Q. Did you ever have any reasons to question their

## RONNIE SEPULVADO - DIRECT

5 : 3 1 P M 1 competence?

5 : 3 1 P M 2 A. No.

5 : 3 1 P M 3 Q. There's been a lot of statements in this case about what  
5 : 3 1 P M 4 communication or information was exchanged between BP's  
5 : 3 1 P M 5 engineering team and well's team and Transocean's crew, and I  
5 : 3 1 P M 6 want to cover some of that with you.

5 : 3 1 P M 7 First of all, did you know, based on being a well  
5 : 3 1 P M 8 site leader on the *Deepwater Horizon*, how BP communicated  
5 : 3 1 P M 9 information with the rig crew regarding the well, including  
5 : 3 1 P M 10 specifically the Macondo well?

5 : 3 1 P M 11 A. The information would come from John Guide to me; and it  
5 : 3 1 P M 12 would go from me to the OIM, toolpushers, drillers, and all of  
5 : 3 1 P M 13 the leads on -- of the third-party people that were on the rig.

5 : 3 1 P M 14 Q. And were there a variety of meetings that were held on a  
5 : 3 2 P M 15 weekly or daily basis in which that information was  
5 : 3 2 P M 16 communicated?

5 : 3 2 P M 17 A. Yes. At 7:30 in the morning every day, we'd have a  
5 : 3 2 P M 18 meeting with town. And in that meeting on the rig side would  
5 : 3 2 P M 19 be the OIM, myself, the toolpushers, and somebody -- at least  
5 : 3 2 P M 20 one guy from each one of the third-parties. And in town,  
5 : 3 2 P M 21 they'd have John Guide, geologists, the engineers, and then  
5 : 3 2 P M 22 sometimes they'd have Transocean in there and some of the  
5 : 3 2 P M 23 people from the third party.

5 : 3 2 P M 24 MS. KARIS: All right. And if we can pull up  
5 : 3 2 P M 25 Exhibit D-4369, please.

## RONNIE SEPULVADO - DIRECT

5 : 3 2 P M 1 BY MS. KARIS:

5 : 3 2 P M 2 Q. Mr. Sepulvado, this is a graphic that we've prepared on  
5 : 3 2 P M 3 the daily meetings that were conducted; and we've listed the  
5 : 3 2 P M 4 time there, the event, the attendees, and then the topic  
5 : 3 2 P M 5 discussed.

5 : 3 3 P M 6 And without going through this in extensive detail,  
5 : 3 3 P M 7 is this a fair depiction of the daily meetings that took place  
5 : 3 3 P M 8 in which information was communicated between BP's well site  
5 : 3 3 P M 9 leader leaders and the rig crew, as well as some contractor  
5 : 3 3 P M 10 personnel?

5 : 3 3 P M 11 A. That's true, plus we used e-mails to send various things  
5 : 3 3 P M 12 out in between these meetings.

5 : 3 3 P M 13 Q. Okay. And just to pick any one of these, there's  
5 : 3 3 P M 14 reference to a daily meeting there at 7:30 in the morning. Can  
5 : 3 3 P M 15 you tell us briefly what that meeting was about?

5 : 3 3 P M 16 A. Discussed first -- first we discussed safety issues. If  
5 : 3 3 P M 17 we had any safety issues in the last 24 hours, we would discuss  
5 : 3 3 P M 18 that, how many stop cards they had, how many safe drills we  
5 : 3 3 P M 19 had. Then we'd talk about the operations for the last 12 to  
5 : 3 3 P M 20 24 hours. We'd also talk about upcoming operations for the  
5 : 3 3 P M 21 next 24 hours. We would talk about any kind of tools or  
5 : 3 4 P M 22 equipment that we'd need to get to the rig.

5 : 3 4 P M 23 Q. And you said you'd start with safety issues. Were you  
5 : 3 4 P M 24 limiting the discussion to personal safety issues?

5 : 3 4 P M 25 A. Any kind of safety issue.

## RONNIE SEPULVADO - DIRECT

5 : 3 4 P M 1 Q. All right. And those meetings take place every day  
5 : 3 4 P M 2 religiously at 7:30 or thereabouts?  
5 : 3 4 P M 3 A. That's true.  
5 : 3 4 P M 4 Q. And were there folks from BP's onshore team that  
5 : 3 4 P M 5 participated in these meetings as well?  
5 : 3 4 P M 6 A. Yes, ma'am.  
5 : 3 4 P M 7 Q. During these meetings, the various contractors or  
5 : 3 4 P M 8 subcontractors personnel who was there, were they given an  
5 : 3 4 P M 9 opportunity to ask any questions they had as you described what  
5 : 3 4 P M 10 the upcoming operations were?  
5 : 3 4 P M 11 A. We would go around the table and ask anybody that was in  
5 : 3 4 P M 12 the room -- or everybody, each person, to see if they had any  
5 : 3 4 P M 13 comments or anything to contribute.  
5 : 3 4 P M 14 Q. Okay. And what was the purpose of having these meetings  
5 : 3 4 P M 15 and asking people if they had anything to contribute or any  
5 : 3 5 P M 16 concerns?  
5 : 3 5 P M 17 A. Well, just to keep them up of what was going on on the  
5 : 3 5 P M 18 rig. And it was kind of a reminder to, you know, go back, say  
5 : 3 5 P M 19 to your group and make sure you convey that they work safely.  
5 : 3 5 P M 20 Q. All right. There's a reference down there to Transocean  
5 : 3 5 P M 21 rig personnel shift change. Do you see that? The  
5 : 3 5 P M 22 pre-operations think drills?  
5 : 3 5 P M 23 A. Yes, ma'am.  
5 : 3 5 P M 24 Q. And we've heard some about these, but can you tell us what  
5 : 3 5 P M 25 these think drills are?

## RONNIE SEPULVADO - DIRECT

5 : 3 5 P M 1 A. They had a think drill before every job. The think drill  
5 : 3 5 P M 2 describes the job. It will list procedures. It will list --  
5 : 3 5 P M 3 do hazard hunts. It will tell you what guys to assign to what  
5 : 3 5 P M 4 part of the job. And if any of that changes, they have to do  
5 : 3 6 P M 5 another think drill. But also try to minimize hazard, try to  
5 : 3 6 P M 6 eliminate hazards.

5 : 3 6 P M 7 MS. KARIS: If we can pull up 47678.

5 : 3 6 P M 8 BY MS. KARIS:

5 : 3 6 P M 9 Q. There's a task specific think procedure. Do you see this?

5 : 3 6 P M 10 A. Yes.

5 : 3 6 P M 11 Q. Is this one of those think drills?

5 : 3 6 P M 12 MS. KARIS: Can we go to the next page, please?

5 : 3 6 P M 13 THE WITNESS: Yes, ma'am.

5 : 3 6 P M 14 BY MS. KARIS:

5 : 3 6 P M 15 Q. All right. And this one happens to be about "displace  
5 : 3 6 P M 16 riser with seawater." Do you see that?

5 : 3 6 P M 17 A. Yes.

5 : 3 6 P M 18 Q. And is it fair, based on your description, to say what you  
5 : 3 6 P M 19 would discuss is first the plan and how you're going to inspect  
5 : 3 6 P M 20 it, identify the hazards -- would those be personal and process  
5 : 3 6 P M 21 safety hazards?

5 : 3 7 P M 22 A. Yes, ma'am.

5 : 3 7 P M 23 Q. -- and then address any environmental issues.

5 : 3 7 P M 24 Communicate, what was the communicate about?

5 : 3 7 P M 25 A. Communication was to make sure that everybody understood

## RONNIE SEPULVADO - DIRECT

5 : 3 7 P M 1 what his job was; and if anything changed, they had the right  
5 : 3 7 P M 2 to stop the job and regroup.

5 : 3 7 P M 3 Q. And who were the folks that participated in these think  
5 : 3 7 P M 4 drills? And I apologize if you already answered.

5 : 3 7 P M 5 A. Everybody that would be involved in that particular job.

5 : 3 7 P M 6 Q. So, for example, for a displace riser with seawater, who  
5 : 3 7 P M 7 would have been the folks that would have been involved in the  
5 : 3 7 P M 8 think drill?

5 : 3 7 P M 9 A. That would have been the company man, the toolpusher, the  
5 : 3 7 P M 10 driller, ADs, the whole drill crew, and the mud engineer.

5 : 3 7 P M 11 MS. KARIS: If we go back to 4369, please. Sorry.

5 : 3 8 P M 12 Wrong one. 4369. Sorry.

5 : 3 8 P M 13 BY MS. KARIS:

5 : 3 8 P M 14 Q. And does this list the rest of the meetings that you guys  
5 : 3 8 P M 15 would have every single day on the rig at these various times?

5 : 3 8 P M 16 A. Yes, ma'am, daily.

5 : 3 8 P M 17 Q. All right. And were there also weekly meetings that were  
5 : 3 8 P M 18 conducted that are not listed on this?

5 : 3 8 P M 19 A. Yes.

5 : 3 8 P M 20 Q. And were those meetings, the weekly meeting, for the  
5 : 3 8 P M 21 purpose -- what was the purpose of those? Let me ask you that.

5 : 3 8 P M 22 A. Safety and operational --

5 : 3 8 P M 23 Q. Okay.

5 : 3 8 P M 24 MS. KARIS: If we can pull up D-4370, please.  
25

## RONNIE SEPULVADO - DIRECT

5 : 3 8 P M 1 BY MS. KARIS:

5 : 3 8 P M 2 Q. You said they were safety and operational. Did I hear

5 : 3 8 P M 3 that correctly?

5 : 3 8 P M 4 A. Yes.

5 : 3 8 P M 5 Q. All right. And is this a list of some of those meetings?

5 : 3 8 P M 6 A. Yes.

5 : 3 8 P M 7 Q. All right. And there's a safety meeting, it says, with

5 : 3 8 P M 8 third parties, OIMs, toolpushers, well site leaders, Transocean

5 : 3 9 P M 9 safety men, and then BP safety men. Do you see that?

5 : 3 9 P M 10 A. Yes, ma'am.

5 : 3 9 P M 11 Q. Tell us what happened in those safety meetings.

5 : 3 9 P M 12 A. One of the stop card -- Transocean had a stop card system

5 : 3 9 P M 13 and they would try to get the third-party guys to participate

5 : 3 9 P M 14 in it. And we talked about the stop cards, who turned what in,

5 : 3 9 P M 15 what they were, may even pick a couple good ones out and read

5 : 3 9 P M 16 them out during the meeting and talk about participation in the

5 : 3 9 P M 17 stop program the next week.

5 : 3 9 P M 18 Q. Okay. And then the next one there is well control audits.

5 : 3 9 P M 19 Do you see that?

5 : 3 9 P M 20 A. Yes, ma'am.

5 : 3 9 P M 21 Q. Can you describe for us what was a well control audit that

5 : 3 9 P M 22 would take place every week on the rig?

5 : 3 9 P M 23 A. The drill crew that was on tour would have a well control

5 : 3 9 P M 24 audit. The well control audit, anybody could pick a subject.

5 : 4 0 P M 25 The driller may say -- one time he would do it, one time the



## RONNIE SEPULVADO - DIRECT

5 : 4 0 P M 1 toolpusher would do it, one time one of crew would do it. But  
5 : 4 0 P M 2 they would pick a topic to talk about in well control. And if  
5 : 4 0 P M 3 we were drilling, we would talk about well control during  
5 : 4 0 P M 4 drilling. If we were wirelining, we would talk about well  
5 : 4 0 P M 5 control during wirelining.

5 : 4 0 P M 6 And it could be different topics, you know. It just  
5 : 4 0 P M 7 depends on what we were doing at the time. And each crew would  
5 : 4 0 P M 8 do this, the day crew and the night crew.

5 : 4 0 P M 9 MS. KARIS: Okay. If we can go to 571.1.1, please.

5 : 4 0 P M 10 BY MS. KARIS:

5 : 4 0 P M 11 Q. And were those well control audits documented?

5 : 4 0 P M 12 A. Yes, ma'am.

5 : 4 0 P M 13 Q. And were they also called safety drill reports?

5 : 4 0 P M 14 A. Yes, ma'am.

5 : 4 0 P M 15 Q. All right. So is what we're looking at here, Exhibit 571,  
5 : 4 0 P M 16 is that one of these well control audits that we've been  
5 : 4 0 P M 17 discussing?

5 : 4 0 P M 18 A. Yes.

5 : 4 0 P M 19 Q. And did you, as the BP well site leader on the rig,  
5 : 4 0 P M 20 participate in these?

5 : 4 1 P M 21 A. I did.

5 : 4 1 P M 22 MS. KARIS: Then if we can also, please, go to  
5 : 4 1 P M 23 571.13.4.

5 : 4 1 P M 24 BY MS. KARIS:

5 : 4 1 P M 25 Q. Then this would have been one they conducted on

## RONNIE SEPULVADO - DIRECT

5 : 4 1 P M 1 April 18th?

5 : 4 1 P M 2 A. Yes.

5 : 4 1 P M 3 Q. Now, you didn't participate in this one; correct?

5 : 4 1 P M 4 A. No, I was gone by that time.

5 : 4 1 P M 5 Q. All right. Mr. Sepulvado, you were asked some questions

5 : 4 1 P M 6 about -- by counsel for Louisiana about the drill plan that you

5 : 4 1 P M 7 had received and provided some comments on. Do you recall

5 : 4 1 P M 8 those questions?

5 : 4 1 P M 9 A. Yes, I do.

5 : 4 1 P M 10 Q. All right. Let's step back for a minute.

5 : 4 2 P M 11 What is a drilling plan?

5 : 4 2 P M 12 A. Engineer writes a drilling plan up to drill a well; and he

5 : 4 2 P M 13 sends that information to the rig, and we get it out to the

5 : 4 2 P M 14 people on the rig. And normally we try to get it out early

5 : 4 2 P M 15 enough so they could read over it. If there's any problems

5 : 4 2 P M 16 that they see, it comes back to us and we'll revise it.

5 : 4 2 P M 17 Q. And does the drilling plan have fairly extensive

5 : 4 2 P M 18 information about what the drilling program is going to be?

5 : 4 2 P M 19 A. Yes, ma'am. It tells you what kind of mud to use, what

5 : 4 2 P M 20 kind of bits to use, what size bits, what kind of casing to

5 : 4 2 P M 21 run, what kind of cement to pump. It will tell you what kind

5 : 4 2 P M 22 of pipe to use, what grades of pipe, weights of pipe.

5 : 4 2 P M 23 MS. KARIS: If we can pull up 7685.1.2, please.

5 : 4 3 P M 24 BY MS. KARIS:

5 : 4 3 P M 25 Q. Now, the *Deepwater Horizon* got to the Macondo well on

## RONNIE SEPULVADO - DIRECT

5 : 4 3 P M 1 January of 2010; is that correct?

5 : 4 3 P M 2 A. Yes, ma'am.

5 : 4 3 P M 3 Q. I'm just asking you independent of the document. When did  
5 : 4 3 P M 4 the *Horizon* get in the Macondo well, if you recall?

5 : 4 3 P M 5 A. January/February, somewhere along those lines.

5 : 4 3 P M 6 Q. Fair enough.

5 : 4 3 P M 7 Here we have an e-mail from Mr. Morel to a number of  
5 : 4 3 P M 8 individuals, including you; and it's entitled "Subject: Final  
5 : 4 3 P M 9 Signed Macondo Drilling Program."

5 : 4 3 P M 10 And then Murry forwards that to the *Deepwater*  
5 : 4 3 P M 11 *Horizon's* OIM. That would be the offshore installation  
5 : 4 3 P M 12 manager; correct?

5 : 4 3 P M 13 A. Yes, ma'am.

5 : 4 3 P M 14 Q. And that would have been Mr. Harrell or whoever else was  
5 : 4 3 P M 15 his replacement at the time?

5 : 4 3 P M 16 A. Yes, ma'am, either Jimmy Harrell or his relief.

5 : 4 3 P M 17 Q. All right. And so you got this program out on the  
5 : 4 3 P M 18 *Deepwater Horizon* shortly after the *Horizon* arrived there.  
5 : 4 4 P M 19 Let's look at some of the information that's in this drilling  
5 : 4 4 P M 20 plan.

5 : 4 4 P M 21 First, Mr. Brock asked Mr. Ezell if he got pore  
5 : 4 4 P M 22 pressure and temperature and other related information. And in  
5 : 4 4 P M 23 all fairness to Mr. Ezell, he didn't recall, given how many  
5 : 4 4 P M 24 years had passed. So let's see if this plan shows what kind of  
5 : 4 4 P M 25 information was provided.

## RONNIE SEPULVADO - DIRECT

5 : 4 4 P M 1 MS. KARIS: If we can turn to page 8 of this  
5 : 4 4 P M 2 document, which ends in 1790, please. And if you can call out  
5 : 4 4 P M 3 the drilling summary plan and then up to the second paragraph,  
5 : 4 4 P M 4 please. One more down, sorry.

5 : 4 4 P M 5 BY MS. KARIS:

5 : 4 4 P M 6 Q. Again, this is sent out just as the *Deepwater Horizon* gets  
5 : 4 4 P M 7 to Macondo, and it identifies here the drilling plan summary.

5 : 4 5 P M 8 Do you see there, second paragraph down, it says, "A  
5 : 4 5 P M 9 leak-off test will be performed after drilling out. The  
5 : 4 5 P M 10 estimated fracture gradient is approximately 16 ppg EMW"?

5 : 4 5 P M 11 What does that stand for?

5 : 4 5 P M 12 A. Pound per gallon.

5 : 4 5 P M 13 Q. What's the EMW?

5 : 4 5 P M 14 A. Equivalent mud weight.

5 : 4 5 P M 15 Q. And then it says: "The setting depth should give  
5 : 4 5 P M 16 sufficient fracture gradient to achieve the 13 5/8 casing point  
5 : 4 5 P M 17 at 15,300 md/tvd."

5 : 4 5 P M 18 What is that?

5 : 4 5 P M 19 A. That's telling me to set it up at 13 5/8.

5 : 4 5 P M 20 Q. All right.

5 : 4 5 P M 21 A. And the measured depth/TVD was -- you know, your measure  
5 : 4 5 P M 22 depth, if you have an angle in the hole, it's going to be  
5 : 4 5 P M 23 different from the TVD.

5 : 4 5 P M 24 Q. All right. So is that giving you some information  
5 : 4 5 P M 25 regarding what the expected or estimated fracture gradient is

## RONNIE SEPULVADO - DIRECT

5 : 4 6 P M 1 going to be?

5 : 4 6 P M 2 A. Yes, ma'am.

5 : 4 6 P M 3 Q. All right.

5 : 4 6 P M 4 MS. KARIS: If we can go to page 1759 of this.

5 : 4 6 P M 5 BY MS. KARIS:

5 : 4 6 P M 6 Q. Is there a whole section in here on subsurface fracture

5 : 4 6 P M 7 information?

5 : 4 6 P M 8 A. Yes, ma'am.

5 : 4 6 P M 9 Q. Okay. We won't go through all of this. But does this

5 : 4 6 P M 10 provide information in here regarding things like seismic

5 : 4 6 P M 11 cross section, pore pressure curve, directional plan, estimated

5 : 4 7 P M 12 temperature plot?

5 : 4 7 P M 13 A. Yeah, formation top.

5 : 4 7 P M 14 Q. Formation top and a bunch of other information?

5 : 4 7 P M 15 A. Yes, ma'am.

5 : 4 7 P M 16 Q. Was all of this information shared with Transocean's

5 : 4 7 P M 17 drilling crew?

5 : 4 7 P M 18 A. Yes, ma'am.

5 : 4 7 P M 19 Q. Was there anything unusual about the way you share

5 : 4 7 P M 20 information regarding the Macondo well as opposed to what you

5 : 4 7 P M 21 have done in connection with all the other wells you've been

5 : 4 7 P M 22 involved in?

5 : 4 7 P M 23 A. No, ma'am.

5 : 4 7 P M 24 Q. Now, you were asked some questions about the temporary

5 : 4 7 P M 25 abandonment procedure that Mr. Morel sent you, just before I

## RONNIE SEPULVADO - DIRECT

5 : 4 7 P M 1 got up, by counsel for Louisiana; and I want to go to that.

5 : 4 7 P M 2 Was that a draft of a plan that you saw -- or was  
5 : 4 7 P M 3 sent to you, I should say?

5 : 4 7 P M 4 A. Yes, ma'am. We get two or three drafts.

5 : 4 7 P M 5 Q. All right.

5 : 4 7 P M 6 MS. KARIS: And if we can turn to TREX-836.

5 : 4 7 P M 7 BY MS. KARIS:

5 : 4 8 P M 8 Q. I believe this was the first e-mail that you saw, and it  
5 : 4 8 P M 9 says it's April 12th of 2010. Are you still on the rig at this  
5 : 4 8 P M 10 point?

5 : 4 8 P M 11 A. Yes, ma'am.

5 : 4 8 P M 12 Q. And Mr. Morel, is he the drilling engineer -- junior  
5 : 4 8 P M 13 drilling engineer assigned to this?

5 : 4 8 P M 14 A. Yes.

5 : 4 8 P M 15 Q. All right. And he begins by saying: "This isn't perfect  
5 : 4 8 P M 16 yet, but I wanted to get everyone a copy so we can ensure all  
5 : 4 8 P M 17 the equipment required for upcoming operations is offshore in  
5 : 4 8 P M 18 time. Please let me know if you have questions or suggestions  
5 : 4 8 P M 19 how to improve the procedure."

5 : 4 8 P M 20 Do you see that?

5 : 4 8 P M 21 A. Yes.

5 : 4 8 P M 22 Q. Did it seem unusual to you that Mr. Morel was sending you  
5 : 4 8 P M 23 a plan on April 12th in which he says, "This isn't perfect  
5 : 4 8 P M 24 yet"?

5 : 4 8 P M 25 A. No, ma'am, it wasn't unusual.

## RONNIE SEPULVADO - DIRECT

5 : 4 8 P M 1 Q. Why not?

5 : 4 8 P M 2 A. Because we tried to work through these -- before we get

5 : 4 9 P M 3 the final plan, we try to send out drafts back and forth and

5 : 4 9 P M 4 make -- try to make sure nothing's left out.

5 : 4 9 P M 5 Q. All right. Did you find that something was, in fact, left

5 : 4 9 P M 6 out of this?

5 : 4 9 P M 7 A. Yes, ma'am.

5 : 4 9 P M 8 Q. All right.

5 : 4 9 P M 9 MS. KARIS: If we can go now to 00050.

5 : 4 9 P M 10 BY MS. KARIS:

5 : 4 9 P M 11 Q. And you respond there --

5 : 4 9 P M 12 MS. KARIS: The third e-mail down, please.

5 : 4 9 P M 13 BY MS. KARIS:

5 : 4 9 P M 14 Q. And you respond to Mr. Morel and you say: We need to do a

5 : 4 9 P M 15 negative test before displacing 14-pound mud to seawater, will

5 : 4 9 P M 16 have to pick a time to lay down some pipe, should need

5 : 4 9 P M 17 3600 feet of 6 5/8 and so forth.

5 : 5 0 P M 18 Were you surprised at this point -- strike that.

5 : 5 0 P M 19 Were you surprised that the plan you received did not

5 : 5 0 P M 20 have a negative test procedure in there?

5 : 5 0 P M 21 A. No, ma'am.

5 : 5 0 P M 22 Q. Why not?

5 : 5 0 P M 23 A. That's why we send these drafts out, to make sure that we

5 : 5 0 P M 24 catch everything. Because sometimes the engineer, he has more

5 : 5 0 P M 25 knowledge about what the regulatory stuff is in these T&As or

## RONNIE SEPULVADO - DIRECT

5 : 5 0 P M 1 anything else with the well in the engineering part. We have  
5 : 5 0 P M 2 more knowledge at the rig as far as knowing what's on the rig  
5 : 5 0 P M 3 and knowing what we can do with what's on the rig.

5 : 5 0 P M 4 So we send these things back and forth to make sure  
5 : 5 0 P M 5 we cover both ends.

5 : 5 0 P M 6 Q. Had you worked with Mr. Morel prior to the Macondo well?

5 : 5 0 P M 7 A. No, ma'am.

5 : 5 0 P M 8 Q. All right. Did you have reason to work with him  
5 : 5 0 P M 9 throughout the drilling of the Macondo well after the *Horizon*  
5 : 5 0 P M 10 got on-site?

5 : 5 0 P M 11 A. Yes, ma'am. I worked with him during the Macondo well.

5 : 5 0 P M 12 Q. Do you know who else -- which other drilling engineer  
5 : 5 0 P M 13 worked with Mr. Morel in this process?

5 : 5 1 P M 14 A. Mark Hafle.

5 : 5 1 P M 15 Q. Can you tell us who Mark Hafle is?

5 : 5 1 P M 16 A. He's one of the senior drilling engineers, and he was over  
5 : 5 1 P M 17 the Macondo well.

5 : 5 1 P M 18 Q. And had you worked with Mr. Hafle prior to this?

5 : 5 1 P M 19 A. Yes, I have.

5 : 5 1 P M 20 Q. Can you tell us what your experience was with Mr. Hafle?

5 : 5 1 P M 21 A. I never had an experience with him. He was a pretty  
5 : 5 1 P M 22 easy-going guy and easy to get along with.

5 : 5 1 P M 23 Q. Do you know whether he had extensive experience as a  
5 : 5 1 P M 24 drilling engineer?

5 : 5 1 P M 25 A. I don't know how many years he's been a drilling engineer,



## RONNIE SEPULVADO - DIRECT

5 : 5 1 P M 1 but he's been there for a while.

5 : 5 1 P M 2 Q. And was Mr. Morel working along with Mr. Hafle, Mr. Morel

5 : 5 1 P M 3 being the junior engineer and Mr. Hafle being the senior

5 : 5 1 P M 4 engineer on this well?

5 : 5 1 P M 5 A. That's correct.

5 : 5 1 P M 6 MS. KARIS: All right. Then if we can go now to

5 : 5 1 P M 7 00537, please.

5 : 5 1 P M 8 BY MS. KARIS:

5 : 5 2 P M 9 Q. Does Mr. Morel then, the next day, incorporate your

5 : 5 2 P M 10 recommended change here?

5 : 5 2 P M 11 A. Yes, ma'am.

5 : 5 2 P M 12 Q. All right. And is this what you would have expected to

5 : 5 2 P M 13 see: You got a plan, it was a draft plan that he said wasn't

5 : 5 2 P M 14 perfect, you provided comments. And then did he incorporate

5 : 5 2 P M 15 your comments?

5 : 5 2 P M 16 A. Yes, ma'am.

5 : 5 2 P M 17 Q. All right. He says here: "Nick, below are plans forward.

5 : 5 2 P M 18 Could you please update the five-day planner to reflect."

5 : 5 2 P M 19 What is the five-day planner?

5 : 5 2 P M 20 A. The five-day planner tells you what the operations are for

5 : 5 2 P M 21 the next five days, and you'll have some time columns. One

5 : 5 2 P M 22 will be estimated times for each one of the projects. Then

5 : 5 2 P M 23 you'll put the actual down in the next column. And then on the

5 : 5 2 P M 24 far right side of these operations, you'll have what people

5 : 5 3 P M 25 you're going to need, what materials you're going to need, what

## RONNIE SEPULVADO - DIRECT

5 : 5 3 P M 1 boats you're going to need to run and bring those materials.

5 : 5 3 P M 2 Q. Okay. And he's sending this to Mr. Wilson. Who's

5 : 5 3 P M 3 Mr. Wilson -- to you and Mr. Wilson?

5 : 5 3 P M 4 A. He's a rig clerk.

5 : 5 3 P M 5 Q. For what reason does Mr. Wilson need this information that

5 : 5 3 P M 6 Brian Morel is sending?

5 : 5 3 P M 7 A. He does the five-day planner and then he brings it over to

5 : 5 3 P M 8 me sometimes and I'll look at it, make corrections on it, or

5 : 5 3 P M 9 I'll send him a rough draft of the five-day planner and he'll

5 : 5 3 P M 10 put it in the final plan.

5 : 5 3 P M 11 Q. And with who on the rig is the five-day planner shared?

5 : 5 3 P M 12 A. It's sent out to the OIM, toolpushers, all the third-party

5 : 5 3 P M 13 companies on the rig, and just about every head of each

5 : 5 3 P M 14 department on the rig, captains and maintenance, electrical.

5 : 5 3 P M 15 Q. Okay.

5 : 5 3 P M 16 A. Plus, it goes to town. That goes to John Guide, David

5 : 5 3 P M 17 Sims, and drilling engineers.

5 : 5 3 P M 18 MS. KARIS: Okay. If we can now pull up 21109,

5 : 5 4 P M 19 please.

5 : 5 4 P M 20 BY MS. KARIS:

5 : 5 4 P M 21 Q. Mr. Morel responds in an e-mail on April 15th here at

5 : 5 4 P M 22 11:38; and he sends this e-mail to you, Mr. Vidrine,

5 : 5 4 P M 23 Mr. Kaluza, Mr. Lambert, Mr. Guide, Mr. Hafle, Mr. Cocalles, and

5 : 5 4 P M 24 Mr. Walz.

5 : 5 4 P M 25 Are those all members of BP's either wells team --

## RONNIE SEPULVADO - DIRECT

5 : 5 4 P M 1 either well site leaders or on the engineering side?

5 : 5 4 P M 2 A. Yes, ma'am.

5 : 5 4 P M 3 Q. All right. And he copies Mr. Lindner. Do you know who

5 : 5 4 P M 4 Mr. Lindner is?

5 : 5 4 P M 5 A. Mr. Leo Lindner was the mud engineer for M-I.

5 : 5 4 P M 6 Q. All right. He says: "Updated procedure. Attached is the

5 : 5 4 P M 7 updated procedure based on our current plan . . . . If anything

5 : 5 4 P M 8 changes, I will update and send next revision out. We are

5 : 5 4 P M 9 still waiting for approval for the departure to set our surface

5 : 5 4 P M 10 plug 3,000 feet below mud line. If we do not get this

5 : 5 5 P M 11 approved, the displacement/plug will be completed shallower

5 : 5 5 P M 12 after running the lock-down sleeve. Basic details of this

5 : 5 5 P M 13 change are included in this procedure."

5 : 5 5 P M 14 When you get information like this from Mr. Morel, do

5 : 5 5 P M 15 you then share it with Transocean's rig crew?

5 : 5 5 P M 16 A. Yes, ma'am.

5 : 5 5 P M 17 Q. And did you, in fact, do that? Did you do anything

5 : 5 5 P M 18 different here?

5 : 5 5 P M 19 A. Yes.

5 : 5 5 P M 20 Q. I'm sorry?

5 : 5 5 P M 21 A. Yes, we would share it.

5 : 5 5 P M 22 Q. All right. That was my fault. Just so we have a clear

5 : 5 5 P M 23 transcript.

5 : 5 5 P M 24 Did you, in fact, share that information with

5 : 5 5 P M 25 Transocean's rig crew after you received it from Mr. Morel?

## RONNIE SEPULVADO - DIRECT

5 : 5 5 P M 1 A. Yes, ma'am.

5 : 5 5 P M 2 Q. Based on your experience and the fact that you were on the

5 : 5 5 P M 3 rig through April 16th, did you withhold, at any time,

5 : 5 5 P M 4 information from Transocean's rig crew that you thought was

5 : 5 6 P M 5 relevant to the operations that were being executed on the

5 : 5 6 P M 6 *Deepwater Horizon*?

5 : 5 6 P M 7 A. No, I didn't.

5 : 5 6 P M 8 Q. And was it your custom and practice to share information

5 : 5 6 P M 9 with that rig crew so that they, as a team, as you described,

5 : 5 6 P M 10 could assist in executing the well plan?

5 : 5 6 P M 11 A. Yes, ma'am.

5 : 5 6 P M 12 Q. And is the same true with respect to sharing information

5 : 5 6 P M 13 with your other service contractors, Halliburton, or anybody

5 : 5 6 P M 14 else that needed that information?

5 : 5 6 P M 15 A. Yes, ma'am. We serve -- we sent it to all the service

5 : 5 6 P M 16 companies.

5 : 5 6 P M 17 MS. KARIS: Your Honor, I'm happy to continue.

5 : 5 6 P M 18 Unfortunately, I will not be finished today.

5 : 5 6 P M 19 THE COURT: How much longer do you have?

5 : 5 6 P M 20 MS. KARIS: At least another half hour, 40 minutes.

5 : 5 6 P M 21 THE COURT: Keep going.

5 : 5 6 P M 22 MS. KARIS: Thank you.

5 : 5 6 P M 23 BY MS. KARIS:

5 : 5 6 P M 24 Q. Okay. Now, there's been some discussion in this case

5 : 5 7 P M 25 regarding centralizers. Are you familiar with centralizers?

## RONNIE SEPULVADO - DIRECT

5 : 5 7 P M 1 You can take your time.

5 : 5 7 P M 2 A. Yes, ma'am.

5 : 5 7 P M 3 Q. Okay. And can you tell us what the purpose is of

5 : 5 7 P M 4 centralizers, as you understood them, from the perspective of

5 : 5 7 P M 5 the well site leader?

5 : 5 7 P M 6 A. They center the pipe in the hole.

5 : 5 7 P M 7 Q. Okay. Now, were you aware that additional centralizers

5 : 5 7 P M 8 were being sent to the *Deepwater Horizon*?

5 : 5 7 P M 9 A. Yes, ma'am, there were 15 additional centralizers coming

5 : 5 7 P M 10 out on the helicopter that I went in on. I never saw the

5 : 5 7 P M 11 centralizers, but I knew they were coming.

5 : 5 7 P M 12 Q. All right. And just to give us a time frame, that would

5 : 5 7 P M 13 have been additional centralizers arriving on April 16th?

5 : 5 7 P M 14 A. Yes, ma'am.

5 : 5 7 P M 15 Q. Now, had you had -- in your prior experience dealing with

5 : 5 7 P M 16 centralizers, had you ever had any problems with running

5 : 5 7 P M 17 centralizers?

5 : 5 7 P M 18 A. Yes, ma'am, I have.

5 : 5 7 P M 19 Q. Can you tell us what those problems were?

5 : 5 7 P M 20 A. On not this well, but a previous well, we were running in

5 : 5 8 P M 21 the hole with centralizers on the pipe. The pipe wouldn't go

5 : 5 8 P M 22 down, so we had to pull the pipe back out of the hole, and the

5 : 5 8 P M 23 centralizers were missing.

5 : 5 8 P M 24 Q. I'm sorry. Say that again. You were running the casing

5 : 5 8 P M 25 down the hole?

## RONNIE SEPULVADO - DIRECT

5 : 5 8 P M 1 A. With centralizers on the casing --

5 : 5 8 P M 2 Q. Okay.

5 : 5 8 P M 3 A. -- and we couldn't get the pipe all the way down, so we

5 : 5 8 P M 4 had to pull it back out of the hole and lay the pipe down, and

5 : 5 8 P M 5 the centralizers were missing.

5 : 5 8 P M 6 Q. And I should back up and ask: Are there different types

5 : 5 8 P M 7 of centralizers?

5 : 5 8 P M 8 A. Yes, ma'am, there is.

5 : 5 8 P M 9 Q. And what are the different types of centralizers?

5 : 5 8 P M 10 A. Well, you have the solid bodied ones that has connections

5 : 5 8 P M 11 on them, that's just like a swivel that you can screw into the

5 : 5 8 P M 12 string or casing, and the blades are solid on the pipe.

5 : 5 8 P M 13 And you have clamp-ons, which have bow springs, and

5 : 5 8 P M 14 those bow springs are welded at the bottom and the top.

5 : 5 8 P M 15 There's not much weld on them. A lot of times those things

5 : 5 8 P M 16 will come off.

5 : 5 9 P M 17 Q. Okay. And the experience that you described where the

5 : 5 9 P M 18 centralizers got stuck and didn't come up -- or came off, I

5 : 5 9 P M 19 should say, the piping, what type of centralizers were those

5 : 5 9 P M 20 that you had problems with?

5 : 5 9 P M 21 A. The bow spring types.

5 : 5 9 P M 22 Q. All right. Do you know what kind of centralizers arrived

5 : 5 9 P M 23 at the Macondo well on the 16th?

5 : 5 9 P M 24 A. I don't know exactly what type, but I know they were going

5 : 5 9 P M 25 to be bow springs.

## RONNIE SEPULVADO - DIRECT

5 : 5 9 P M 1 MS. KARIS: If we can look at Trial Exhibit 87159.

5 : 5 9 P M 2 BY MS. KARIS:

5 : 5 9 P M 3 Q. Is this the bow spring centralizer that we've been

5 : 5 9 P M 4 discussing?

5 : 5 9 P M 5 A. Yes, ma'am. The little dark piece is called a stop

5 : 5 9 P M 6 collar, and it has SET screws in it; and you run those SET

5 : 5 9 P M 7 screws down against the pipe, and that holds that little stop

5 : 5 9 P M 8 collar in place. Then you clamp this -- the centralizer around

5 : 5 9 P M 9 it, and it fastens with two nails, and it's hinged. And this

5 : 5 9 P M 10 stop collar keeps it from sliding up and down the pipe.

6 : 0 0 P M 11 Q. Okay. Just to be clear, these are the type that you had

6 : 0 0 P M 12 previously had problems with?

6 : 0 0 P M 13 A. Yes, ma'am.

6 : 0 0 P M 14 Q. Now, do you know who Dril-Quip is?

6 : 0 0 P M 15 A. Yes, ma'am.

6 : 0 0 P M 16 Q. Who is Dril-Quip?

6 : 0 0 P M 17 A. They furnished the wellheads on the Macondo.

6 : 0 0 P M 18 Q. And do they have -- are you aware of any advisories by

6 : 0 0 P M 19 Dril-Quip in connection with centralizers?

6 : 0 0 P M 20 A. Yes, ma'am. In their manual, they don't recommend running

6 : 0 0 P M 21 them.

6 : 0 0 P M 22 MS. KARIS: If we can pull up TRES-2793. Do we have

6 : 0 0 P M 23 a call-out?

6 : 0 0 P M 24 BY MS. KARIS:

6 : 0 0 P M 25 Q. Is this the Dril-Quip manual?

## RONNIE SEPULVADO - DIRECT

6:00 PM 1 A. Yes, ma'am.

6:01 PM 2 Q. In the interest of time, I'll read what the call-out says  
6:01 PM 3 until we find it.

6:01 PM 4 There's a note in here -- there you go.

6:01 PM 5 Can you read us what Dril-Quip says with respect to  
6:01 PM 6 running centralizers?

6:01 PM 7 A. They have a notation that says: "Dril-Quip does not  
6:01 PM 8 recommend the use of centralizers on casing for subsea  
6:01 PM 9 applications. Previous experience has shown these units can be  
6:01 PM 10 damaged or torn off the casing when passing through the ball  
6:01 PM 11 joints and BOP stacks."

6:01 PM 12 Q. Go ahead and read the next sentence, please.

6:01 PM 13 A. "As a result, they can become lodged in the wellhead,  
6:01 PM 14 causing damage and problems in setting the subsea casing hanger  
6:01 PM 15 and seal assembly."

6:01 PM 16 Q. Now, you said you worked for Mr. Guide?

6:01 PM 17 A. Yes, ma'am.

6:01 PM 18 Q. Do you know what, if any, experience Mr. Guide had with  
6:01 PM 19 centralizers of the type and kind that arrived at Macondo on  
6:01 PM 20 April 16th?

6:02 PM 21 A. He told me that on one of the last wells, they lost some  
6:02 PM 22 centralizers off the pipe, these bow spring-type centralizers.

6:02 PM 23 Q. Is there a risk associated with those centralizers getting  
6:02 PM 24 stuck across the BOP or across the wellhead?

6:02 PM 25 A. Yes, ma'am, there is a risk.



## RONNIE SEPULVADO - DIRECT

6:02 PM 1 Q. And what is the risk if that happens?

6:02 PM 2 A. If they get stuck across the BOP, you may not be able to

6:02 PM 3 use the BOP through that section where they're stuck.

6:02 PM 4 Q. And if you can't use your BOP, does that present a certain

6:02 PM 5 risk?

6:02 PM 6 A. Yes, ma'am.

6:02 PM 7 Q. What's the risk?

6:02 PM 8 A. You wouldn't be able to control the well if the well caved

6:02 PM 9 in.

6:02 PM 10 Q. Mr. Sepulvado, I think we've gotten this in spades, but

6:02 PM 11 just it make sure that we're clear, from your perspective as

6:02 PM 12 the well's site leader on the Macondo well, did you, as part of

6:03 PM 13 your responsibilities, have -- were you responsible for

6:03 PM 14 monitoring the well?

6:03 PM 15 A. No, ma'am.

6:03 PM 16 THE COURT: You know, if we've got this in spades

6:03 PM 17 already, I don't want to get it in other suits, you know. I've

6:03 PM 18 heard it enough.

6:03 PM 19 MS. KARIS: Fair enough, Your Honor. I'll move on.

6:03 PM 20 THE COURT: Let's move this along.

6:03 PM 21 MS. KARIS: Okay. I keep --

6:03 PM 22 THE COURT: Keep going. I mean skipping pages.

6:03 PM 23 MS. KARIS: Yes, that's what I'm doing, I promise.

6:03 PM 24 BY MS. KARIS:

6:03 PM 25 Q. We heard some today about the rig audit that was conducted

## RONNIE SEPULVADO - DIRECT

6 : 0 3 P M 1 on the *Deepwater Horizon* in September of 2010.

6 : 0 4 P M 2 First, are you familiar with that audit?

6 : 0 4 P M 3 A. Yes, ma'am.

6 : 0 4 P M 4 Q. Okay. And who conducts that audit?

6 : 0 4 P M 5 A. Richard Davies and I think a guy by the name of Wong out

6 : 0 4 P M 6 of our office.

6 : 0 4 P M 7 Q. Mr. Norman Wong?

6 : 0 4 P M 8 A. Mr. Norman Wong.

6 : 0 4 P M 9 Q. If we could pull up TREX-44018.

6 : 0 4 P M 10 Can you describe for us what is the general process

6 : 0 4 P M 11 for these audits -- for conducting these audits?

6 : 0 4 P M 12 A. The auditor will come out to the rig, and whoever's

6 : 0 4 P M 13 working the day tour will get a briefing, will go into the

6 : 0 4 P M 14 conference room with the OIM, toolpushers, and the head of

6 : 0 4 P M 15 the -- most of the rig's departments coming into that meeting

6 : 0 4 P M 16 and have these auditors just give a briefing, why they're

6 : 0 5 P M 17 there, what they're going to be doing. They tell us whether

6 : 0 5 P M 18 they're going to be there for one day, two days, or whatever.

6 : 0 5 P M 19 They go do their audit, and when the audit's

6 : 0 5 P M 20 finished, we have a debriefing. We go back into the conference

6 : 0 5 P M 21 room with the same people and they kind of go over some of the

6 : 0 5 P M 22 things -- audit findings. They don't give us a list of them at

6 : 0 5 P M 23 that time, but normally they'll go back to town and make that

6 : 0 5 P M 24 spreadsheet up and send them out to the rig.

6 : 0 5 P M 25 Q. And do they also issue a report in connection with their

## RONNIE SEPULVADO - DIRECT

6:05 PM 1 audit?

6:05 PM 2 A. Yes, ma'am.

6:05 PM 3 Q. And is this the report that was issued in connection with  
6:05 PM 4 the Marine Insurance Audit in September of 2009 for the  
6:05 PM 5 *Deepwater Horizon*?

6:05 PM 6 A. Yes, ma'am.

6:05 PM 7 Q. Okay. If we can go, please, to 44018.18.1.  
6:05 PM 8 You referenced a spreadsheet. Do you recognize this?

6:05 PM 9 A. Yes, ma'am.

6:05 PM 10 Q. All right. Can you tell the Court what this is?

6:05 PM 11 A. It tells you in that first column what they observed, what  
6:06 PM 12 they found. Then they make recommendations. And then they  
6:06 PM 13 tell you when they want -- what they want to do with it,  
6:06 PM 14 complete it or whatever. They'd never randomly -- you know, we  
6:06 PM 15 go through these spreadsheets and update the percent completed,  
6:06 PM 16 100 percent completed, what's not completed and why it's not  
6:06 PM 17 completed. And some of them run pretty long because they can't  
6:06 PM 18 get the part.

6:06 PM 19 Q. Is it fair to say this is a place where BP tracks both the  
6:06 PM 20 findings and then the action items that are being taken in  
6:06 PM 21 order to respond to those findings?

6:06 PM 22 A. Yes, ma'am.

6:06 PM 23 Q. And was that, in fact, done in connection with the  
6:06 PM 24 September of 2009 audit?

6:06 PM 25 A. Yes. They might not have all been closed out, but if for

## RONNIE SEPULVADO - DIRECT

6:06 PM 1 some reason they weren't closed out, we tried to make a  
6:06 PM 2 notation of it.

6:06 PM 3 Q. Fair enough.

6:06 PM 4 So while they may not have all been closed out, were  
6:07 PM 5 you tracking the progress made in connection with closing out  
6:07 PM 6 those audit findings?

6:07 PM 7 A. Yes, ma'am.

6:07 PM 8 Q. In connection with this particular audit, do you recall  
6:07 PM 9 whether Mr. Guide set up some meetings for tracking the closing  
6:07 PM 10 of these items?

6:07 PM 11 A. Personally, I'd talked to him one or two times. We had  
6:07 PM 12 phone conferences from my office, and he would be in the office  
6:07 PM 13 in Houston. Sometimes he would have somebody in there with  
6:07 PM 14 BP's marine department if it was a marine audit. And I'd  
6:07 PM 15 have -- in my office, I'd have an OIM, toolpushers, and the  
6:07 PM 16 heads of each department on the rig.

6:07 PM 17 And then we'd go over the spreadsheet, and they'd  
6:07 PM 18 fill them in. You know, if it was 80 percent complete on the  
6:07 PM 19 item, they'd say, put it down. If it was complete, they'd put  
6:07 PM 20 100 percent complete. And if it wasn't, it was usually because  
6:08 PM 21 they didn't have parts. They had ordered parts and hadn't got  
6:08 PM 22 them.

6:08 PM 23 MS. KARIS: Okay. If we can now pull up 47221.1.1.  
6:08 PM 24 Is there any way to enlarge that?

25

## RONNIE SEPULVADO - DIRECT

6:08 PM 1 **BY MS. KARIS:**

6:08 PM 2 **Q.** There's been reference in this case multiple times about

6:08 PM 3 these overdue maintenance items. I recognize this is difficult

6:08 PM 4 to read, so let me give it my best shot here.

6:08 PM 5 There's an entry in this spreadsheet: "Overdue

6:08 PM 6 maintenance in excess of 30 days was considered excessive,

6:08 PM 7 totaling 390 jobs and 3545 manhours. Many of the overdue

6:08 PM 8 maintenance items were high priority."

6:08 PM 9 Do you recall that finding?

6:08 PM 10 **A.** Yes, ma'am.

6:08 PM 11 **Q.** All right. And there's a recommendation there:

6:08 PM 12 "Communicate forward plan for reducing current level of overdue

6:08 PM 13 critical maintenance."

6:08 PM 14 Do you see that?

6:08 PM 15 **A.** Yes, ma'am.

6:08 PM 16 **Q.** All right. And then it's got a responsible department,

6:08 PM 17 Mr. Johnson. And then in the corner there, it says: "Percent

6:09 PM 18 complete."

6:09 PM 19 Do you see that, 100 percent?

6:09 PM 20 **A.** Yes, ma'am.

6:09 PM 21 **Q.** All right. Was there anything that you were aware of that

6:09 PM 22 was going on with Transocean's way of tracking items that led

6:09 PM 23 to this finding here about 3500 man hours and 390 jobs?

6:09 PM 24 **A.** They were going to a different tracking system, and they

6:09 PM 25 were going to what they call an RMS tracking system. And a lot

## RONNIE SEPULVADO - DIRECT

6:09 PM 1 of these things were duplicated during the process of going  
6:09 PM 2 from one system to another system.

6:09 PM 3 Q. And so the reference to 390 jobs, was that the result of  
6:09 PM 4 Transocean going from EMPAC -- excuse me, to RMS?

6:09 PM 5 A. Yes, ma'am.

6:09 PM 6 Q. So multiple items were counted multiple times?

6:09 PM 7 A. Yes, ma'am.

6:09 PM 8 Q. And the reference to percent complete, what does that  
6:09 PM 9 indicate?

6:09 PM 10 A. 100 percent complete.

6:10 PM 11 MS. KARIS: If we can just go to the -- 47361, just  
6:10 PM 12 to get the date. At the top there, please. If you can call  
6:10 PM 13 that out, please.

6:10 PM 14 BY MS. KARIS:

6:10 PM 15 Q. And so is it fair to say that after conducting this audit,  
6:10 PM 16 BP tracked the progress that Transocean was making on  
6:10 PM 17 Transocean conducting this maintenance and listed in this  
6:10 PM 18 spreadsheet?

6:10 PM 19 A. Yes, ma'am.

6:10 PM 20 Q. All right. And as somebody who was a well site leader for  
6:10 PM 21 multiple years, and to whom Mr. Underhill stipulated on your  
6:10 PM 22 qualifications, were you satisfied with the progress BP was  
6:10 PM 23 making on closing out those audit items?

6:10 PM 24 A. Yes, I was.

6:10 PM 25 Q. And did you think at any time that it was not safe to

6:10 PM 1 continue operating or for BP and Transocean to continue in  
6:11 PM 2 their team execution of the well plan, using the *Deepwater*  
6:11 PM 3 *Horizon*?

6:11 PM 4 A. No, ma'am, it was -- as far as I was concerned, it was a  
6:11 PM 5 safe rig to work on.

6:11 PM 6 **THE COURT:** Are you moving to another topic now,  
6:11 PM 7 Ms. Karis?

6:11 PM 8 **MS. KARIS:** I am, Your Honor.

6:11 PM 9 **THE COURT:** All right. Let's recess for today. It's  
6:11 PM 10 6:10. Obviously, I was overly optimistic that we could even  
6:11 PM 11 come close to finishing this witness today. So we'll recess  
6:11 PM 12 until tomorrow at 8:00 a.m. Okay.

6:11 PM 13 **THE DEPUTY CLERK:** All rise.

6:11 PM 14 (WHEREUPON, the proceedings were concluded.)

15 \*\*\*\*\*

16 **CERTIFICATE**

17 I, Jodi Simcox, RMR, FCRR, Official Court Reporter  
18 for the United States District Court, Eastern District of  
19 Louisiana, do hereby certify that the foregoing is a true and  
20 correct transcript, to the best of my ability and  
21 understanding, from the record of the proceedings in the  
22 above-entitled and numbered matter.

23  
24 *s/Jodi Simcox, RMR, FCRR*  
25 Jodi Simcox, RMR, FCRR  
Official Court Reporter

	16 [1] 1978/10	286809 [1] 1826/10
	1601 [1] 1816/3	28th [1] 1865/12
'01 [1] 1835/11	1665 [1] 1820/12	29th [1] 1866/15
'02 [1] 1835/11	16th [5] 1920/8 1986/3 1987/13 1988/23	2nd [1] 1965/9
'09 [1] 1889/9	1990/20	2s [1] 1932/8
'80s [1] 1825/16	1700 [1] 1820/9	
<b>0</b>	1759 [1] 1979/4	<b>3</b>
	1790 [1] 1978/2	3,000 feet [1] 1985/10
00050 [1] 1981/9	18 [1] 1965/9	3/25 [1] 1850/14
00537 [1] 1983/7	1885 [1] 1818/12	3/4/2010 [1] 1850/14
02771 [1] 1815/7	1887 [1] 1913/7	30 [4] 1919/11 1920/18 1923/2 1995/6
05618 [1] 1888/14	18th [3] 1860/15 1860/25 1976/1	300 [1] 1818/23
0687 [1] 1913/6	19 [1] 1850/5	3089 [1] 1819/17
0929 [1] 1913/6	1971 [2] 1918/23 1918/25	30th [3] 1884/19 1890/10 1919/17
<b>1</b>	1977 [2] 1919/3 1959/2	3326 [1] 1865/8
	1980 [2] 1919/4 1919/5	3326.2.1 [1] 1865/22
1-inch [1] 1927/2	19th [3] 1850/5 1860/25 1867/19	33261.1 [1] 1864/19
1-year [1] 1963/15	19th, and [1] 1860/15	335 [1] 1819/14
1/19 [1] 1850/5	1:00 [1] 1877/13	34 [1] 1919/13
10 [5] 1871/25 1875/18 1938/24 1958/22		34651.1 [1] 1864/8
1959/7	<b>2</b>	34652.1 [1] 1864/20
10 feet [3] 1875/20 1876/23 1877/2	2-H [1] 1874/5	3500 [1] 1995/23
10-CV-02771 [1] 1815/7	2-inch [1] 1927/4	3545 [1] 1995/7
10-CV-4536 [1] 1815/9	2.2 [2] 1876/13 1876/20	35th [1] 1819/14
10-MD-2179 [1] 1815/4	2.3 [1] 1877/9	3600 feet [1] 1981/17
10-minute [1] 1863/19	20 [3] 1815/5 1923/2 1958/17	36028 [1] 1817/13
100 [1] 1816/16	20-some [1] 1845/21	36130 [1] 1818/10
100 percent [5] 1915/4 1993/16 1994/20	20-something-hundred [1] 1948/14	365 [1] 1851/13
1995/19 1996/10	2000 [3] 1919/5 1919/6 1919/7	36604 [1] 1816/4
1000 [2] 1819/17 1820/16	20004 [2] 1817/25 1819/4	3668 [1] 1815/20
1001 [1] 1819/10	2001 [1] 1854/7	3700 [2] 1819/6 1819/10
101 [1] 1816/19	2003 [8] 1838/22 1870/14 1871/2 1884/10	390 [3] 1995/7 1995/23 1996/3
10:00 to [1] 1876/21	1884/19 1885/21 1886/21 1887/8	
10:30 [1] 1876/21	20044 [2] 1817/20 1818/6	<b>4</b>
11 [3] 1958/19 1958/20 1959/7	2005 [3] 1867/20 1867/22 1902/11	40 [1] 1986/20
1100 [1] 1819/6	2006 [1] 1846/7	4000 [1] 1820/16
1110 [1] 1819/20	2009 [8] 1841/19 1888/17 1890/10 1905/10	402 [1] 1816/10
11:38 [1] 1984/22	1906/14 1906/16 1993/4 1993/24	406 [1] 1820/19
12 [5] 1871/11 1874/23 1875/3 1952/13	2010 [35] 1815/5 1822/19 1841/25 1842/1	41053 [1] 1876/1
1970/19	1842/4 1842/6 1846/1 1846/10 1846/11	4310 [1] 1817/6
12 hours [1] 1921/8	1848/6 1850/6 1850/6 1850/7 1850/7 1850/14	435 [1] 1816/19
1200 [1] 1866/18	1854/7 1863/5 1865/12 1866/15 1876/17	4369 [3] 1969/25 1973/11 1973/12
1201 [2] 1819/3 1820/9	1884/4 1888/4 1892/3 1919/7 1919/16	4370 [1] 1973/24
1221 [1] 1820/5	1919/17 1920/3 1920/6 1922/1 1957/6	44018 [1] 1992/9
12:30 [2] 1866/18 1877/12	1963/14 1965/9 1977/1 1980/9 1992/1	44018.18.1 [1] 1993/7
12th [1] 1954/21	2011 [2] 1919/8 1929/16	450 [1] 1817/13
13 5/8 [2] 1978/16 1978/19	2012 [1] 1919/9	4500 [1] 1820/5
13 5/8-inch [1] 1875/23	2013 [2] 1815/7 1822/2	4536 [1] 1815/9
1308 [1] 1816/22	20th [19] 1822/19 1828/14 1842/6 1846/1	4603 [1] 1910/5
13150 [1] 1876/24	1846/10 1849/24 1850/19 1860/16 1861/12	47221.1.1 [1] 1994/23
13160 [1] 1876/24	1863/5 1868/17 1878/8 1878/15 1884/3	47361 [1] 1996/11
1331 [1] 1820/12	1888/4 1888/11 1892/3 1951/17 1968/17	47678 [1] 1972/7
13th [1] 1849/23	20th to [1] 1860/25	47780 [2] 1875/24 1875/25
14 [4] 1850/12 1870/20 1919/23 1919/23	21 [4] 1850/11 1850/12 1850/13 1850/14	48101 [1] 1933/12
14 days [1] 1850/12	21-day [1] 1850/15	48109 [1] 1930/3
14-inch [1] 1897/16	21109 [1] 1984/18	48110 [2] 1932/22 1935/25
14-pound [3] 1948/11 1956/5 1981/15	2143 [1] 1926/4	48113 [1] 1937/4
14.2 [1] 1856/3	2179 [1] 1815/4	48116 [1] 1924/21
14271 [1] 1817/25	22 [2] 1875/23 1876/17	48232 [1] 1833/5
1453 [2] 1833/5 1833/15	2211 [1] 1819/20	4th [1] 1850/7
1454 [2] 1826/1 1856/3	2216 [1] 1817/9	<b>5</b>
1454.215.3 [1] 1859/12	22347 [2] 1874/23 1874/24	50 [2] 1845/17 1847/23
1454215.1 [1] 1856/11	22nd [1] 1816/10	50 feet [1] 1875/18
14th [2] 1842/4 1957/6	23 [1] 1841/19	50-odd [1] 1828/22
15 [3] 1866/4 1923/2 1987/9	2300 pounds [1] 1949/4	50-plus [1] 1847/24
15 minutes [2] 1866/12 1866/23	23451 [1] 1816/10	50-some-odd [1] 1828/3
15 years [1] 1945/24	24 [3] 1952/13 1970/17 1970/21	500 [3] 1815/20 1818/9 1820/19
15,300 [1] 1978/17	24 hours [1] 1970/20	5000 [1] 1818/19
15-minute [1] 1912/20	24/7 [3] 1941/2 1941/5 1942/2	504 [1] 1820/20
1523 [1] 1841/22	25 [1] 1850/14	51350 [1] 1963/3
1527 [2] 1884/12 1884/15	25th [1] 1850/7	52652 [1] 1854/9
1527.1 [1] 1884/20	2615 [1] 1816/6	526521.2 [1] 1854/13
15th [1] 1867/21	2793 [1] 1989/22	



<p><b>5</b></p> <p>529 [1] 1954/15  533 [1] 1955/21  537 [1] 1957/3  5395 [1] 1817/13  546 [1] 1819/23  556 [1] 1815/20  557 [1] 1959/11  557.1.1 [1] 1960/3  5618 [1] 1905/9  571 [1] 1975/15  571.1.1 [1] 1975/9  571.13.4 [1] 1975/23  582 [1] 1870/20  589-7780 [1] 1820/20  596.7 [1] 1882/1  596.8 [1] 1882/24  596.9 [1] 1886/6  5th [1] 1842/16</p>	<p><b>9</b></p> <p>90071 [1] 1819/14  926 [1] 1842/3  94005 [1] 1818/13  94102 [1] 1817/14  9th [1] 1816/13  9th up [2] 1878/7 1878/15</p> <p><b>A</b></p> <p>A'g [1] 1955/10  A-B [1] 1940/12  A-chair [1] 1836/6  a.m [1] 1997/12  abandon [1] 1944/18  abandonment [5] 1951/24 1955/11 1956/14 1956/23 1979/25  ability [11] 1831/7 1836/11 1839/14 1857/12 1860/22 1861/1 1861/17 1875/6 1893/14 1922/9 1997/20  able [6] 1840/9 1892/6 1948/21 1968/21 1991/2 1991/8  aboard [14] 1867/1 1887/25 1888/10 1888/18 1888/19 1889/9 1890/13 1891/6 1894/4 1895/4 1901/19 1902/18 1951/22 1952/24  aborted [3] 1868/21 1868/25 1893/16  about [163] 1822/21 1824/21 1825/15 1826/18 1827/4 1830/15 1831/16 1831/17 1831/25 1833/5 1833/16 1835/25 1836/4 1837/6 1839/3 1841/14 1844/2 1844/7 1845/17 1847/23 1848/8 1848/20 1850/1 1850/3 1851/4 1854/6 1854/8 1856/12 1856/19 1856/19 1858/12 1859/20 1860/1 1860/22 1861/3 1861/13 1861/19 1862/13 1863/7 1863/14 1863/19 1865/5 1865/5 1867/2 1867/16 1868/10 1868/22 1868/23 1869/1 1871/20 1873/2 1873/20 1873/24 1874/3 1874/6 1874/14 1874/19 1875/11 1875/16 1875/21 1879/4 1880/4 1880/6 1880/10 1881/18 1881/19 1883/9 1884/7 1888/23 1889/9 1889/13 1889/14 1889/16 1890/13 1892/17 1893/25 1894/2 1894/10 1896/4 1896/7 1898/2 1899/13 1900/19 1900/23 1902/13 1903/19 1905/11 1905/13 1905/17 1905/20 1905/25 1906/2 1907/2 1908/22 1909/6 1909/25 1911/6 1912/3 1914/3 1917/5 1917/14 1918/17 1919/1 1919/2 1919/11 1919/12 1920/6 1920/10 1922/8 1922/22 1924/17 1924/25 1929/2 1930/6 1930/21 1931/25 1936/11 1937/16 1938/11 1939/7 1941/4 1942/12 1943/6 1945/13 1946/8 1947/21 1951/8 1951/16 1951/21 1952/12 1952/14 1952/14 1955/3 1955/3 1955/5 1958/14 1961/18 1962/4 1962/22 1964/13 1969/3 1970/15 1970/19 1970/20 1970/21 1971/24 1972/15 1972/24 1974/14 1974/16 1975/2 1975/3 1975/4 1976/6 1976/6 1976/18 1979/19 1979/24 1981/25 1984/13 1991/25 1995/2 1995/23  above [13] 1882/6 1886/3 1886/17 1889/25 1890/2 1925/24 1930/11 1934/14 1948/4 1948/6 1948/13 1956/4 1997/22  above-entitled [1] 1997/22  Abramson [1] 1816/5  absolutely [3] 1827/8 1834/8 1841/22  acceptable [1] 1921/17  access [3] 1830/10 1873/19 1938/2  accident [2] 1890/11 1966/10  accidents [1] 1966/7  accommodate [1] 1961/3  according [1] 1867/2  account [2] 1852/1 1902/23</p>	<p>accurate [3] 1859/16 1915/4 1938/10  accurately [1] 1838/24  achievable [1] 1965/23  achieve [1] 1978/16  achievement [2] 1965/20 1967/20  acronyms [1] 1904/3  across [3] 1990/24 1990/24 1991/2  act [2] 1922/9 1953/16  acting [4] 1850/24 1859/15 1909/9 1909/11  action [2] 1941/13 1993/20  actions [1] 1963/8  activate [7] 1831/7 1872/9 1872/17 1872/21 1872/24 1897/16 1935/12  activated [7] 1870/14 1871/16 1872/15 1884/23 1894/15 1897/24 1898/4  activities [4] 1901/18 1905/2 1939/17 1940/1  actual [7] 1873/8 1873/10 1899/14 1899/15 1904/17 1927/14 1983/23  actually [22] 1826/9 1828/24 1854/21 1855/22 1857/12 1871/4 1871/17 1876/8 1877/12 1882/19 1885/15 1889/18 1894/15 1896/13 1897/4 1902/23 1904/19 1904/20 1905/14 1912/3 1934/15 1953/1  adamant [2] 1831/18 1831/22  add [1] 1842/21  addition [5] 1880/13 1880/16 1882/9 1884/3 1961/24  additional [6] 1842/25 1869/8 1893/7 1987/7 1987/9 1987/13  address [2] 1890/12 1972/23  addressed [1] 1892/2  addressing [1] 1832/21  admiration [1] 1965/10  admit [2] 1914/2 1917/21  admitted [6] 1913/9 1914/10 1914/14 1915/14 1916/17 1917/8  ADs [1] 1973/10  advice [1] 1848/20  advise [2] 1840/18 1841/4  advisories [1] 1989/18  advisory [4] 1841/25 1842/4 1842/5 1842/16  affected [1] 1893/21  affecting [1] 1941/13  after [17] 1829/9 1829/13 1830/14 1842/25 1877/5 1889/22 1904/8 1906/17 1906/23 1951/25 1952/22 1977/18 1978/9 1982/9 1985/12 1985/25 1996/15  afternoon [8] 1815/14 1822/1 1822/5 1822/16 1822/17 1918/12 1947/12 1954/5  again [19] 1822/6 1826/10 1831/2 1840/14 1853/16 1853/25 1869/19 1878/12 1884/2 1887/19 1903/9 1903/10 1915/8 1915/20 1919/10 1951/16 1965/23 1978/6 1987/24  against [1] 1989/7  ago [2] 1871/3 1934/17  agree [26] 1826/23 1832/5 1832/24 1833/21 1834/2 1834/19 1835/13 1852/9 1852/20 1853/4 1853/17 1854/3 1869/22 1870/1 1873/6 1881/2 1881/17 1882/15 1882/16 1885/25 1901/17 1916/10 1942/20 1943/24 1944/11 1944/25  agreed [2] 1913/16 1946/18  agreed-upon [1] 1913/16  agreement [1] 1916/7  ahead [7] 1840/13 1905/19 1913/6 1916/20 1954/11 1958/4 1990/12  aided [1] 1820/24  air [1] 1926/11  aircraft [1] 1904/15  al [2] 1815/8 1815/11  Alabama [5] 1816/4 1818/7 1818/8 1818/10 1953/24  alarm [1] 1838/15</p>
<p><b>6</b></p> <p>6 5/8 [1] 1981/17  600 [4] 1816/10 1816/13 1819/17 1959/20  601 [1] 1816/6  60654 [1] 1818/24  618 [1] 1817/3  6809 [1] 1826/14  6:10 [1] 1997/10</p>	<p><b>7</b></p> <p>7-5395 [1] 1817/13  70 [1] 1911/25  701 [2] 1818/16 1818/19  70113 [1] 1815/24  70130 [6] 1816/7 1816/13 1817/10 1818/17 1819/24 1820/19  70139 [1] 1818/20  70163 [1] 1819/7  70360 [1] 1816/20  70458 [1] 1816/23  70501 [1] 1819/18  70502 [1] 1815/21  70801 [1] 1817/4  70804 [1] 1818/13  711 [1] 1841/16  727 [1] 1864/9  75270 [1] 1820/10  7611 [1] 1817/19  76521.2 [1] 1866/14  76522.1 [1] 1866/17  7685.1.2 [1] 1976/23  77002 [2] 1819/10 1820/17  77006 [1] 1817/7  77010 [2] 1820/5 1820/13  77098 [1] 1819/21  7780 [1] 1820/20  78257 [1] 1816/17  7:30 [1] 1971/2  7:30 in [2] 1969/17 1970/14</p>	<p><b>8</b></p> <p>8/6 [1] 1948/11  80 [4] 1938/24 1938/25 1939/7 1939/8  80 percent [1] 1994/18  8179 [2] 1835/20 1836/19  8180 [2] 1838/6 1838/17  820 [1] 1815/23  836 [1] 1980/6  87159 [1] 1989/1  8:00 a.m [1] 1997/12  8th [1] 1850/6</p>

<p><b>A</b></p> <p>ALEX [1] 1820/4</p> <p>all [174] 1822/4 1822/5 1826/22 1827/10 1829/23 1834/10 1834/25 1836/17 1836/20 1836/22 1837/4 1837/8 1837/10 1837/11 1839/8 1844/9 1847/5 1848/6 1850/21 1850/22 1852/18 1853/21 1856/11 1857/25 1859/6 1859/12 1861/5 1862/10 1863/21 1863/22 1863/25 1865/10 1873/12 1873/14 1874/18 1874/23 1874/25 1879/22 1880/19 1881/10 1881/22 1883/17 1883/19 1887/13 1888/13 1888/24 1890/22 1892/19 1893/4 1893/6 1894/2 1894/8 1895/4 1895/18 1896/22 1898/1 1898/24 1899/25 1901/8 1902/7 1903/9 1903/17 1905/24 1906/6 1906/25 1907/7 1909/8 1910/2 1910/8 1910/10 1910/17 1912/7 1912/7 1912/17 1912/20 1912/22 1912/24 1913/8 1913/12 1916/11 1917/6 1921/5 1921/20 1928/7 1929/23 1931/4 1935/4 1938/19 1941/5 1942/18 1944/3 1946/12 1947/6 1948/11 1948/20 1949/3 1949/6 1952/12 1952/14 1953/22 1955/25 1956/16 1956/23 1956/25 1957/24 1958/1 1958/19 1959/23 1960/1 1960/17 1960/25 1962/3 1962/3 1962/22 1962/24 1963/2 1963/14 1963/18 1963/18 1963/21 1965/6 1965/8 1965/21 1966/11 1968/1 1968/13 1968/22 1969/7 1969/12 1969/24 1971/1 1971/20 1972/15 1973/17 1974/5 1974/7 1975/15 1976/5 1976/10 1977/17 1977/23 1978/20 1978/24 1979/3 1979/9 1979/16 1979/21 1980/5 1980/15 1980/16 1981/5 1981/8 1982/8 1983/6 1983/12 1983/17 1984/12 1984/25 1985/3 1985/6 1985/22 1986/15 1987/12 1988/3 1988/22 1993/10 1993/25 1994/4 1995/11 1995/16 1995/21 1996/20 1997/9 1997/13</p> <p>ALLAN [1] 1818/15</p> <p>allow [3] 1876/10 1950/22 1951/23</p> <p>allowed [2] 1883/19 1912/12</p> <p>almost [3] 1919/20 1958/17 1958/22</p> <p>along [9] 1834/7 1906/2 1914/6 1914/13 1926/18 1977/5 1982/22 1983/2 1991/20</p> <p>already [12] 1834/6 1842/22 1847/17 1880/9 1885/13 1892/25 1913/13 1915/14 1959/4 1968/2 1973/4 1991/17</p> <p>also [43] 1825/4 1833/6 1837/4 1843/21 1848/9 1848/15 1848/19 1849/4 1849/8 1850/5 1850/6 1861/6 1866/25 1872/17 1874/11 1876/7 1877/23 1880/14 1884/4 1885/18 1896/22 1899/22 1906/3 1906/6 1906/6 1913/16 1922/24 1927/3 1927/4 1927/7 1928/4 1928/9 1929/7 1931/13 1938/15 1961/25 1966/8 1970/20 1972/5 1973/17 1975/13 1975/22 1992/25</p> <p>although [1] 1901/3</p> <p>altogether [1] 1902/9</p> <p>always [7] 1840/20 1840/23 1878/1 1892/6 1897/18 1909/4 1948/2</p> <p>am [3] 1837/7 1870/21 1997/8</p> <p>AMERICA [9] 1815/10 1817/12 1817/16 1817/22 1818/3 1818/19 1818/22 1819/3 1842/13</p> <p>amount [4] 1835/9 1948/25 1949/16 1951/4</p> <p>analysis [1] 1895/25</p> <p>anchored [1] 1923/25</p> <p>Anderson [6] 1832/14 1844/17 1867/4 1867/12 1907/22 1968/16</p> <p>ANDREW [1] 1818/22</p> <p>Angeles [1] 1819/14</p> <p>anger [1] 1905/17</p> <p>angle [2] 1930/11 1978/22</p>	<p>animal [1] 1918/23</p> <p>animated [1] 1835/23</p> <p>animation [1] 1830/1</p> <p>annular [20] 1845/23 1846/6 1846/12 1857/6 1862/14 1862/20 1863/1 1863/5 1863/7 1863/12 1866/22 1868/19 1869/2 1869/6 1893/4 1907/2 1907/8 1907/17 1945/14 1948/12</p> <p>annulars [5] 1830/11 1892/16 1892/16 1892/20 1892/21</p> <p>another [12] 1884/2 1892/22 1923/12 1926/8 1931/13 1932/20 1937/2 1967/13 1972/5 1986/20 1996/2 1997/6</p> <p>answer [7] 1839/25 1846/14 1853/21 1853/23 1891/3 1908/1 1914/22</p> <p>answered [5] 1831/25 1840/8 1853/20 1899/8 1973/4</p> <p>answers [1] 1914/19</p> <p>ANTHONY [1] 1817/9</p> <p>Antonio [1] 1816/17</p> <p>any [101] 1827/4 1829/2 1830/10 1832/6 1833/13 1835/19 1837/18 1844/12 1844/18 1844/20 1847/2 1856/15 1860/22 1861/1 1861/3 1861/12 1861/17 1862/8 1868/13 1877/1 1886/20 1887/10 1887/16 1888/19 1890/4 1892/2 1892/5 1893/12 1893/22 1894/8 1897/11 1897/12 1899/1 1899/4 1899/5 1899/12 1899/17 1900/6 1901/6 1906/20 1907/5 1907/5 1909/6 1909/25 1912/2 1913/8 1913/19 1913/20 1913/24 1914/1 1914/5 1914/8 1915/25 1917/6 1921/12 1922/6 1922/8 1925/15 1928/14 1930/22 1931/1 1931/11 1931/11 1931/23 1935/12 1935/21 1935/21 1941/23 1944/6 1944/13 1945/11 1945/12 1946/8 1946/10 1949/8 1953/24 1956/2 1960/12 1966/9 1966/9 1966/10 1967/6 1967/9 1968/19 1968/25 1970/13 1970/17 1970/21 1970/25 1971/9 1971/12 1971/15 1972/4 1972/23 1976/15 1986/3 1987/16 1989/18 1990/18 1994/24 1996/25</p> <p>anybody [11] 1890/13 1914/1 1928/23 1929/10 1929/20 1942/4 1945/11 1945/12 1971/11 1974/24 1986/13</p> <p>anyone [4] 1872/14 1890/12 1907/5 1917/6</p> <p>anything [25] 1839/2 1862/1 1862/9 1892/25 1899/1 1899/1 1904/23 1917/14 1935/15 1942/8 1947/8 1949/22 1951/6 1951/16 1952/12 1957/10 1961/18 1971/13 1971/15 1973/1 1979/19 1982/1 1985/7 1985/17 1995/21</p> <p>anywhere [7] 1900/8 1932/10 1932/12 1938/17 1940/25 1951/12 1967/3</p> <p>APLC [1] 1818/18</p> <p>apologize [4] 1853/15 1868/18 1876/1 1973/4</p> <p>Appearances [6] 1815/17 1816/1 1817/1 1818/1 1819/1 1820/1</p> <p>appears [1] 1868/1</p> <p>applications [1] 1990/9</p> <p>Applies [1] 1815/6</p> <p>appreciate [2] 1847/18 1915/19</p> <p>appreciation [2] 1967/20 1967/22</p> <p>appropriately [1] 1844/7</p> <p>approval [1] 1985/9</p> <p>approved [1] 1985/11</p> <p>approximately [3] 1924/7 1927/11 1978/10</p> <p>APRIL [40] 1815/5 1822/19 1828/14 1841/25 1842/1 1842/4 1842/6 1842/16 1846/1 1846/10 1848/6 1849/22 1850/19 1861/12 1863/5 1878/7 1878/7 1878/15 1878/15 1884/3 1888/4 1888/11 1892/3 1906/17 1920/3 1920/6 1920/8 1922/1</p>	<p>1954/21 1957/6 1963/14 1965/9 1968/17 1976/1 1980/9 1980/23 1984/21 1986/3 1987/13 1990/20</p> <p>April 12th [1] 1954/21</p> <p>April 12th in [1] 1980/23</p> <p>April 12th of [1] 1980/9</p> <p>April 14th [2] 1842/4 1957/6</p> <p>April 15th here [1] 1984/21</p> <p>April 16th [4] 1920/8 1986/3 1987/13 1990/20</p> <p>April 18th [1] 1976/1</p> <p>April 20th [11] 1822/19 1828/14 1842/6 1846/1 1846/10 1863/5 1884/3 1888/4 1888/11 1892/3 1968/17</p> <p>April 20th of [1] 1842/1</p> <p>April 2nd [1] 1965/9</p> <p>April 2nd of [1] 1963/14</p> <p>April 5th of [1] 1841/25</p> <p>April of [1] 1922/1</p> <p>ARCO [4] 1919/5 1919/6 1958/25 1964/21</p> <p>are [68] 1826/8 1828/13 1831/2 1833/6 1837/6 1840/19 1842/7 1847/7 1857/6 1858/4 1860/12 1873/11 1874/13 1874/20 1877/20 1878/9 1880/19 1881/15 1886/12 1897/11 1900/19 1902/1 1913/9 1913/19 1914/10 1914/14 1915/25 1916/17 1917/8 1918/18 1921/4 1924/25 1926/13 1933/17 1933/22 1934/4 1935/20 1936/5 1937/3 1937/16 1938/18 1939/24 1947/6 1955/13 1957/7 1957/16 1957/24 1963/21 1965/3 1967/19 1971/25 1973/18 1980/9 1983/17 1983/20 1984/25 1985/8 1985/13 1986/25 1988/6 1988/9 1988/12 1988/14 1989/11 1989/18 1992/2 1993/20 1997/6</p> <p>area [4] 1839/3 1848/12 1882/6 1937/5</p> <p>areas [1] 1854/15</p> <p>aren't [5] 1829/22 1829/25 1837/16 1881/16 1936/3</p> <p>argument [1] 1960/12</p> <p>around [20] 1870/14 1870/22 1871/1 1889/22 1910/3 1910/8 1914/1 1915/24 1928/19 1928/20 1937/17 1940/25 1941/10 1948/2 1948/12 1951/11 1951/14 1960/24 1971/11 1989/8</p> <p>arrangement [6] 1924/18 1924/23 1925/1 1925/8 1937/2 1937/8</p> <p>arrangements [1] 1920/23</p> <p>array [1] 1837/4</p> <p>Arrell [1] 1819/19</p> <p>arrive [1] 1910/12</p> <p>arrived [4] 1940/22 1977/18 1988/22 1990/19</p> <p>arriving [1] 1987/13</p> <p>arrow [1] 1925/3</p> <p>as [148] 1822/13 1823/6 1825/2 1828/24 1830/23 1830/24 1831/12 1831/21 1831/21 1831/22 1831/25 1833/25 1836/15 1838/13 1838/13 1838/24 1839/22 1840/16 1843/23 1843/25 1846/1 1848/12 1848/12 1848/14 1849/18 1853/2 1853/2 1855/14 1856/7 1856/8 1856/14 1859/4 1861/6 1861/16 1862/7 1863/1 1864/5 1867/6 1870/12 1870/12 1871/3 1872/4 1872/8 1872/11 1875/11 1876/7 1879/6 1882/7 1882/22 1883/17 1885/8 1887/9 1888/9 1888/9 1889/8 1890/4 1890/4 1891/7 1892/10 1892/11 1893/19 1895/18 1897/19 1904/24 1904/25 1904/25 1906/13 1906/21 1906/21 1909/16 1909/24 1910/16 1913/14 1913/15 1913/15 1916/23 1918/2 1919/3 1919/6 1919/9 1919/11 1920/13 1921/18 1922/9 1923/3 1926/18 1926/20 1927/11 1928/19 1934/19 1934/23 1936/12 1936/15 1938/2 1939/9</p>
---	--	--

<p><b>A</b></p> <p>as... [53] 1940/20 1943/24 1945/2 1945/2 1947/2 1949/1 1949/2 1949/2 1950/3 1950/7 1951/21 1951/24 1952/11 1952/11 1952/24 1953/12 1953/16 1958/24 1958/25 1959/2 1959/4 1959/21 1961/10 1961/10 1961/19 1962/7 1962/7 1962/7 1964/4 1964/21 1965/15 1968/10 1968/10 1970/9 1970/9 1971/5 1971/9 1975/19 1978/6 1979/20 1981/25 1982/2 1982/2 1982/23 1986/9 1986/9 1987/4 1990/13 1991/11 1991/12 1996/20 1997/4 1997/4</p> <p>Asbill [1] 1819/8</p> <p>ashore [1] 1952/2</p> <p>ask [40] 1835/24 1840/13 1851/4 1851/6 1851/12 1854/8 1856/1 1856/11 1856/20 1857/9 1857/13 1857/18 1862/24 1869/19 1872/14 1875/21 1876/20 1878/11 1880/3 1881/13 1881/22 1885/15 1898/25 1903/11 1905/4 1907/1 1907/12 1911/6 1917/13 1920/2 1924/25 1930/6 1930/7 1942/11 1953/19 1961/13 1971/9 1971/11 1973/21 1988/6</p> <p>asked [21] 1831/25 1847/16 1853/20 1862/13 1862/15 1883/9 1895/24 1899/8 1903/19 1907/2 1908/21 1911/6 1911/11 1911/12 1911/14 1929/13 1929/14 1949/10 1976/5 1977/21 1979/24</p> <p>asking [11] 1824/12 1852/15 1853/15 1869/1 1874/3 1900/15 1955/3 1955/6 1967/6 1971/15 1977/3</p> <p>aspects [1] 1924/18</p> <p>assembly [1] 1990/15</p> <p>ASSET [1] 1815/8</p> <p>assign [1] 1972/3</p> <p>assigned [6] 1890/19 1919/18 1923/9 1924/6 1968/23 1980/13</p> <p>assignment [1] 1919/24</p> <p>assist [5] 1833/13 1948/22 1950/24 1951/2 1986/10</p> <p>assistant [6] 1862/8 1865/11 1872/23 1900/2 1930/15 1933/1</p> <p>associated [3] 1863/8 1968/8 1990/23</p> <p>Assume [1] 1894/14</p> <p>atmosphere [2] 1936/6 1936/20</p> <p>attach [1] 1926/19</p> <p>attached [2] 1927/4 1985/6</p> <p>attachments [1] 1865/15</p> <p>attempt [2] 1832/22 1845/14</p> <p>attempting [1] 1846/20</p> <p>attended [2] 1828/14 1888/5</p> <p>attendees [1] 1970/4</p> <p>attending [1] 1840/24</p> <p>attention [2] 1944/9 1944/10</p> <p>Attorney [2] 1818/7 1818/11</p> <p>audit [17] 1906/3 1974/21 1974/24 1974/24 1991/25 1992/2 1992/4 1992/19 1992/22 1993/1 1993/4 1993/24 1994/6 1994/8 1994/14 1996/15 1996/23</p> <p>audit's [1] 1992/19</p> <p>auditor [1] 1992/12</p> <p>auditors [1] 1992/16</p> <p>audits [5] 1974/18 1975/11 1975/16 1992/11 1992/11</p> <p>authored [1] 1954/18</p> <p>authority [14] 1856/13 1872/9 1872/17 1872/20 1872/24 1885/14 1909/4 1909/5 1909/16 1909/20 1910/21 1911/8 1911/12 1911/13</p> <p>authorized [1] 1935/12</p> <p>available [10] 1834/22 1834/23 1835/1 1836/18 1836/25 1837/11 1839/11 1851/8</p>	<p>1873/13 1879/3</p> <p>Avenue [5] 1815/23 1817/13 1818/9 1819/3 1819/14</p> <p>avoiding [1] 1901/20</p> <p>aware [29] 1835/19 1837/17 1837/20 1837/21 1837/24 1838/2 1842/22 1843/17 1843/21 1843/25 1868/18 1869/2 1873/3 1877/24 1883/22 1888/12 1890/16 1890/17 1891/8 1891/11 1893/3 1893/13 1893/23 1894/19 1895/1 1897/11 1987/7 1989/18 1995/21</p> <p>away [2] 1881/13 1887/4</p> <p><b>B</b></p> <p>back [65] 1847/17 1851/12 1855/10 1856/21 1857/1 1858/7 1858/14 1860/16 1863/24 1864/19 1869/12 1869/23 1870/14 1874/18 1876/15 1877/18 1878/4 1878/13 1889/21 1889/23 1890/2 1895/5 1896/12 1905/21 1906/23 1906/24 1912/12 1922/20 1923/6 1929/10 1932/2 1932/2 1933/3 1935/25 1941/8 1945/12 1947/22 1948/10 1948/19 1949/1 1949/6 1949/7 1949/8 1949/11 1949/16 1950/1 1951/14 1954/8 1956/9 1956/19 1956/19 1958/12 1961/4 1962/24 1971/18 1973/11 1976/10 1976/16 1981/3 1982/4 1987/22 1988/4 1988/6 1992/20 1992/23</p> <p>background [2] 1958/15 1964/18</p> <p>backlit [1] 1933/22</p> <p>backside [1] 1950/16</p> <p>backup [2] 1836/15 1836/16</p> <p>bad [3] 1883/6 1906/21 1936/19</p> <p>ball [1] 1990/10</p> <p>ballast [2] 1940/7 1940/10</p> <p>Bankston [4] 1895/5 1896/22 1897/4 1912/10</p> <p>BARBIER [2] 1815/15 1880/10</p> <p>Baroid [1] 1918/25</p> <p>barrel [2] 1949/5 1949/17</p> <p>barrels [3] 1949/17 1949/18 1949/19</p> <p>barrier [6] 1825/23 1827/12 1827/14 1829/14 1843/16 1953/16</p> <p>barriers [1] 1843/17</p> <p>base [3] 1868/6 1868/6 1923/6</p> <p>based [15] 1824/17 1829/19 1831/12 1837/14 1845/13 1845/20 1846/19 1902/16 1957/11 1964/24 1968/15 1969/7 1972/18 1985/7 1986/2</p> <p>basic [6] 1825/19 1842/22 1843/8 1843/9 1843/12 1985/12</p> <p>basically [4] 1824/24 1921/10 1939/24 1953/11</p> <p>basis [4] 1824/13 1858/17 1878/17 1969/15</p> <p>Baton [2] 1817/4 1818/13</p> <p>be [181] 1822/6 1822/11 1822/25 1823/25 1824/21 1827/17 1827/17 1828/4 1828/5 1828/24 1830/7 1831/15 1831/18 1834/10 1834/15 1834/21 1836/8 1837/18 1837/19 1837/20 1837/20 1837/21 1837/24 1838/1 1838/2 1840/9 1841/8 1841/11 1841/12 1842/24 1842/24 1844/6 1844/13 1844/22 1844/23 1845/16 1847/18 1848/24 1849/1 1849/2 1849/4 1849/5 1849/8 1850/10 1850/11 1853/1 1853/2 1854/2 1855/8 1855/16 1855/17 1857/16 1858/3 1858/4 1858/11 1859/6 1860/5 1860/7 1860/10 1861/21 1863/22 1864/15 1865/14 1867/24 1868/7 1869/13 1869/13 1869/24 1869/24 1870/7 1870/16 1870/25 1871/6 1873/8 1873/10 1877/24 1878/23 1879/4 1879/11 1879/13 1882/1 1885/11 1886/6 1886/14 1889/25 1891/8 1891/10 1891/11 1891/12</p>	<p>1892/1 1892/22 1894/15 1897/7 1897/24 1898/4 1898/6 1898/8 1900/2 1900/7 1900/8 1900/11 1900/14 1909/21 1909/23 1912/18 1912/25 1916/8 1916/14 1918/18 1918/18 1920/21 1922/24 1926/8 1926/21 1927/14 1929/3 1932/19 1935/15 1937/13 1937/19 1938/20 1939/22 1941/18 1942/4 1942/5 1942/7 1944/4 1944/14 1945/1 1945/7 1946/15 1946/16 1946/18 1946/23 1947/13 1948/21 1949/17 1949/24 1949/25 1950/2 1950/3 1950/5 1950/6 1950/8 1950/9 1951/10 1951/23 1952/3 1953/2 1957/1 1957/2 1960/11 1962/16 1962/25 1963/6 1965/14 1965/23 1966/7 1966/25 1968/7 1969/19 1972/15 1972/20 1973/5 1975/6 1976/18 1977/11 1978/9 1978/22 1979/1 1983/22 1985/11 1986/18 1988/25 1989/11 1990/9 1991/2 1991/8 1992/17 1992/18 1994/12</p> <p>beach [5] 1816/10 1922/13 1922/20 1929/11 1945/12</p> <p>beat [1] 1908/9</p> <p>because [33] 1836/10 1842/21 1843/3 1871/1 1871/23 1877/20 1882/18 1884/13 1889/18 1892/1 1894/3 1896/10 1898/19 1907/12 1912/11 1920/9 1924/4 1928/17 1929/23 1936/6 1936/24 1939/4 1946/12 1949/15 1950/15 1951/8 1951/17 1953/8 1962/15 1981/2 1981/24 1993/17 1994/20</p> <p>Beck [2] 1820/2 1820/3</p> <p>become [1] 1990/13</p> <p>becomes [1] 1882/19</p> <p>been [116] 1822/12 1823/14 1823/20 1823/21 1824/8 1824/10 1824/15 1824/15 1824/18 1825/13 1825/15 1825/17 1828/4 1828/9 1829/1 1831/17 1831/24 1832/19 1835/11 1838/8 1838/10 1838/13 1839/5 1839/6 1839/13 1841/15 1842/15 1843/2 1843/4 1844/9 1846/6 1846/9 1846/11 1846/22 1847/16 1847/17 1849/23 1850/1 1850/2 1850/9 1850/13 1850/15 1853/19 1857/3 1861/9 1865/18 1870/4 1871/25 1872/11 1874/2 1876/11 1883/10 1884/14 1884/24 1889/3 1889/5 1890/20 1890/25 1891/3 1891/6 1892/9 1897/4 1897/6 1899/7 1900/24 1903/1 1906/2 1909/9 1909/11 1909/13 1909/17 1910/17 1913/13 1914/5 1914/5 1915/14 1918/1 1922/4 1922/5 1923/9 1924/4 1924/6 1928/14 1928/16 1928/17 1929/5 1931/20 1940/21 1940/21 1940/23 1945/23 1958/17 1958/19 1959/3 1960/2 1961/21 1962/4 1963/6 1964/20 1964/21 1969/3 1973/7 1973/7 1973/9 1975/16 1975/25 1977/14 1979/21 1982/25 1983/1 1986/24 1987/13 1989/3 1993/25 1994/4 1995/2</p> <p>before [45] 1815/15 1826/25 1832/23 1850/1 1852/25 1853/5 1862/3 1864/4 1864/20 1868/14 1870/2 1871/12 1872/14 1884/3 1889/10 1897/16 1897/24 1897/25 1907/4 1913/2 1921/25 1922/19 1922/21 1923/8 1930/20 1933/16 1943/13 1944/18 1945/15 1945/16 1946/14 1947/12 1949/11 1951/23 1952/9 1953/20 1956/5 1956/20 1957/14 1958/14 1965/9 1972/1 1979/25 1981/2 1981/15</p> <p>begins [1] 1980/15</p> <p>behalf [5] 1913/5 1915/11 1947/13 1954/5 1960/10</p> <p>behind [4] 1839/17 1889/3 1932/25 1955/4</p> <p>being [26] 1831/18 1831/21 1837/24 1838/3 1859/21 1862/15 1868/22 1879/21 1890/6 1891/22 1891/25 1892/4 1892/15 1893/9 1894/6 1895/18 1895/19 1897/21 1906/23</p>
---	--	--

<p><b>B</b></p> <p>being... [7] 1931/3 1969/7 1983/3 1983/3 1986/5 1987/8 1993/20</p> <p>believe [27] 1823/12 1832/6 1836/20 1844/5 1849/21 1849/25 1855/10 1860/19 1867/10 1867/17 1869/10 1869/15 1869/25 1874/1 1877/1 1883/10 1886/20 1886/23 1899/7 1903/23 1905/4 1910/4 1911/3 1914/18 1958/2 1965/24 1980/8</p> <p>believed [1] 1851/1</p> <p>below [7] 1853/13 1875/19 1926/2 1932/19 1957/7 1983/17 1985/10</p> <p>Ben [1] 1818/5</p> <p>Bertone [7] 1888/1 1888/16 1889/8 1890/6 1905/5 1905/11 1906/13</p> <p>Bertone's [1] 1890/12</p> <p>best [13] 1823/1 1823/10 1834/25 1838/24 1847/16 1860/21 1871/3 1872/5 1886/25 1886/25 1896/24 1995/4 1997/20</p> <p>better [3] 1865/8 1865/9 1914/23</p> <p>between [11] 1832/10 1837/21 1841/9 1849/18 1859/21 1860/2 1908/22 1926/24 1969/4 1970/8 1970/12</p> <p>beyond [5] 1894/13 1899/17 1910/25 1911/3 1958/15</p> <p>BHP [1] 1919/10</p> <p>BHP Billiton [1] 1919/10</p> <p>big [4] 1895/6 1896/10 1897/16 1897/16</p> <p>bigger [1] 1847/15</p> <p>bill [5] 1842/11 1910/2 1910/6 1910/20 1910/24</p> <p>Billiton [1] 1919/10</p> <p>bit [20] 1847/15 1847/18 1854/6 1856/19 1863/14 1864/18 1870/10 1870/22 1884/13 1887/3 1914/23 1924/17 1925/19 1930/24 1931/6 1934/11 1935/1 1941/11 1958/12 1958/14</p> <p>bits [5] 1928/13 1928/13 1928/21 1976/20 1976/20</p> <p>bladder [8] 1862/14 1862/17 1863/9 1863/10 1907/2 1907/4 1945/9 1945/13</p> <p>blades [1] 1988/12</p> <p>Bldg [1] 1817/13</p> <p>bled [4] 1866/22 1869/23 1877/17 1949/7</p> <p>bleed [8] 1869/12 1947/22 1948/10 1948/15 1948/19 1949/6 1949/11 1951/4</p> <p>bleed-back [3] 1947/22 1948/19 1949/11</p> <p>bleedback [3] 1877/17 1949/20 1950/21</p> <p>blind [5] 1872/3 1898/12 1898/13 1898/20 1935/1</p> <p>block [1] 1930/16</p> <p>blow [6] 1826/14 1896/10 1896/11 1896/11 1934/10 1962/18</p> <p>blowing [2] 1897/4 1897/5</p> <p>blown [1] 1925/15</p> <p>blowout [4] 1837/10 1883/23 1884/4 1889/10</p> <p>blowup [1] 1934/20</p> <p>blue [3] 1891/13 1891/14 1891/18</p> <p>Bly [6] 1914/3 1914/4 1914/9 1916/4 1917/4 1917/7</p> <p>Bly's [1] 1913/17</p> <p>Bly-related [1] 1917/7</p> <p>board [12] 1849/22 1850/2 1850/23 1851/1 1859/4 1861/4 1861/13 1862/7 1872/20 1872/23 1904/11 1929/4</p> <p>boat [6] 1895/19 1897/13 1897/13 1897/14 1897/15 1912/11</p> <p>boats [1] 1984/1</p> <p>Bockius [1] 1820/14</p> <p>bodied [1] 1988/10</p> <p>bond [6] 1823/7 1823/9 1823/15 1823/18</p>	<p>1824/8 1824/14</p> <p>bonus [1] 1966/11</p> <p>bonuses [1] 1966/6</p> <p>book [1] 1876/8</p> <p>BOP [52] 1829/14 1829/24 1830/2 1830/4 1830/5 1830/10 1830/14 1845/25 1853/13 1868/19 1869/2 1881/20 1882/20 1883/1 1883/16 1883/18 1884/1 1885/6 1885/16 1885/18 1891/6 1892/16 1893/10 1926/24 1933/7 1933/13 1933/16 1934/4 1935/5 1935/7 1935/13 1936/1 1936/14 1936/23 1942/12 1942/13 1942/16 1942/18 1942/24 1943/1 1948/4 1948/6 1948/12 1949/25 1950/14 1950/17 1951/12 1990/11 1990/24 1991/2 1991/3 1991/4</p> <p>BOPs [1] 1829/21</p> <p>bore [2] 1885/22 1885/25</p> <p>boss [3] 1964/1 1965/6 1968/2</p> <p>bosuns [1] 1940/12</p> <p>both [8] 1822/19 1848/11 1855/23 1916/10 1948/20 1962/7 1982/5 1993/19</p> <p>bottom [13] 1908/21 1925/18 1933/25 1934/7 1934/7 1934/23 1948/13 1953/17 1954/17 1955/23 1957/5 1963/9 1988/14</p> <p>bought [1] 1919/6</p> <p>Boulevard [1] 1817/6</p> <p>Bounds [1] 1816/2</p> <p>bow [6] 1988/13 1988/14 1988/21 1988/25 1989/3 1990/22</p> <p>BOWMAN [1] 1820/8</p> <p>box [7] 1815/20 1817/13 1817/19 1817/25 1818/13 1819/17 1936/6</p> <p>BP [81] 1815/10 1818/18 1818/19 1818/20 1818/21 1818/22 1818/23 1819/2 1819/3 1819/4 1823/2 1828/15 1832/6 1847/5 1848/14 1848/24 1849/1 1849/11 1850/23 1857/22 1860/12 1862/22 1868/10 1874/11 1878/1 1878/23 1879/3 1879/6 1879/8 1893/19 1906/3 1907/9 1911/11 1916/4 1917/5 1917/16 1919/6 1919/15 1920/12 1920/16 1920/17 1921/4 1921/11 1921/13 1921/14 1921/17 1923/12 1923/13 1932/2 1945/11 1945/25 1951/21 1952/1 1953/7 1953/15 1954/20 1958/6 1958/19 1958/24 1959/8 1959/9 1959/16 1959/20 1959/21 1961/15 1961/15 1962/1 1962/7 1962/15 1963/7 1966/2 1967/4 1967/6 1967/9 1969/8 1974/9 1975/19 1993/19 1996/16 1996/22 1997/1</p> <p>BP's [13] 1823/23 1827/17 1902/10 1911/14 1921/10 1958/2 1960/22 1967/23 1969/4 1970/8 1971/4 1984/25 1994/14</p> <p>BP-owned [2] 1923/12 1923/13</p> <p>BRAD [1] 1819/13</p> <p>Branch [3] 1817/12 1817/22 1818/3</p> <p>break [4] 1833/25 1859/9 1864/4 1917/3</p> <p>breaking [1] 1928/13</p> <p>breath [1] 1903/17</p> <p>Breit [2] 1816/8 1816/9</p> <p>Brennan [1] 1819/8</p> <p>BRIAN [6] 1819/13 1954/18 1954/18 1955/6 1957/5 1984/6</p> <p>bridge [11] 1830/7 1831/5 1885/19 1898/4 1910/15 1933/19 1937/9 1937/20 1940/1 1940/4 1940/10</p> <p>brief [2] 1903/13 1918/13</p> <p>briefed [1] 1841/15</p> <p>briefing [2] 1992/13 1992/16</p> <p>briefly [7] 1831/16 1836/4 1841/13 1905/4 1927/23 1952/20 1970/15</p> <p>bring [7] 1881/22 1882/24 1884/12 1884/20 1886/6 1924/20 1984/1</p> <p>brings [1] 1984/7</p>	<p><b>BROCK</b> [5] 1819/3 1847/11 1863/25 1908/14 1977/21</p> <p>broken [1] 1929/22</p> <p>brother [4] 1954/18 1954/25 1955/6 1968/3</p> <p>brought [2] 1894/3 1923/3</p> <p>BRUCE [1] 1820/8</p> <p>Building [1] 1816/16</p> <p>builds [2] 1869/12 1869/23</p> <p>buildup [4] 1829/13 1866/4 1866/11 1870/3</p> <p>built [2] 1934/4 1935/5</p> <p>bulkhead [1] 1932/25</p> <p>bullet [2] 1854/23 1854/25</p> <p>bunch [2] 1968/3 1979/14</p> <p>Burling [1] 1819/2</p> <p>business [3] 1849/16 1849/17 1863/24</p> <p>button [3] 1845/16 1885/15 1885/18</p> <p>buttons [4] 1831/13 1871/18 1904/20 1933/23</p> <p><b>C</b></p> <p>cabin [3] 1910/18 1925/23 1938/16</p> <p>cable [1] 1926/18</p> <p>cables [4] 1926/17 1926/19 1926/23 1927/1</p> <p>calculate [4] 1947/18 1948/7 1949/11 1951/10</p> <p>calculated [1] 1949/21</p> <p>CALDWELL [1] 1818/12</p> <p>California [2] 1817/14 1819/14</p> <p>call [22] 1840/18 1844/22 1846/22 1846/24 1856/3 1859/8 1873/8 1876/13 1877/9 1901/5 1913/1 1913/12 1927/3 1932/8 1951/2 1959/18 1963/9 1978/2 1989/23 1990/2 1995/25 1996/12</p> <p>call-out [5] 1856/3 1876/13 1877/9 1989/23 1990/2</p> <p>call-outs [1] 1913/12</p> <p>called [8] 1891/18 1922/21 1936/9 1945/14 1952/17 1957/19 1975/13 1989/5</p> <p>calling [1] 1824/11</p> <p>calls [2] 1866/11 1938/19</p> <p>came [18] 1829/4 1835/12 1849/22 1860/25 1861/3 1868/23 1871/20 1905/22 1906/24 1912/11 1923/8 1946/10 1958/24 1959/4 1964/4 1964/16 1964/21 1988/18</p> <p>Cameron [4] 1819/22 1820/2 1879/23 1891/7</p> <p>Camp [1] 1818/16</p> <p>can [111] 1836/5 1837/19 1839/25 1841/20 1846/24 1851/15 1853/23 1856/3 1864/8 1864/10 1865/8 1870/12 1870/15 1871/3 1874/16 1875/24 1877/23 1882/9 1882/16 1882/19 1882/20 1883/3 1884/6 1884/6 1885/25 1895/18 1896/25 1898/4 1898/12 1898/14 1899/5 1899/12 1900/7 1901/3 1904/18 1904/20 1908/1 1910/10 1913/1 1914/2 1914/23 1915/15 1917/19 1917/21 1925/10 1925/14 1925/21 1928/15 1930/12 1931/5 1931/7 1931/10 1934/11 1934/20 1935/15 1937/10 1941/18 1944/18 1948/1 1948/25 1952/12 1955/25 1959/11 1959/14 1960/3 1960/9 1961/6 1961/9 1963/3 1963/9 1964/10 1965/23 1965/24 1966/13 1966/25 1969/24 1970/14 1971/24 1972/7 1972/12 1973/24 1974/21 1975/9 1975/22 1976/23 1978/1 1978/2 1979/4 1980/6 1980/16 1981/9 1982/3 1982/15 1982/20 1983/6 1984/18 1987/1 1987/3 1987/19 1988/11 1989/1 1989/22 1990/5 1990/9 1990/13 1992/10 1993/7 1993/10 1994/23 1996/11 1996/12</p> <p>can't [15] 1830/10 1830/11 1835/12 1846/14 1855/17 1871/25 1874/8 1895/2 1895/14 1901/7 1910/17 1960/14 1960/16 1991/4 1993/17</p>
---	--	---

<b>C</b>	<p> changed [1] 1973/1  changeouts [1] 1890/24  changes [2] 1972/4 1985/8  changing [1] 1870/11  channeling [1] 1823/21  chapter [2] 1888/25 1898/25  characteristics [1] 1886/12  characterization [1] 1830/25  characterized [2] 1830/23 1831/21  charge [7] 1852/10 1852/12 1908/25 1909/13  1939/22 1940/8 1945/7  chart [5] 1851/18 1851/24 1877/23 1908/13  1908/18  check [12] 1843/23 1856/14 1856/19 1856/23  1857/2 1857/3 1857/7 1857/13 1857/14  1857/23 1858/1 1938/13  checker [1] 1857/13  checking [1] 1894/11  checklist [1] 1946/5  Chicago [1] 1818/24  chief [1] 1941/4  chipping [1] 1940/15  choke [1] 1948/6  chronic [1] 1890/13  circa [1] 1838/22  circuit [1] 1882/17  circulate [4] 1883/19 1913/25 1915/23  1915/24  circulated [1] 1914/4  circulating [2] 1842/16 1899/23  circumstance [1] 1872/3  circumstances [2] 1871/23 1873/11  Civil [2] 1817/12 1817/22  clamp [2] 1988/13 1989/8  clamp-ons [1] 1988/13  cleaning [1] 1940/15  clear [6] 1823/4 1857/25 1886/6 1985/22  1989/11 1991/11  clearly [1] 1910/20  clerk [2] 1918/3 1984/4  clerk's [1] 1932/13  client [1] 1855/21  CLINGMAN [11] 1819/9 1825/5 1830/1  1830/14 1835/22 1836/4 1843/24 1903/11  1908/7 1915/10 1915/11  Clingman's [2] 1822/20 1896/4  clip [1] 1915/4  close [9] 1845/23 1893/4 1893/6 1894/18  1894/20 1904/20 1918/17 1933/13 1997/11  close-up [1] 1933/13  closed [5] 1866/21 1883/18 1993/25 1994/1  1994/4  closer [2] 1887/4 1933/11  closest [1] 1949/17  closeup [1] 1937/5  closing [3] 1994/5 1994/9 1996/23  Cocales [3] 1965/3 1965/4 1984/23  cockpit [1] 1904/22  collar [3] 1989/6 1989/8 1989/10  colleague [1] 1947/14  Coltrin [2] 1867/19 1867/21  column [2] 1983/23 1993/11  columns [1] 1983/21  combustible [1] 1936/19  come [14] 1840/21 1862/22 1863/7 1864/18  1948/4 1958/13 1960/22 1961/4 1962/11  1969/11 1988/16 1988/18 1992/12 1997/11  comes [3] 1859/20 1955/5 1976/16  comfortable [3] 1928/21 1946/2 1953/13  coming [18] 1858/7 1863/16 1865/25 1876/3  1895/6 1906/7 1922/23 1931/8 1948/2 1950/2  1950/3 1951/11 1951/13 1951/14 1954/12  1987/9 1987/11 1992/15 </p>	<p> command [1] 1910/1  comments [4] 1971/13 1976/7 1983/14  1983/15  Commercial [1] 1818/3  commitment [1] 1965/21  Committee [1] 1918/11  common [4] 1862/21 1909/21 1909/23  1953/10  commonsense [1] 1953/11  communicate [6] 1841/4 1841/7 1898/14  1972/24 1972/24 1995/12  communicated [3] 1969/8 1969/16 1970/8  communication [10] 1841/1 1849/18  1859/21 1860/2 1860/12 1898/9 1926/24  1927/6 1969/4 1972/25  companies [2] 1984/13 1986/16  company [11] 1818/20 1818/23 1819/4  1827/20 1848/23 1855/22 1895/15 1932/13  1932/15 1935/19 1973/9  company man [1] 1973/9  company man's [2] 1932/13 1932/15  compared [1] 1895/24  compensating [1] 1941/12  competence [3] 1922/8 1960/11 1969/1  competent [4] 1843/3 1922/10 1943/17  1968/22  complaining [1] 1889/10  COMPLAINT [1] 1815/7  complete [9] 1878/6 1895/11 1993/14  1994/18 1994/19 1994/20 1995/18 1996/8  1996/10  completed [9] 1878/14 1921/16 1943/1  1944/18 1985/11 1993/15 1993/16 1993/16  1993/17  completing [1] 1911/13  completion [1] 1921/12  complications [1] 1872/5  comply [1] 1910/22  component [1] 1942/20  components [1] 1942/22  comprehensive [1] 1891/1  compress [2] 1949/1 1949/3  compressibilities [1] 1953/5  compressibility [4] 1949/1 1952/11 1952/12  1952/15  compressing [1] 1951/5  compression [11] 1862/15 1862/20 1863/1  1863/5 1863/7 1863/12 1907/3 1907/8  1907/18 1945/14 1951/5  compressive [2] 1952/2 1953/20  computer [4] 1820/24 1863/23 1938/3  1938/17  computer-aided [1] 1820/24  concepts [2] 1825/20 1842/22  concerned [3] 1862/10 1888/10 1997/4  concerns [8] 1860/22 1861/1 1861/3 1861/13  1861/17 1890/12 1890/13 1971/16  concluded [3] 1895/16 1902/16 1997/14  conclusion [1] 1964/17  condense [1] 1961/9  condition [1] 1890/9  conditions [3] 1883/2 1899/14 1899/15  conduct [7] 1856/23 1857/23 1858/1 1866/18  1868/11 1875/6 1878/17  conducted [11] 1863/15 1864/24 1868/23  1875/21 1877/5 1877/20 1943/21 1970/3  1973/18 1975/25 1991/25  conducting [5] 1870/2 1958/6 1992/11  1996/15 1996/17  conducts [1] 1992/4  conference [2] 1992/14 1992/20  conferences [1] 1994/12  conferred [1] 1917/3 </p>
----------	---	---

<p><b>C</b></p> <p>configuration [1] 1934/6  confirm [3] 1863/4 1863/11 1907/3  confirmed [1] 1874/5  confusion [1] 1909/6  congratulations [4] 1919/11 1965/10 1968/4 1968/6  conjunction [1] 1954/24  connected [5] 1834/12 1839/14 1912/4 1912/10 1928/5  connection [10] 1863/6 1878/5 1914/9 1979/21 1989/19 1992/25 1993/3 1993/23 1994/5 1994/8  connections [1] 1988/10  connector [1] 1934/8  Connie [1] 1908/16  CONRAD [2] 1816/19 1958/15  conscious [1] 1873/16  consider [5] 1873/14 1910/20 1945/7 1962/25 1965/14  considered [1] 1995/6  consistent [2] 1826/17 1890/5  constant [1] 1859/16  consult [1] 1910/24  contact [1] 1860/2  contain [2] 1846/13 1881/2  Content [1] 1854/11  context [2] 1877/4 1963/8  continue [6] 1843/6 1959/8 1960/25 1986/17 1997/1 1997/1  continuous [1] 1858/17  continuously [2] 1833/23 1892/1  contractor [3] 1849/5 1849/6 1970/9  contractors [6] 1849/5 1849/8 1849/11 1939/3 1971/7 1986/13  contribute [2] 1971/13 1971/15  control [103] 1825/9 1825/13 1825/20 1826/2 1826/4 1826/8 1826/11 1826/19 1826/22 1827/12 1830/2 1830/4 1830/5 1830/24 1831/11 1831/14 1832/20 1832/21 1833/6 1834/14 1837/5 1841/13 1841/18 1843/8 1843/10 1843/13 1844/3 1844/7 1844/10 1845/20 1846/13 1851/5 1851/8 1851/10 1851/11 1852/25 1853/1 1853/6 1853/18 1854/4 1854/5 1854/7 1854/10 1855/9 1855/11 1856/2 1872/17 1875/12 1880/10 1880/13 1881/3 1881/15 1881/16 1881/25 1882/3 1882/11 1882/18 1882/23 1883/2 1885/16 1885/18 1886/7 1900/3 1902/2 1902/3 1904/16 1904/17 1905/2 1911/7 1920/10 1920/12 1920/21 1922/20 1933/13 1933/16 1933/20 1933/22 1935/4 1935/8 1935/13 1936/1 1936/1 1936/2 1936/6 1936/14 1936/23 1937/9 1937/12 1943/5 1943/6 1943/8 1959/24 1959/25 1974/18 1974/21 1974/23 1974/24 1975/2 1975/3 1975/5 1975/11 1975/16 1991/8  controlling [3] 1852/21 1884/3 1942/7  controls [4] 1831/2 1934/8 1934/24 1935/13  conversation [1] 1845/13  conversations [1] 1851/21  convert [1] 1948/1  converted [4] 1846/6 1846/9 1846/11 1905/25  convey [3] 1844/18 1871/22 1971/19  conveyed [1] 1823/4  conveying [1] 1823/2  cooking [1] 1912/6  cooperation [1] 1849/17  coordinated [1] 1921/1  copied [1] 1968/1  copies [3] 1851/7 1851/10 1985/3</p>	<p>copy [3] 1955/25 1963/22 1980/16  COREY [1] 1818/8  corner [4] 1838/17 1841/24 1842/4 1995/17  corners [1] 1967/7  Corporate [1] 1816/19  Corporation [2] 1819/23 1820/3  correct [180] 1823/19 1825/1 1825/4 1826/5 1826/7 1831/6 1845/1 1847/23 1848/1 1848/2 1848/5 1848/9 1848/21 1848/25 1849/3 1849/9 1850/20 1851/7 1853/11 1858/6 1858/17 1859/11 1860/5 1860/6 1860/9 1860/11 1861/11 1862/12 1862/18 1862/19 1864/13 1864/14 1864/17 1865/6 1866/12 1866/23 1867/1 1867/7 1867/25 1869/10 1869/14 1870/9 1870/14 1871/16 1872/4 1872/9 1873/11 1873/18 1873/23 1874/12 1875/14 1877/6 1877/7 1877/25 1878/3 1878/19 1878/24 1879/5 1880/17 1880/18 1881/20 1883/25 1885/2 1885/12 1887/9 1888/5 1891/1 1893/5 1893/18 1894/7 1895/8 1898/9 1898/10 1898/14 1901/23 1905/8 1909/14 1916/6 1916/24 1918/4 1920/8 1920/13 1920/21 1920/22 1921/2 1921/3 1921/5 1921/6 1921/17 1922/1 1922/14 1922/15 1923/10 1923/11 1923/20 1923/23 1923/25 1924/1 1924/8 1926/2 1926/3 1926/14 1926/17 1926/21 1926/25 1927/8 1927/12 1927/18 1927/19 1929/17 1930/9 1930/13 1932/4 1932/15 1932/16 1933/1 1933/5 1933/15 1933/23 1934/1 1934/2 1934/5 1934/9 1935/2 1935/5 1935/11 1935/13 1935/14 1935/23 1936/9 1936/10 1936/17 1936/21 1936/25 1937/1 1937/11 1937/18 1938/4 1939/9 1939/10 1939/14 1939/17 1939/21 1939/22 1940/2 1940/18 1940/22 1940/23 1941/3 1941/7 1941/16 1942/14 1942/17 1943/10 1943/11 1945/5 1945/22 1946/25 1951/18 1954/10 1955/17 1955/19 1955/20 1956/11 1956/12 1958/16 1959/20 1961/17 1966/22 1967/1 1967/2 1967/24 1967/25 1968/11 1968/12 1976/3 1977/1 1977/12 1983/5 1997/20  corrected [1] 1916/22  correction [1] 1916/23  corrections [1] 1984/8  correctly [7] 1822/24 1902/16 1944/14 1955/15 1956/7 1957/12 1974/3  could [87] 1824/10 1824/15 1838/13 1839/16 1843/17 1850/10 1851/12 1854/9 1854/13 1857/11 1857/12 1857/14 1857/16 1857/18 1867/16 1876/8 1879/17 1880/21 1881/17 1881/22 1884/20 1887/3 1891/2 1892/1 1897/6 1897/7 1897/18 1898/6 1898/19 1900/11 1900/14 1904/22 1910/13 1918/13 1924/20 1925/18 1927/23 1928/19 1930/3 1930/16 1930/18 1930/25 1931/2 1931/13 1931/24 1932/5 1932/6 1932/9 1932/10 1932/12 1932/22 1934/10 1934/18 1937/4 1938/2 1938/3 1938/6 1938/6 1938/7 1942/24 1949/24 1949/25 1950/1 1950/3 1950/5 1950/6 1952/20 1954/15 1955/21 1957/3 1957/7 1958/8 1959/17 1960/18 1962/11 1962/12 1962/18 1962/24 1964/17 1968/14 1974/24 1975/6 1976/15 1983/18 1986/10 1992/9 1997/10  couldn't [11] 1832/19 1890/15 1904/1 1907/18 1912/6 1920/21 1929/24 1929/24 1929/24 1942/23 1988/3  counsel [7] 1874/20 1878/5 1899/8 1911/14 1916/6 1976/6 1980/1  counted [1] 1996/6  counteract [1] 1941/14  couple [17] 1839/7 1851/4 1852/18 1856/12</p>	<p>1862/24 1887/19 1904/13 1905/20 1917/13 1922/21 1924/25 1930/6 1934/17 1954/2 1960/21 1964/22 1974/15  course [8] 1835/1 1854/11 1855/8 1855/21 1861/25 1883/17 1945/22 1959/7  Course-Content [1] 1854/11  courses [1] 1961/16  court [13] 1815/1 1820/18 1863/20 1865/3 1879/24 1912/23 1914/6 1915/16 1952/21 1993/10 1997/17 1997/18 1997/25  Court's [1] 1913/14  courtroom [2] 1846/24 1892/12  cover [6] 1856/4 1871/1 1874/16 1887/19 1969/6 1982/5  covered [6] 1826/3 1831/17 1847/17 1851/5 1936/2 1958/15  covers [1] 1851/18  Covington [1] 1819/2  Craft [1] 1816/15  crash [1] 1900/12  created [2] 1893/20 1897/1  crew [74] 1823/11 1823/22 1833/2 1833/23 1836/25 1837/12 1842/21 1843/3 1843/3 1844/2 1844/12 1846/12 1853/18 1869/5 1871/18 1873/6 1878/18 1878/21 1881/7 1883/15 1883/23 1897/1 1897/13 1898/5 1898/7 1898/9 1898/11 1898/18 1899/4 1902/1 1907/10 1908/4 1911/11 1927/16 1938/23 1939/4 1939/17 1939/19 1939/22 1939/25 1940/1 1940/1 1940/2 1940/4 1940/18 1941/1 1943/8 1943/22 1946/22 1947/18 1948/21 1964/25 1965/1 1965/22 1967/4 1967/21 1968/10 1968/14 1968/16 1968/18 1969/5 1969/9 1970/9 1973/10 1974/23 1975/1 1975/7 1975/8 1975/8 1979/17 1985/15 1985/25 1986/4 1986/9  crew's [2] 1893/14 1945/3  crews [1] 1909/11  critical [7] 1944/12 1944/13 1944/14 1944/17 1944/20 1944/25 1995/13  criticism [2] 1912/2 1963/7  cross [10] 1822/11 1822/14 1847/9 1847/12 1880/1 1911/3 1918/11 1947/10 1954/3 1979/11  cross section [1] 1979/11  cross-examination [7] 1822/14 1847/9 1847/12 1880/1 1918/11 1947/10 1954/3  cross-examinations [1] 1911/3  crown [3] 1844/25 1845/7 1930/16  crucial [1] 1859/20  Cunningham [2] 1816/2 1816/3  curious [1] 1831/21  current [5] 1842/7 1842/10 1890/9 1985/7 1995/12  currently [1] 1889/1  currents [1] 1941/13  Curtis [3] 1844/17 1844/22 1845/14  curve [1] 1979/11  custom [1] 1986/8  cut [4] 1884/5 1885/5 1912/12 1967/6  CV [2] 1815/7 1815/9</p> <p><b>D</b></p> <p>D-365 [1] 1851/13  D-4370 [1] 1973/24  D-8179 [2] 1835/20 1836/19  D-8180 [2] 1838/6 1838/17  D.C [4] 1817/20 1817/25 1818/6 1819/4  D5 [1] 1899/22  daily [14] 1864/8 1864/11 1864/16 1864/21 1866/15 1878/10 1878/17 1901/16 1902/6 1969/15 1970/3 1970/7 1970/14 1973/16  Dallas [1] 1820/10</p>
--	---	---

<b>D</b>		
<p>damage [4] 1883/1 1885/8 1892/20 1990/14  damaged [2] 1885/11 1990/10  Damon [1] 1912/10  dangerous [1] 1902/1  DANIEL [1] 1818/4  dark [2] 1955/13 1989/5  data [18] 1835/2 1837/3 1837/6 1837/10  1839/10 1839/19 1858/25 1859/6 1873/14  1876/7 1877/21 1878/2 1878/9 1931/16  1931/21 1932/1 1932/1 1938/3  date [5] 1841/21 1846/8 1876/15 1920/19  1996/12  dated [5] 1865/12 1867/19 1867/21 1954/21  1963/14  Daun [1] 1966/25  Dauphin [1] 1816/3  DAVID [3] 1820/3 1820/3 1984/16  Davies [1] 1992/5  day [27] 1815/14 1823/13 1828/13 1840/22  1850/15 1879/1 1879/13 1890/2 1890/10  1955/24 1956/9 1957/8 1966/25 1967/19  1969/17 1971/1 1973/15 1975/8 1983/9  1983/18 1983/19 1983/20 1984/7 1984/9  1984/11 1992/13 1992/18  days [16] 1850/1 1850/11 1850/12 1850/12  1857/20 1905/20 1919/23 1919/23 1920/6  1920/18 1922/21 1941/22 1965/9 1983/21  1992/18 1995/6  DBRs [1] 1830/11  dead [1] 1907/3  deal [7] 1858/8 1858/9 1901/25 1902/6  1905/23 1915/8 1917/21  dealing [2] 1961/14 1987/15  deals [2] 1882/3 1897/11  dealt [3] 1895/12 1914/5 1945/1  DEANNA [1] 1817/18  death [2] 1891/14 1891/19  debriefing [1] 1992/20  December [3] 1841/19 1906/17 1919/17  December 23 [1] 1841/19  decided [1] 1897/2  decision [13] 1823/24 1827/14 1827/15  1827/18 1827/20 1829/8 1832/7 1873/7  1873/10 1873/16 1894/24 1898/8 1898/18  decision-making [2] 1827/18 1894/24  deck [8] 1925/25 1932/17 1932/18 1932/19  1932/19 1937/15 1937/19 1939/20  deckpusher [1] 1851/20  declare [2] 1870/1 1870/7  dedicated [2] 1940/17 1940/18  deemed [1] 1822/24  deep [3] 1882/4 1882/7 1903/17  deepest [2] 1847/25 1848/3  deeply [1] 1900/24  deepwater [119] 1815/4 1819/6 1819/7  1819/9 1819/10 1819/13 1819/13 1819/17  1819/17 1819/20 1819/21 1823/14 1824/24  1826/12 1828/2 1828/11 1833/7 1833/12  1834/23 1838/8 1838/19 1838/23 1840/17  1846/1 1846/21 1847/22 1848/10 1848/16  1848/17 1849/2 1849/10 1849/17 1850/22  1851/23 1852/10 1858/24 1859/4 1860/15  1861/9 1862/7 1863/6 1863/16 1865/10  1865/11 1865/18 1867/1 1867/19 1867/21  1870/13 1872/8 1872/20 1872/23 1880/17  1883/11 1883/24 1884/4 1884/8 1887/25  1889/1 1890/14 1890/19 1891/6 1894/5  1896/23 1902/19 1904/4 1904/7 1906/1  1906/4 1908/18 1909/6 1910/5 1919/19  1919/22 1920/7 1921/4 1923/17 1924/7  1924/11 1924/19 1926/23 1927/10 1927/20</p>	<p>1928/15 1933/17 1934/15 1938/22 1939/15  1940/20 1942/23 1943/2 1943/7 1943/8  1945/6 1946/9 1947/17 1951/17 1951/22  1958/20 1958/23 1962/23 1962/25 1963/15  1963/19 1963/22 1965/1 1965/11 1968/14  1968/17 1969/8 1976/25 1977/10 1977/18  1978/6 1986/6 1987/8 1992/1 1993/5 1997/2  defend [1] 1889/21  defense [2] 1830/15 1830/24  deferred [1] 1892/21  definitely [6] 1837/18 1837/20 1867/14  1869/13 1869/24 1870/4  deGravelles [2] 1817/2 1817/3  degree [4] 1855/14 1855/21 1943/22 1944/8  DELEMARRE [1] 1817/23  demonstrate [1] 1952/16  demonstrated [3] 1948/16 1965/23 1966/5  demonstrating [1] 1967/19  demonstratives [4] 1913/12 1913/17 1914/7  1915/13  DENISE [1] 1820/15  density [1] 1826/19  depart [2] 1823/12 1910/12  department [9] 1817/11 1817/15 1817/21  1818/2 1891/9 1984/14 1994/14 1994/16  1995/16  departments [1] 1992/15  departure [1] 1985/9  depend [1] 1953/5  Depending [1] 1927/15  depends [4] 1857/11 1897/18 1951/8 1975/7  depict [1] 1926/6  depiction [1] 1970/7  depo [1] 1914/13  deposition [2] 1874/4 1916/13  depth [6] 1848/3 1876/6 1876/7 1978/15  1978/21 1978/22  depth/TVD [1] 1978/21  depths [1] 1901/4  DEPUTY [1] 1918/3  derrick [4] 1927/10 1928/6 1928/7 1930/18  derrickman [3] 1859/22 1860/10 1860/10  derrickman/mud [1] 1859/22  describe [9] 1867/6 1871/3 1948/19 1952/20  1964/10 1964/25 1968/18 1974/21 1992/10  described [11] 1856/20 1857/2 1865/2  1878/25 1946/25 1948/20 1950/8 1950/22  1971/9 1986/9 1988/17  describes [3] 1866/17 1866/21 1972/2  description [1] 1972/18  designed [1] 1867/16  desk [1] 1880/22  detail [5] 1826/4 1851/6 1856/4 1925/15  1970/6  detailed [2] 1888/24 1957/9  details [3] 1852/18 1957/11 1985/12  detect [2] 1832/23 1882/11  detected [1] 1883/23  detection [5] 1833/16 1833/19 1833/22  1843/19 1881/15  determine [2] 1862/3 1951/12  determining [2] 1948/22 1950/24  developed [3] 1848/15 1867/4 1945/22  develops [3] 1852/24 1853/5 1853/7  deviates [3] 1856/15 1856/22 1857/4  Dexter [1] 1818/9  did [119] 1828/11 1828/23 1829/2 1832/14  1832/15 1835/14 1835/18 1836/24 1837/13  1841/7 1841/7 1844/17 1845/14 1846/3  1846/5 1846/15 1851/3 1855/19 1858/23  1860/21 1861/12 1861/15 1861/16 1863/6  1867/17 1871/22 1872/6 1872/10 1872/16  1876/12 1878/5 1878/13 1879/6 1881/12</p>	<p>1886/18 1888/3 1892/8 1892/13 1892/14  1893/3 1893/7 1894/23 1894/24 1895/12  1895/14 1896/22 1900/10 1904/10 1904/12  1905/1 1905/13 1906/20 1909/6 1909/9  1909/16 1910/20 1911/21 1911/24 1914/25  1916/23 1919/2 1920/7 1920/15 1922/6  1922/16 1922/18 1924/10 1928/17 1930/22  1930/25 1931/16 1931/17 1931/21 1931/23  1940/4 1940/6 1943/13 1945/6 1945/18  1946/4 1946/21 1948/19 1949/14 1955/4  1955/15 1956/7 1957/12 1959/1 1959/6  1959/8 1959/10 1959/23 1960/5 1961/25  1962/2 1962/9 1962/10 1964/3 1965/4  1965/14 1968/22 1968/24 1968/25 1969/7  1974/2 1975/19 1975/21 1977/3 1980/22  1981/5 1981/9 1982/8 1983/14 1985/17  1985/17 1985/24 1986/3 1990/12 1996/25  didn't [33] 1831/8 1832/13 1835/15 1836/8  1843/11 1844/20 1861/18 1872/14 1874/24  1877/2 1892/25 1893/4 1893/6 1894/21  1898/20 1898/22 1898/25 1904/1 1908/8  1920/20 1922/7 1931/1 1932/6 1938/23  1953/1 1956/21 1967/15 1968/19 1976/3  1977/23 1986/7 1988/18 1994/21  difference [3] 1909/1 1931/23 1962/20  differences [1] 1837/5  different [35] 1832/17 1834/17 1838/1  1840/11 1848/23 1849/4 1855/16 1868/18  1869/1 1900/11 1902/8 1902/8 1902/20  1905/1 1921/22 1921/22 1923/16 1923/18  1931/5 1931/10 1938/6 1938/6 1939/16  1939/17 1939/25 1961/16 1964/15 1964/22  1964/23 1975/6 1978/23 1985/18 1988/6  1988/9 1995/24  differential [5] 1832/10 1866/22 1948/10  1948/14 1951/9  differently [2] 1840/13 1957/11  difficult [2] 1937/3 1995/3  dilling [1] 1964/20  direct [7] 1836/9 1887/20 1899/2 1918/7  1926/24 1958/6 1958/10  direction [4] 1896/17 1896/18 1897/5  1937/23  directional [2] 1919/1 1979/11  directly [2] 1852/5 1963/25  disability [1] 1960/17  disagreed [2] 1832/7 1832/8  disagreements [2] 1968/20 1968/21  disconnect [10] 1871/2 1872/9 1872/15  1872/18 1872/21 1872/24 1884/23 1911/7  1911/8 1935/2  disconnected [2] 1863/24 1885/6  discovering [1] 1838/1  discuss [4] 1879/8 1879/14 1970/17 1972/19  discussed [14] 1828/16 1843/24 1844/6  1845/17 1874/20 1875/1 1890/4 1913/13  1917/17 1928/23 1929/1 1970/5 1970/16  1970/16  discussing [3] 1839/13 1975/17 1989/4  discussion [10] 1822/21 1868/24 1893/12  1893/24 1894/10 1894/13 1896/2 1902/13  1970/24 1986/24  discussions [1] 1844/17  displace [6] 1826/25 1866/8 1948/11 1953/12  1972/15 1973/6  displaced [1] 1951/23  displacement [17] 1827/9 1827/21 1828/4  1828/5 1828/6 1828/8 1828/10 1828/11  1828/16 1828/19 1828/20 1828/25 1829/2  1829/8 1868/4 1953/1 1985/11  displacement/plug [1] 1985/11  displacing [7] 1827/11 1843/1 1864/25  1865/16 1865/23 1956/5 1981/15</p>

<b>D</b>	doors [3] 1933/4 1936/3 1936/6 Doug [2] 1913/5 1954/5 DOUGLAS [1] 1818/16 down [47] 1831/15 1851/20 1854/25 1856/11 1857/5 1857/15 1857/19 1858/1 1858/4 1859/20 1864/18 1865/25 1866/8 1877/12 1891/23 1895/23 1908/21 1926/20 1927/17 1928/6 1928/7 1932/19 1933/20 1934/20 1937/17 1937/20 1937/22 1940/7 1946/14 1947/25 1948/11 1953/17 1956/6 1971/20 1978/4 1978/8 1981/12 1981/16 1983/23 1985/12 1987/22 1987/25 1988/3 1988/4 1989/7 1989/10 1994/19 downhole [5] 1827/5 1833/25 1844/13 1919/2 1932/8 downstairs [1] 1940/6 downtime [2] 1889/15 1889/20 downwind [4] 1896/23 1897/3 1897/22 1897/23 DOYEN [1] 1819/12 DPOs [1] 1941/5 draft [5] 1956/16 1956/17 1980/2 1983/13 1984/9 drafted [1] 1829/3 drafts [3] 1980/4 1981/3 1981/23 drawing [4] 1924/23 1925/1 1937/3 1937/8 drawworks [1] 1839/17 Drescher [1] 1816/8 drift [2] 1884/9 1884/25 drift-off [2] 1884/9 1884/25 drifting [1] 1885/2 Dril [6] 1989/14 1989/16 1989/19 1989/25 1990/5 1990/7 Dril-Quip [6] 1989/14 1989/16 1989/19 1989/25 1990/5 1990/7 drill [73] 1828/23 1830/2 1831/3 1832/10 1833/2 1834/15 1835/23 1836/25 1837/12 1837/14 1840/18 1844/2 1844/12 1846/12 1866/6 1866/8 1871/18 1872/4 1875/18 1877/2 1877/5 1883/15 1884/23 1885/5 1885/22 1885/24 1886/2 1886/3 1886/10 1893/14 1894/24 1898/9 1898/23 1899/15 1899/22 1902/24 1911/11 1921/20 1925/8 1925/9 1925/21 1925/24 1926/2 1927/16 1927/17 1930/8 1930/23 1935/15 1936/20 1936/21 1938/4 1938/8 1938/16 1940/14 1942/2 1942/4 1943/22 1945/3 1946/22 1947/25 1949/5 1950/1 1956/6 1964/25 1972/1 1972/1 1972/5 1973/8 1973/10 1974/23 1975/13 1976/6 1976/12 drilled [15] 1828/23 1847/22 1847/25 1848/1 1848/18 1876/5 1876/11 1876/23 1882/7 1900/24 1900/24 1901/4 1901/5 1931/3 1955/5 driller [50] 1825/2 1827/10 1828/24 1833/20 1833/23 1836/6 1836/10 1837/15 1837/16 1837/21 1837/24 1840/16 1841/1 1851/20 1852/20 1856/7 1856/13 1856/21 1857/3 1857/16 1857/22 1858/25 1859/21 1860/5 1860/5 1865/11 1871/10 1872/23 1872/25 1873/8 1876/4 1878/14 1884/22 1885/13 1892/8 1892/9 1898/15 1900/2 1900/2 1930/12 1930/15 1930/15 1933/1 1946/16 1946/20 1947/2 1950/13 1950/14 1973/10 1974/25 driller's [15] 1833/22 1834/11 1837/18 1841/3 1852/18 1853/1 1885/16 1900/18 1925/23 1931/12 1932/21 1933/1 1935/16 1936/11 1936/15 drillers [9] 1836/1 1851/9 1862/8 1862/8 1877/2 1891/14 1946/8 1950/23 1969/12 drilling [83] 1819/6 1819/9 1819/13 1819/17 1819/20 1848/12 1848/24 1849/17 1849/18	1851/18 1852/3 1852/11 1864/8 1864/11 1864/16 1864/21 1866/15 1873/20 1874/11 1876/4 1876/5 1876/17 1878/6 1878/10 1885/8 1908/23 1909/1 1909/3 1909/11 1909/22 1919/1 1919/10 1921/5 1921/11 1921/19 1921/23 1923/19 1927/15 1927/17 1935/17 1935/17 1938/18 1939/16 1940/2 1941/1 1941/8 1941/16 1941/24 1942/3 1942/8 1942/10 1943/8 1948/16 1948/21 1954/7 1954/8 1954/8 1954/11 1955/4 1955/4 1956/22 1962/8 1968/16 1975/3 1975/4 1976/11 1976/12 1976/17 1976/18 1977/9 1977/19 1978/3 1978/7 1978/9 1979/17 1980/12 1980/13 1982/9 1982/12 1982/16 1982/24 1982/25 1984/17 drills [13] 1894/4 1894/9 1894/10 1894/17 1899/13 1899/17 1924/2 1924/2 1970/18 1971/22 1971/25 1972/11 1973/4 drive [13] 1816/16 1816/19 1889/3 1914/13 1927/20 1927/23 1927/25 1928/1 1928/3 1928/4 1928/8 1928/9 1928/12 drives [1] 1914/7 driving [1] 1940/25 dropped [1] 1901/20 dry [5] 1903/19 1903/24 1904/10 1924/11 1929/16 drydocked [1] 1890/20 due [1] 1912/8 DUKE [2] 1816/19 1918/9 duly [2] 1822/13 1918/1 dumped [1] 1838/4 dumping [1] 1841/10 duplicated [1] 1996/1 duration [1] 1919/21 during [28] 1828/4 1828/5 1840/22 1848/16 1849/2 1865/19 1868/19 1869/3 1877/22 1879/1 1879/13 1891/5 1899/2 1901/20 1902/10 1913/13 1916/13 1924/10 1928/24 1929/21 1946/24 1966/10 1971/7 1974/16 1975/3 1975/5 1982/11 1996/1 duties [1] 1834/18 duty [4] 1921/7 1930/23 1938/10 1941/2 DWH [1] 1887/25
<b>E</b>	e-mail [27] 1867/18 1888/16 1888/24 1889/14 1889/24 1890/1 1902/11 1905/9 1905/13 1922/25 1954/17 1954/18 1954/21 1955/23 1956/4 1957/5 1963/9 1965/3 1966/14 1967/3 1967/12 1968/11 1977/7 1980/8 1981/12 1984/21 1984/22 e-mails [2] 1957/5 1970/11 each [17] 1831/11 1846/3 1848/22 1848/23 1883/21 1883/25 1921/7 1935/4 1955/1 1964/16 1968/13 1969/20 1971/12 1975/7 1983/22 1984/13 1994/16 eant [1] 1958/14 earlier [18] 1834/13 1841/14 1845/10 1849/21 1851/17 1852/7 1862/13 1870/10 1874/19 1875/1 1875/10 1902/13 1904/5 1905/5 1917/5 1924/6 1927/12 1964/5 early [4] 1878/18 1881/15 1882/11 1976/14 ears [1] 1921/11 easier [2] 1868/5 1877/21 EASTERN [2] 1815/2 1997/18 easy [2] 1982/22 1982/22 easy-going [1] 1982/22 echo [1] 1966/24 EDS [16] 1830/12 1870/11 1870/13 1871/1 1871/11 1871/16 1871/20 1872/6 1872/7 1884/10 1885/14 1887/11 1898/2 1898/4 1898/19 1898/19 EDS'd [2] 1871/19 1871/23	



<p><b>E</b></p> <p>education [1] 1825/6</p> <p>Edwards [1] 1815/19</p> <p>effect [9] 1842/20 1862/14 1862/18 1863/9 1863/11 1907/2 1907/4 1945/9 1945/13</p> <p>effective [3] 1881/14 1881/16 1953/16</p> <p>effectively [1] 1841/4</p> <p>effects [1] 1893/13</p> <p>effort [2] 1845/7 1890/11</p> <p>eight [8] 1883/9 1883/21 1919/20 1922/4 1924/7 1931/10 1958/20 1958/22</p> <p>either [14] 1823/20 1827/19 1828/15 1829/20 1890/12 1897/9 1931/24 1931/25 1947/18 1952/1 1953/13 1977/16 1984/25 1985/1</p> <p>election [1] 1823/23</p> <p>electrical [2] 1927/6 1984/14</p> <p>electronic [1] 1939/20</p> <p>element [1] 1845/22</p> <p>elements [1] 1883/2</p> <p>eliminate [2] 1889/19 1972/6</p> <p>ELIZABETH [1] 1818/5</p> <p>Ellis [1] 1818/21</p> <p>Elm [1] 1820/9</p> <p>else [16] 1874/16 1917/6 1929/20 1932/10 1938/17 1947/4 1949/24 1951/6 1951/12 1953/6 1953/18 1957/2 1977/14 1982/1 1982/12 1986/14</p> <p>else's [1] 1890/13</p> <p>emergency [24] 1830/16 1830/19 1833/7 1833/12 1833/14 1833/16 1871/2 1872/9 1872/15 1872/18 1872/21 1872/24 1880/16 1884/23 1894/8 1894/10 1894/14 1900/3 1900/7 1900/9 1904/20 1910/23 1911/6 1911/8</p> <p>EMPAC [3] 1905/23 1906/1 1996/4</p> <p>emphasis [3] 1901/17 1901/23 1966/2</p> <p>employed [1] 1935/20</p> <p>employee [1] 1959/16</p> <p>emptied [1] 1837/25</p> <p>EMW [2] 1978/10 1978/13</p> <p>encroach [1] 1936/20</p> <p>end [8] 1832/9 1844/21 1905/10 1948/3 1955/13 1959/18 1963/4 1965/25</p> <p>endeavors [2] 1848/19 1953/14</p> <p>ends [4] 1965/25 1967/18 1978/2 1982/5</p> <p>Energy [2] 1820/7 1820/11</p> <p>Enforcement [1] 1817/16</p> <p>engaged [2] 1827/21 1921/12</p> <p>engineer [21] 1823/2 1859/22 1862/23 1946/11 1946/20 1947/3 1947/4 1953/7 1954/20 1964/20 1973/10 1976/12 1980/12 1980/13 1981/24 1982/12 1982/24 1982/25 1983/3 1983/4 1985/5</p> <p>engineering [5] 1907/9 1918/25 1969/5 1982/1 1985/1</p> <p>engineers [8] 1945/13 1952/2 1953/15 1954/8 1956/22 1969/21 1982/16 1984/17</p> <p>enlarge [1] 1994/24</p> <p>enough [12] 1842/18 1907/20 1908/9 1951/20 1953/2 1960/8 1967/16 1976/15 1977/6 1991/18 1991/19 1994/3</p> <p>ensure [3] 1886/16 1955/25 1980/16</p> <p>ensuring [1] 1901/25</p> <p>enters [1] 1882/10</p> <p>entire [8] 1824/24 1851/24 1851/25 1880/22 1890/18 1965/11 1965/22 1967/20</p> <p>entirely [1] 1885/7</p> <p>entitled [4] 1855/10 1957/6 1977/8 1997/22</p> <p>entry [2] 1876/21 1995/5</p> <p>environment [2] 1817/16 1966/3</p> <p>environmental [4] 1817/16 1966/9 1966/9</p>	<p>1972/23</p> <p>equipment [18] 1829/17 1829/18 1837/5 1885/9 1889/3 1889/7 1889/12 1890/23 1922/23 1931/18 1932/2 1935/22 1938/12 1938/14 1956/1 1962/15 1970/22 1980/17</p> <p>equivalent [2] 1877/17 1978/14</p> <p>error [2] 1914/18 1914/20</p> <p>escape [1] 1912/12</p> <p>ESQ [58] 1815/19 1815/23 1816/3 1816/6 1816/9 1816/12 1816/15 1816/19 1816/22 1817/3 1817/6 1817/9 1817/12 1817/17 1817/17 1817/18 1817/18 1817/19 1817/22 1817/23 1817/23 1817/24 1817/24 1818/4 1818/4 1818/5 1818/8 1818/8 1818/9 1818/12 1818/15 1818/16 1818/19 1818/22 1818/22 1818/23 1819/3 1819/6 1819/9 1819/9 1819/12 1819/13 1819/13 1819/16 1819/20 1819/23 1820/3 1820/3 1820/4 1820/4 1820/7 1820/8 1820/8 1820/9 1820/12 1820/15 1820/15 1820/16</p> <p>essentially [4] 1881/19 1933/22 1934/3 1940/22</p> <p>establish [1] 1947/22</p> <p>established [2] 1849/12 1902/18</p> <p>estimate [1] 1948/25</p> <p>estimated [4] 1978/10 1978/25 1979/11 1983/22</p> <p>et [2] 1815/8 1815/11</p> <p>etc [1] 1833/24</p> <p>evacuate [1] 1911/21</p> <p>evacuation [1] 1912/2</p> <p>evaluation [1] 1854/16</p> <p>even [10] 1827/11 1842/8 1863/3 1892/2 1898/19 1928/18 1941/8 1947/13 1974/15 1997/10</p> <p>evening [4] 1861/12 1868/17 1878/7 1918/9</p> <p>event [16] 1832/21 1841/13 1841/16 1841/18 1844/8 1846/13 1850/2 1870/15 1878/7 1878/15 1895/17 1943/5 1943/6 1943/8 1943/9 1970/4</p> <p>events [1] 1889/15</p> <p>ever [27] 1828/19 1829/2 1842/1 1842/5 1860/22 1861/12 1861/16 1863/3 1890/21 1893/12 1895/9 1895/23 1906/21 1907/9 1909/18 1922/4 1924/11 1928/23 1935/7 1935/7 1945/9 1945/11 1954/11 1962/10 1964/4 1968/25 1987/16</p> <p>every [20] 1825/15 1852/14 1883/14 1883/25 1891/15 1904/13 1944/3 1944/10 1946/14 1959/25 1961/23 1961/23 1961/23 1967/19 1969/17 1971/1 1972/1 1973/15 1974/22 1984/13</p> <p>everybody [13] 1889/22 1903/10 1917/19 1921/18 1929/2 1929/3 1929/8 1946/18 1946/23 1947/5 1971/12 1972/25 1973/5</p> <p>everyone [5] 1822/5 1912/25 1947/4 1955/25 1980/16</p> <p>everything [7] 1844/2 1887/8 1889/19 1893/18 1924/16 1929/9 1981/24</p> <p>evidence [4] 1892/19 1913/12 1913/14 1915/12</p> <p>exact [4] 1834/5 1834/7 1835/9 1869/15</p> <p>exactly [13] 1823/4 1825/17 1834/20 1835/12 1841/21 1845/18 1855/17 1867/13 1868/12 1892/4 1901/7 1903/21 1988/24</p> <p>exam [1] 1902/10</p> <p>examination [17] 1822/14 1847/9 1847/12 1880/1 1887/17 1887/21 1903/15 1911/1 1913/4 1913/17 1914/9 1918/7 1918/11 1947/10 1954/3 1958/7 1958/10</p> <p>examinations [1] 1911/3</p> <p>example [8] 1825/8 1827/19 1841/9 1842/25 1884/8 1900/13 1910/8 1973/6</p>	<p>examples [1] 1843/8</p> <p>excellent [2] 1967/19 1968/9</p> <p>exception [3] 1839/18 1840/24 1885/9</p> <p>exceptionally [1] 1848/17</p> <p>exceptions [1] 1879/6</p> <p>excerpts [1] 1914/13</p> <p>excess [1] 1995/6</p> <p>excessive [1] 1995/6</p> <p>exchanged [1] 1969/4</p> <p>excuse [7] 1835/4 1916/19 1924/17 1936/2 1956/21 1961/2 1996/4</p> <p>executed [3] 1921/16 1944/14 1986/5</p> <p>executing [2] 1848/24 1986/10</p> <p>execution [1] 1997/2</p> <p>exemption [2] 1920/16 1920/17</p> <p>exercise [3] 1842/25 1852/25 1943/22</p> <p>exercised [1] 1844/9</p> <p>exert [1] 1869/6</p> <p>exhibit [20] 1841/22 1842/3 1851/13 1859/12 1864/8 1864/19 1865/7 1865/8 1865/22 1875/24 1913/6 1916/13 1954/15 1955/21 1957/3 1959/11 1963/3 1969/25 1975/15 1989/1</p> <p>Exhibit 3326 [1] 1865/8</p> <p>Exhibit 34651.1 [1] 1864/8</p> <p>Exhibit D-4369 [1] 1969/25</p> <p>exhibits [13] 1913/3 1913/9 1913/12 1913/17 1914/9 1915/13 1916/8 1916/17 1917/4 1917/7 1917/14 1917/17 1917/20</p> <p>expect [6] 1846/12 1862/2 1862/6 1862/8 1885/10 1956/13</p> <p>expected [4] 1856/14 1859/5 1978/25 1983/12</p> <p>experience [34] 1823/15 1824/1 1824/17 1828/22 1829/10 1829/19 1831/12 1840/16 1841/11 1845/20 1846/19 1861/21 1905/1 1909/6 1909/15 1912/1 1919/11 1922/11 1943/7 1959/3 1961/14 1962/6 1966/1 1966/5 1968/15 1968/18 1982/20 1982/21 1982/23 1986/2 1987/15 1988/17 1990/9 1990/18</p> <p>experiencing [3] 1884/9 1889/2 1889/11</p> <p>expert [1] 1953/5</p> <p>experts [1] 1824/21</p> <p>expire [1] 1920/10</p> <p>explain [4] 1846/2 1927/23 1962/13 1964/15</p> <p>explained [1] 1906/14</p> <p>explaining [1] 1875/12</p> <p>EXPLORATION [4] 1815/10 1818/18 1818/21 1819/2</p> <p>explosion [1] 1850/18</p> <p>exposed [2] 1877/8 1903/1</p> <p>exposure [1] 1964/25</p> <p>express [6] 1860/22 1861/1 1861/12 1861/22 1861/24 1967/20</p> <p>expressed [3] 1848/14 1861/3 1929/20</p> <p>expresses [1] 1968/4</p> <p>expressing [1] 1967/22</p> <p>extension [1] 1920/15</p> <p>extensive [4] 1906/3 1970/6 1976/17 1982/23</p> <p>extent [1] 1915/14</p> <p>exterior [1] 1838/18</p> <p>extra [2] 1843/15 1939/6</p> <p>extremely [1] 1912/5</p> <p>Exxon [1] 1923/13</p> <p>eyes [1] 1921/11</p> <p>Ezell [38] 1822/11 1822/12 1822/16 1833/6 1833/17 1834/11 1835/22 1845/9 1847/2 1847/11 1864/4 1864/12 1876/3 1880/3 1882/25 1884/17 1887/3 1887/19 1903/17 1907/1 1909/15 1909/20 1910/23 1912/15 1912/16 1913/18 1915/14 1917/17 1917/20 1930/20 1943/13 1943/15 1943/20 1943/24 1944/21 1968/15 1977/21 1977/23</p>
--	--	--

<b>E</b>	finish [2] 1880/6 1961/3 finished [4] 1946/21 1948/5 1986/18 1992/20 finishing [1] 1997/11 fire [1] 1895/5 fired [2] 1889/21 1905/17 Firm [2] 1816/21 1817/8 first [32] 1825/23 1826/15 1843/22 1844/12 1845/14 1845/18 1845/22 1846/20 1853/1 1856/6 1857/25 1858/3 1868/20 1868/22 1869/3 1881/15 1887/23 1895/16 1913/18 1915/25 1917/18 1917/21 1932/19 1963/18 1969/7 1970/16 1970/16 1972/19 1977/21 1980/8 1992/2 1993/11 fit [5] 1855/2 1855/4 1855/12 1855/20 1856/14 five [13] 1880/6 1938/5 1941/22 1956/20 1957/8 1964/5 1983/18 1983/19 1983/20 1983/21 1984/7 1984/9 1984/11 five-day [7] 1957/8 1983/18 1983/19 1983/20 1984/7 1984/9 1984/11 fix [1] 1929/25 fixed [2] 1929/11 1929/24 flash [2] 1914/7 1914/13 flashlight [1] 1857/18 flipping [1] 1847/14 floating [1] 1909/1 flood [1] 1846/13 floor [18] 1816/13 1819/14 1828/18 1837/16 1846/23 1851/8 1859/8 1898/23 1925/7 1925/8 1925/9 1925/24 1926/2 1933/18 1934/4 1936/20 1938/8 1940/14 flow [18] 1833/24 1843/23 1856/13 1856/19 1856/23 1857/2 1857/3 1857/11 1857/13 1857/14 1857/23 1858/1 1858/7 1877/21 1931/8 1931/8 1931/9 1931/20 flowing [5] 1857/7 1857/9 1857/19 1858/7 1949/16 FLOYD [2] 1820/8 1822/10 fluid [10] 1826/19 1826/21 1893/5 1927/3 1927/5 1928/4 1928/6 1946/12 1948/25 1949/24 fluids [3] 1853/10 1868/19 1869/2 fly [1] 1900/4 focus [3] 1876/20 1879/1 1966/2 folks [11] 1848/14 1963/7 1963/21 1963/22 1965/3 1965/4 1968/4 1968/13 1971/4 1973/3 1973/7 follow [4] 1854/8 1881/5 1881/8 1950/17 follow-up [1] 1854/8 followed [2] 1878/23 1886/21 following [3] 1839/18 1865/15 1906/3 follows [3] 1822/13 1918/2 1935/5 fool [1] 1935/21 forced [1] 1900/4 foregoing [1] 1997/19 forget [1] 1956/22 forgets [1] 1957/22 form [3] 1867/8 1873/20 1892/2 formal [1] 1961/24 formally [3] 1890/25 1914/2 1917/21 format [2] 1855/16 1855/17 formation [13] 1826/21 1853/10 1854/22 1855/5 1874/7 1875/13 1875/19 1876/24 1877/2 1877/5 1877/7 1979/13 1979/14 formations [1] 1901/5 formulated [1] 1867/11 forth [4] 1941/9 1981/3 1981/17 1982/4 forward [9] 1829/8 1879/3 1879/6 1890/10 1957/6 1957/7 1957/21 1983/17 1995/12 forwards [1] 1977/10 found [1] 1993/12 foundation [6] 1827/23 1839/2 1839/22 1844/14 1845/9 1892/25	four [4] 1880/6 1924/13 1956/20 1964/5 fourth [2] 1854/23 1854/25 fracture [7] 1854/22 1873/24 1874/7 1978/10 1978/16 1978/25 1979/6 frame [2] 1920/3 1987/12 Francisco [1] 1817/14 Franklin [1] 1818/5 Fraud [1] 1818/3 free [7] 1912/11 1912/16 1963/15 1965/20 1965/24 1966/3 1966/7 friend [1] 1905/5 friends [1] 1905/6 Frilot [1] 1819/5 front [2] 1836/12 1893/24 froze [1] 1904/1 Frugé [1] 1817/2 frustrated [1] 1929/23 frustration [1] 1929/21 full [4] 1837/1 1837/4 1856/13 1918/3 fully [3] 1854/17 1856/15 1890/8 fumes [1] 1936/19 function [4] 1928/11 1928/11 1942/8 1950/10 functioned [1] 1872/4 Fundamental [2] 1854/10 1855/10 FUNDERBURK [1] 1820/16 furnish [1] 1917/17 furnished [1] 1989/17 further [4] 1903/3 1912/14 1966/14 1967/12
<b>F</b>	<b>G</b>	
faced [1] 1873/11 facing [1] 1871/23 fact [18] 1825/15 1851/23 1882/9 1882/22 1883/3 1890/1 1890/18 1901/10 1904/7 1935/12 1949/2 1950/7 1958/20 1981/5 1985/17 1985/24 1986/2 1993/23 fail [4] 1843/17 1843/18 1882/20 1898/14 failure [1] 1883/2 fair [26] 1825/19 1825/21 1825/24 1827/2 1827/9 1830/25 1837/15 1842/18 1846/16 1846/18 1872/2 1875/9 1907/20 1924/14 1959/5 1960/8 1964/8 1967/14 1967/16 1970/7 1972/18 1977/6 1991/19 1993/19 1994/3 1996/15 fairly [3] 1826/3 1838/23 1976/17 fairness [1] 1977/23 falls [1] 1901/21 familiar [17] 1825/19 1826/8 1826/11 1830/17 1830/20 1830/22 1833/6 1845/25 1866/25 1880/20 1880/24 1894/6 1924/15 1946/23 1953/7 1986/25 1992/2 fancy [3] 1904/24 1904/25 1938/2 Fannin [1] 1819/10 far [7] 1888/9 1911/24 1911/24 1952/11 1982/2 1983/24 1997/4 fashion [1] 1892/2 fast [3] 1912/10 1920/20 1935/19 fastens [1] 1989/9 faster [1] 1868/5 fault [1] 1985/22 favor [1] 1931/21 FCRR [4] 1820/18 1997/17 1997/24 1997/24 feature [1] 1859/21 features [2] 1837/5 1933/22 February [3] 1850/6 1906/17 1977/5 February 8th [1] 1850/6 Federal [1] 1817/13 feel [3] 1910/15 1965/21 1968/7 feeling [1] 1905/24 feet [7] 1875/18 1875/20 1876/23 1877/2 1911/25 1981/17 1985/10 fellow [1] 1960/5 felt [5] 1850/19 1850/23 1881/12 1950/10 1953/13 few [10] 1844/10 1852/6 1854/8 1861/19 1872/7 1892/13 1903/11 1903/12 1903/17 1942/11 fiber [1] 1927/1 field [3] 1880/14 1884/5 1923/23 figure [3] 1927/13 1950/11 1952/5 figured [1] 1948/2 file [1] 1865/15 fill [2] 1880/21 1994/18 filled [1] 1950/16 filling [1] 1950/18 final [7] 1914/6 1917/19 1951/2 1956/20 1977/8 1981/3 1984/10 finally [4] 1901/15 1913/16 1914/11 1968/1 find [5] 1880/25 1897/21 1956/25 1981/5 1990/3 finding [2] 1995/9 1995/23 findings [4] 1992/22 1993/20 1993/21 1994/6 fine [5] 1853/22 1868/16 1869/21 1915/8 1918/19 finger [2] 1924/24 1925/2 fingers [1] 1890/5	galley [1] 1910/12 gallon [1] 1978/12 GANNAWAY [1] 1820/4 gas [17] 1830/15 1833/20 1837/10 1873/4 1873/7 1873/16 1882/10 1894/15 1894/22 1895/13 1895/16 1895/25 1896/10 1897/3 1897/4 1936/19 1964/19 Gate [1] 1817/13 gave [2] 1916/21 1929/25 GAVIN [1] 1820/9 gears [1] 1884/2 general [7] 1818/7 1818/11 1842/13 1880/3 1924/18 1937/2 1992/10 generally [11] 1825/19 1828/17 1829/4 1829/4 1840/20 1840/23 1880/24 1924/15 1924/18 1926/6 1941/15 generated [1] 1932/1 GEOFFREY [1] 1820/4 geologists [1] 1969/21 geology [1] 1874/5 George [3] 1867/19 1867/21 1867/25 get [64] 1827/5 1840/24 1844/10 1855/23 1864/7 1880/25 1887/3 1893/18 1894/16 1897/15 1902/3 1903/9 1903/10 1914/23 1916/20 1918/17 1920/16 1920/23 1929/24 1929/24 1932/5 1932/10 1932/12 1933/16 1937/23 1938/13 1938/13 1938/13 1949/1 1949/5 1949/7 1949/8 1949/21 1949/23 1949/23 1951/6 1952/7 1952/9 1952/22 1954/15 1955/4 1955/25 1956/20 1961/25 1962/15 1967/10 1968/1 1970/22 1974/13 1976/13 1976/14 1977/4 1980/4 1980/16 1981/2 1982/22 1985/10 1985/14 1988/3 1991/2 1991/17 1992/13 1993/18 1996/12 gets [2] 1832/23 1978/6 getting [8] 1832/20 1911/3 1912/5 1932/8 1949/24 1951/1 1951/11 1990/23 give [23] 1823/21 1836/5 1854/17 1875/6 1875/7 1877/16 1888/21 1892/10 1917/10 1918/13 1920/17 1920/17 1938/24 1946/16 1948/10 1952/23 1953/18 1966/6 1978/15 1987/12 1992/16 1992/22 1995/4	

<p><b>G</b></p> <p>given [5] 1873/10 1898/17 1950/7 1971/8 1977/23</p> <p>gives [1] 1886/25</p> <p>giving [1] 1978/24</p> <p>glad [1] 1960/11</p> <p>glass [2] 1933/4 1936/3</p> <p>global [3] 1842/16 1855/24 1875/7</p> <p>globo [1] 1913/15</p> <p>GmbH [1] 1815/8</p> <p>go [95] 1826/14 1829/8 1838/16 1840/11 1840/13 1842/8 1847/16 1851/12 1856/3 1856/11 1856/20 1857/1 1857/18 1858/14 1864/12 1864/19 1865/22 1866/14 1866/17 1874/18 1874/23 1875/3 1876/1 1876/15 1876/15 1876/20 1878/13 1888/25 1890/1 1891/15 1892/10 1892/22 1898/24 1900/4 1900/17 1903/9 1903/10 1905/19 1910/22 1910/24 1913/6 1920/19 1922/20 1924/11 1925/15 1925/17 1931/2 1935/25 1937/19 1937/20 1937/20 1937/21 1937/22 1938/6 1938/14 1938/20 1940/7 1941/22 1956/19 1958/4 1959/8 1959/17 1959/25 1960/3 1960/4 1961/22 1962/3 1962/23 1963/4 1966/13 1968/13 1969/12 1971/11 1971/18 1972/12 1973/11 1975/9 1975/22 1979/4 1979/9 1980/1 1981/9 1983/6 1987/21 1990/4 1990/12 1992/13 1992/19 1992/20 1992/21 1992/23 1993/7 1993/15 1994/17 1996/11</p> <p>goal [3] 1853/18 1854/4 1854/5</p> <p>God [1] 1830/13</p> <p>Godwin [7] 1820/7 1820/7 1820/11 1916/18 1916/19 1917/1 1917/2</p> <p>Godwin's [1] 1917/7</p> <p>goes [12] 1860/1 1877/16 1885/7 1886/16 1921/23 1928/4 1928/5 1935/4 1943/1 1965/19 1984/16 1984/16</p> <p>going [89] 1823/6 1824/21 1836/12 1837/16 1839/1 1840/9 1840/19 1840/21 1841/5 1843/6 1844/14 1847/16 1848/6 1851/5 1853/19 1854/15 1856/1 1856/4 1856/20 1861/20 1868/24 1870/25 1871/6 1874/17 1874/18 1875/22 1880/4 1885/14 1891/22 1893/16 1894/22 1896/5 1896/17 1898/13 1910/25 1920/2 1922/22 1924/25 1925/2 1925/15 1925/16 1926/21 1927/16 1929/14 1930/6 1937/2 1939/5 1939/16 1940/24 1941/22 1946/15 1946/15 1946/18 1947/13 1948/9 1948/9 1948/13 1949/5 1950/17 1952/6 1952/6 1952/7 1953/16 1955/9 1958/3 1958/13 1959/3 1960/4 1961/13 1970/6 1971/17 1972/19 1976/18 1978/22 1979/1 1982/22 1983/25 1983/25 1984/1 1986/21 1988/24 1991/22 1992/17 1992/18 1995/22 1995/24 1995/25 1996/1 1996/4</p> <p>Golden [1] 1817/13</p> <p>gone [4] 1887/20 1890/19 1890/21 1976/4</p> <p>good [40] 1822/5 1822/16 1822/17 1832/3 1832/5 1835/13 1835/14 1835/14 1839/7 1841/8 1841/11 1847/7 1849/7 1849/12 1849/14 1849/15 1849/17 1849/18 1852/14 1852/17 1858/13 1861/10 1866/23 1867/10 1881/10 1883/7 1886/25 1915/19 1918/9 1918/20 1931/24 1935/24 1943/17 1947/12 1951/20 1954/5 1960/24 1964/12 1965/2 1974/15</p> <p>got [41] 1835/24 1863/23 1871/12 1880/5 1905/21 1905/23 1909/4 1912/11 1919/11 1922/24 1928/2 1931/4 1931/4 1931/18 1934/8 1934/14 1934/24 1934/24 1938/11 1938/11 1946/11 1946/21 1948/2 1948/3 1948/5 1949/4 1949/15 1949/20 1951/9</p>	<p>1952/5 1961/19 1976/25 1977/17 1977/21 1980/1 1982/10 1983/13 1988/18 1991/16 1994/21 1995/16</p> <p>Gotcha [1] 1949/9</p> <p>gotten [1] 1991/10</p> <p>grades [1] 1976/22</p> <p>gradient [3] 1978/10 1978/16 1978/25</p> <p>graduated [1] 1918/23</p> <p>Grand [1] 1819/14</p> <p>graph [1] 1901/1</p> <p>graphic [2] 1926/5 1970/2</p> <p>great [7] 1826/3 1843/2 1918/22 1965/20 1965/25 1966/24 1968/7</p> <p>ground [1] 1834/4</p> <p>group [3] 1816/18 1841/25 1971/19</p> <p>Guerra [1] 1816/15</p> <p>guess [6] 1838/20 1892/11 1895/18 1923/2 1924/13 1953/2</p> <p>guide [16] 1833/13 1921/2 1963/23 1963/23 1964/3 1964/11 1964/24 1965/14 1966/1 1969/11 1969/21 1984/16 1984/23 1990/16 1990/18 1994/9</p> <p>Guide's [4] 1964/18 1964/25 1965/6 1968/2</p> <p>GULF [10] 1815/5 1824/25 1828/2 1828/23 1829/10 1829/19 1847/23 1848/18 1940/22 1940/25</p> <p>guy [4] 1953/7 1969/20 1982/22 1992/5</p> <p>guys [8] 1846/14 1894/18 1894/21 1921/19 1967/19 1972/3 1973/14 1974/13</p>	<p>Harrell's [1] 1902/13</p> <p>HARTLEY [2] 1820/8 1822/10</p> <p>has [50] 1831/7 1834/6 1836/11 1839/2 1852/2 1852/3 1856/13 1857/3 1862/25 1863/7 1868/6 1873/3 1873/10 1873/12 1873/14 1873/15 1876/5 1880/14 1885/13 1887/15 1889/3 1889/5 1889/6 1894/14 1895/15 1898/8 1898/11 1899/7 1899/9 1903/11 1909/4 1914/1 1917/5 1917/11 1927/2 1927/5 1928/9 1931/4 1939/11 1940/20 1941/14 1959/2 1962/15 1962/16 1962/16 1963/6 1981/24 1988/10 1989/6 1990/9</p> <p>hasn't [1] 1890/21</p> <p>HAUSER [1] 1818/4</p> <p>have [241]</p> <p>haven't [8] 1851/5 1859/13 1868/15 1874/1 1891/21 1910/17 1912/4 1943/15</p> <p>having [12] 1822/12 1823/14 1824/18 1824/18 1828/19 1848/7 1867/15 1891/23 1909/16 1918/1 1960/17 1971/14</p> <p>HAYCRAFT [1] 1818/19</p> <p>hazard [2] 1972/3 1972/5</p> <p>hazards [3] 1972/6 1972/20 1972/21</p> <p>HB [1] 1820/19</p> <p>HB-406 [1] 1820/19</p> <p>he [168] 1831/8 1832/18 1832/18 1835/11 1835/12 1835/14 1835/14 1836/10 1836/20 1836/22 1837/20 1837/23 1838/1 1838/2 1838/3 1838/5 1839/2 1839/4 1839/4 1839/13 1839/14 1839/16 1839/17 1839/18 1839/22 1840/3 1840/8 1840/8 1840/9 1840/20 1840/24 1842/15 1844/24 1845/4 1852/12 1852/12 1852/13 1852/20 1856/14 1856/22 1857/5 1857/7 1857/8 1857/8 1857/9 1857/12 1857/12 1857/18 1857/24 1859/9 1861/9 1861/12 1861/15 1861/16 1861/17 1861/18 1867/14 1871/22 1871/22 1872/1 1873/12 1873/14 1873/15 1876/5 1888/4 1888/6 1889/17 1889/18 1889/18 1889/21 1890/8 1892/25 1905/6 1905/7 1905/13 1905/16 1905/17 1905/20 1905/21 1905/23 1905/24 1906/13 1906/16 1906/19 1906/20 1906/24 1907/13 1907/16 1907/16 1907/16 1907/18 1907/23 1907/23 1907/23 1907/25 1908/1 1908/6 1908/6 1908/6 1908/8 1908/8 1911/12 1911/18 1911/21 1911/22 1911/22 1911/24 1912/9 1912/9 1912/10 1915/3 1915/4 1922/10 1922/23 1922/24 1923/8 1938/7 1943/16 1943/18 1943/19 1943/20 1946/12 1946/12 1946/18 1954/20 1957/22 1961/4 1961/7 1963/24 1964/1 1964/4 1964/14 1964/20 1964/21 1964/21 1965/19 1965/25 1966/18 1966/19 1966/19 1966/21 1966/24 1967/17 1967/22 1968/4 1968/6 1974/25 1976/12 1977/21 1977/23 1980/12 1980/15 1980/23 1981/24 1982/16 1982/21 1982/23 1983/13 1983/14 1983/17 1984/7 1984/7 1984/22 1985/3 1985/6 1990/21 1994/12 1994/13</p> <p>he'd [2] 1922/4 1922/5</p> <p>he'll [2] 1955/17 1984/9</p> <p>he's [20] 1824/11 1839/11 1840/23 1871/18 1892/25 1900/3 1931/4 1943/17 1950/18 1960/23 1960/24 1963/19 1963/21 1963/24 1967/13 1982/16 1982/25 1983/1 1984/2 1984/4</p> <p>head [3] 1904/2 1984/13 1992/14</p> <p>headed [1] 1922/13</p> <p>heads [1] 1994/16</p> <p>hear [7] 1843/11 1898/13 1899/1 1899/1 1914/25 1960/15 1974/2</p> <p>heard [29] 1822/24 1823/5 1862/14 1862/17</p>
	<p><b>H</b></p> <p>had [192]</p> <p>hadn't [1] 1994/21</p> <p>Hafle [7] 1982/14 1982/15 1982/18 1982/20 1983/2 1983/3 1984/23</p> <p>half [2] 1952/17 1986/20</p> <p>hall [1] 1943/14</p> <p>Halliburton [23] 1820/7 1820/11 1822/7 1822/11 1827/19 1829/3 1829/6 1829/7 1829/10 1829/20 1829/23 1848/19 1866/22 1877/10 1877/20 1877/22 1917/3 1939/12 1939/12 1939/13 1953/6 1953/14 1986/13</p> <p>Halliburton's [1] 1831/9</p> <p>halt [1] 1862/9</p> <p>hand [9] 1832/23 1835/25 1838/17 1841/24 1842/4 1852/2 1852/4 1857/13 1866/19</p> <p>handbook [9] 1826/4 1826/12 1833/6 1856/2 1880/10 1880/13 1880/14 1881/25 1886/7</p> <p>handful [1] 1880/5</p> <p>handled [3] 1828/21 1868/7 1892/4</p> <p>handles [2] 1855/22 1943/8</p> <p>hands [1] 1894/11</p> <p>hands-on [1] 1894/11</p> <p>hang [2] 1852/15 1886/17</p> <p>hang-off [1] 1886/17</p> <p>hanger [1] 1990/14</p> <p>HANKEY [1] 1817/18</p> <p>happen [8] 1824/7 1840/21 1882/21 1892/8 1892/14 1892/14 1897/21 1961/6</p> <p>happened [12] 1841/18 1865/3 1870/15 1871/4 1885/1 1891/17 1897/7 1898/17 1900/9 1951/17 1961/8 1974/11</p> <p>happening [1] 1855/24</p> <p>happens [5] 1824/6 1902/25 1956/16 1972/15 1991/1</p> <p>happy [3] 1854/2 1869/17 1986/17</p> <p>hard [4] 1920/20 1935/19 1953/2 1965/21</p> <p>hard-and-fast [2] 1920/20 1935/19</p> <p>hardly [1] 1949/3</p> <p>HARIKLIA [2] 1818/22 1958/6</p> <p>Harrell [11] 1831/18 1869/5 1929/3 1929/17 1929/18 1929/19 1929/20 1945/8 1968/15 1977/14 1977/16</p>	

**H**  
heard... [25] 1862/20 1863/5 1863/10 1863/11 1891/18 1891/20 1907/4 1907/9 1907/9 1907/15 1907/16 1907/22 1907/24 1908/6 1930/20 1930/21 1945/9 1945/11 1945/15 1945/15 1961/8 1962/22 1971/24 1991/18 1991/25  
hearing [2] 1907/17 1914/10  
heat [2] 1912/7 1912/8  
heavily [1] 1836/9  
heavy [3] 1826/25 1828/6 1948/13  
held [6] 1828/17 1885/22 1885/23 1885/24 1885/25 1969/14  
helicopter [5] 1900/11 1910/11 1923/1 1923/5 1987/10  
heliport [1] 1900/12  
heliport's [1] 1937/11  
helivac [1] 1937/10  
help [4] 1871/13 1900/12 1951/12 1960/16  
helped [1] 1828/23  
helpful [1] 1842/24  
helps [1] 1870/18  
her [3] 1860/22 1861/1 1861/1  
here [50] 1835/25 1843/8 1846/24 1846/24 1847/14 1848/14 1852/16 1854/17 1854/21 1855/15 1856/6 1858/11 1861/6 1862/24 1863/1 1863/17 1864/7 1864/11 1864/23 1868/2 1875/9 1876/13 1878/9 1879/21 1885/1 1915/15 1917/13 1934/7 1934/24 1934/25 1934/25 1934/25 1946/16 1960/20 1960/21 1963/8 1967/6 1967/9 1975/15 1977/7 1978/7 1979/6 1979/10 1983/10 1983/17 1984/21 1985/18 1990/4 1995/4 1995/23  
hereby [1] 1997/19  
Herman [3] 1815/22 1815/22 1815/23  
high [6] 1943/22 1944/8 1958/8 1960/11 1968/8 1995/8  
high-performing [1] 1968/8  
higher [2] 1855/16 1952/14  
highlighted [1] 1854/21  
highly [1] 1843/25  
HILL [1] 1820/9  
him [34] 1831/21 1832/19 1835/7 1836/12 1840/18 1841/4 1841/11 1853/21 1857/13 1888/2 1888/3 1889/18 1889/23 1897/15 1905/15 1907/12 1922/6 1922/17 1922/18 1922/18 1922/21 1922/22 1922/25 1923/3 1943/14 1964/4 1964/6 1964/7 1967/15 1982/8 1982/11 1982/21 1984/9 1994/11  
himself [1] 1857/8  
hinged [1] 1989/9  
his [27] 1833/23 1834/18 1834/20 1836/6 1836/18 1839/19 1841/6 1857/5 1861/17 1878/14 1889/19 1889/21 1892/9 1892/10 1905/21 1906/24 1913/13 1916/14 1922/8 1922/9 1946/12 1961/3 1966/19 1968/4 1973/1 1977/15 1977/16  
Historically [1] 1889/4  
history [7] 1847/25 1848/6 1848/7 1878/6 1878/13 1900/25 1918/14  
hit [1] 1898/13  
hitch [6] 1850/7 1919/21 1919/24 1920/6 1921/25 1945/6  
hitches [2] 1850/5 1850/17  
HITEC [9] 1835/1 1836/9 1837/13 1839/14 1839/15 1876/6 1931/15 1931/19 1931/20  
hold [2] 1886/2 1934/18  
Holdings [5] 1819/5 1819/8 1819/12 1819/16 1819/19  
holds [1] 1989/7  
hole [15] 1857/15 1869/8 1876/5 1876/5

1876/11 1898/8 1950/16 1950/18 1953/17 1978/22 1987/6 1987/21 1987/22 1987/25 1988/4  
Holthaus [1] 1817/2  
Home [2] 1951/14 1951/15  
honest [1] 1836/8  
honor [48] 1822/8 1822/10 1824/11 1827/22 1831/24 1834/8 1839/1 1839/21 1845/8 1847/7 1864/1 1879/17 1879/22 1886/8 1887/13 1889/21 1892/24 1899/7 1903/4 1903/7 1903/13 1912/14 1913/2 1913/10 1913/20 1914/11 1914/15 1914/16 1915/21 1916/2 1916/3 1916/10 1916/12 1916/18 1917/2 1917/4 1917/9 1947/9 1953/25 1954/2 1958/2 1958/5 1960/10 1960/14 1961/11 1986/17 1991/19 1997/8  
HONORABLE [1] 1815/15  
honored [1] 1968/7  
hope [1] 1961/6  
Hopefully [1] 1903/12  
hoping [1] 1908/16  
horizon [118] 1815/4 1823/14 1824/24 1826/12 1828/3 1828/12 1833/7 1833/12 1834/24 1838/9 1838/19 1838/23 1840/17 1846/1 1846/21 1847/22 1848/10 1848/16 1848/17 1849/2 1849/10 1850/22 1851/23 1852/10 1858/24 1859/4 1860/15 1861/9 1862/7 1863/6 1863/16 1865/11 1865/11 1865/19 1867/1 1867/19 1867/21 1870/13 1872/8 1872/21 1872/23 1880/17 1883/11 1883/24 1884/4 1884/9 1887/25 1888/18 1888/18 1888/19 1889/1 1890/14 1890/19 1891/6 1894/5 1895/5 1896/23 1902/19 1904/4 1904/7 1906/1 1906/4 1908/19 1909/7 1909/10 1910/5 1919/9 1919/19 1919/22 1919/25 1920/7 1921/5 1923/17 1924/7 1924/11 1924/19 1926/23 1927/10 1927/20 1928/15 1933/17 1934/15 1938/22 1939/15 1940/20 1942/23 1943/2 1943/7 1945/6 1946/9 1947/17 1951/17 1951/22 1958/21 1958/23 1962/23 1962/25 1963/15 1963/20 1963/22 1964/5 1965/1 1965/11 1968/6 1968/14 1968/17 1969/8 1976/25 1977/4 1977/18 1977/18 1978/6 1982/9 1986/6 1987/8 1992/1 1993/5 1997/3  
Horizon's [2] 1943/8 1977/11  
Horn [1] 1964/6  
horse [4] 1907/3 1908/9 1923/9 1923/16  
hoses [1] 1928/5  
hot [2] 1912/6 1927/3  
Houma [2] 1816/20 1923/6  
hour [1] 1986/20  
hours [11] 1866/18 1871/11 1921/8 1952/13 1952/13 1959/20 1961/22 1970/17 1970/20 1970/21 1995/23  
house [1] 1953/6  
Houston [7] 1817/7 1819/10 1819/21 1820/5 1820/13 1820/17 1994/13  
how [65] 1825/17 1840/23 1844/7 1847/1 1852/24 1853/5 1853/7 1856/22 1857/2 1860/1 1863/8 1872/11 1875/12 1876/4 1876/4 1876/10 1877/17 1880/25 1880/25 1889/14 1892/4 1894/6 1894/18 1894/19 1894/20 1894/24 1899/5 1899/6 1900/5 1900/12 1900/24 1901/4 1908/1 1911/21 1911/24 1911/24 1919/18 1922/3 1924/15 1927/24 1933/16 1936/11 1946/8 1946/15 1951/8 1951/9 1951/10 1952/6 1952/7 1954/24 1956/3 1964/3 1964/20 1964/25 1966/5 1967/19 1968/17 1969/8 1970/18 1970/18 1972/19 1977/23 1980/19 1982/25 1986/19  
however [3] 1883/22 1897/16 1922/4

**HUGH [1] 1820/15**  
Hughes [1] 1819/19  
hundred [1] 1948/14  
hung [2] 1884/24 1886/14  
hunts [1] 1972/3  
hurry [1] 1967/10  
hydraulic [3] 1927/3 1927/5 1927/7  
hydrocarbon [1] 1852/21  
hydrocarbons [2] 1853/13 1953/17  
hydrostatic [2] 1826/20 1829/13  
HYMEL [1] 1819/16  
hypothetical [1] 1897/20  
hypothetically [1] 1894/22  
**I**  
I'd [10] 1913/6 1913/21 1937/5 1953/9 1953/18 1953/19 1961/2 1994/11 1994/14 1994/15  
I'll [13] 1822/11 1827/22 1853/21 1854/2 1880/6 1881/17 1892/24 1903/11 1952/16 1984/8 1984/9 1990/2 1991/19  
I'm [94] 1824/21 1826/10 1826/18 1830/17 1830/22 1835/19 1839/1 1839/13 1840/1 1842/17 1843/11 1844/14 1846/8 1847/11 1847/12 1847/16 1850/14 1851/5 1851/25 1852/14 1852/15 1853/19 1856/1 1856/4 1856/20 1856/24 1859/2 1860/14 1861/20 1863/18 1864/19 1866/7 1868/12 1868/22 1869/1 1869/15 1869/17 1870/11 1870/11 1870/25 1871/1 1871/6 1871/17 1874/18 1875/9 1875/25 1876/15 1878/10 1880/4 1885/14 1887/6 1891/8 1895/2 1896/4 1897/19 1899/19 1900/20 1904/1 1908/15 1910/25 1911/13 1914/21 1915/1 1917/13 1917/25 1918/10 1918/11 1919/10 1920/2 1924/4 1924/24 1925/2 1930/6 1931/15 1937/2 1941/4 1943/6 1944/21 1944/23 1944/23 1947/13 1951/1 1951/16 1951/21 1953/4 1953/4 1960/18 1961/2 1961/8 1977/3 1985/20 1986/17 1987/24 1991/23  
I've [13] 1835/24 1838/10 1850/4 1880/5 1891/18 1903/1 1906/21 1924/4 1945/15 1945/23 1952/16 1964/4 1991/17  
i.e [1] 1931/21  
IADC [1] 1878/2  
idea [2] 1845/15 1901/6  
identical [1] 1903/22  
identified [2] 1823/21 1824/9  
identifies [1] 1978/7  
identify [1] 1972/20  
ignition [1] 1936/24  
ignorance [1] 1948/16  
Illinois [1] 1818/24  
immediately [4] 1843/19 1853/12 1906/3 1945/1  
impact [2] 1928/18 1928/18  
imperative [1] 1897/23  
implement [1] 1853/5  
implied [1] 1915/6  
importance [1] 1826/22  
important [11] 1827/13 1849/16 1853/17 1854/3 1860/1 1865/4 1881/3 1882/10 1921/21 1944/3 1944/17  
impressive [1] 1848/7  
Imprevento [1] 1816/8  
improve [2] 1956/3 1980/19  
in globo [1] 1913/15  
in-house [1] 1953/6  
INC [16] 1815/11 1818/19 1818/22 1819/3 1819/6 1819/7 1819/9 1819/10 1819/13 1819/13 1819/17 1819/17 1819/20 1819/21 1820/7 1820/12  
inch [5] 1875/23 1897/16 1912/5 1927/2

<p><b>I</b></p> <p>inch... [1] 1927/4</p> <p>inches [1] 1918/18</p> <p>incident [11] 1838/14 1848/8 1884/17 1885/21 1886/21 1895/19 1902/17 1907/5 1945/15 1958/16 1965/9</p> <p>incidents [2] 1966/8 1966/9</p> <p>include [7] 1874/6 1939/2 1939/3 1956/10 1956/14 1956/22 1959/23</p> <p>included [3] 1855/9 1966/8 1985/13</p> <p>includes [1] 1967/22</p> <p>including [5] 1905/14 1939/20 1963/23 1969/9 1977/8</p> <p>incorporate [3] 1868/3 1983/9 1983/14</p> <p>INCs [1] 1966/10</p> <p>independent [1] 1977/3</p> <p>indicate [3] 1910/20 1949/21 1996/9</p> <p>indicated [2] 1856/8 1911/18</p> <p>indication [2] 1843/22 1844/12</p> <p>indications [1] 1833/25</p> <p>indicators [1] 1833/24</p> <p>individual [2] 1842/15 1851/10</p> <p>individuals [1] 1977/8</p> <p>induced [1] 1889/4</p> <p>industry [1] 1964/19</p> <p>influx [6] 1826/20 1852/21 1853/2 1853/10 1853/14 1859/15</p> <p>information [49] 1823/3 1834/22 1834/25 1836/5 1836/11 1836/17 1836/20 1836/22 1836/24 1837/9 1837/11 1838/20 1844/18 1858/16 1858/25 1871/20 1873/12 1873/20 1873/24 1874/6 1880/25 1931/19 1932/10 1948/21 1953/19 1956/18 1969/4 1969/9 1969/11 1969/15 1970/8 1976/13 1976/18 1977/19 1977/22 1977/25 1978/24 1979/7 1979/10 1979/14 1979/16 1979/20 1984/5 1985/14 1985/24 1986/4 1986/8 1986/12 1986/14</p> <p>informed [1] 1895/15</p> <p>initiate [2] 1884/10 1885/14</p> <p>initiated [1] 1871/12</p> <p>injured [1] 1960/23</p> <p>injury [3] 1965/24 1966/3 1966/7</p> <p>injury-free [3] 1965/24 1966/3 1966/7</p> <p>input [2] 1828/20 1873/15</p> <p>inputs [1] 1935/16</p> <p>inside [3] 1838/25 1839/5 1932/20</p> <p>INSITE [4] 1931/16 1931/16 1931/21 1932/1</p> <p>inspect [1] 1972/19</p> <p>inspection [5] 1829/21 1891/1 1903/22 1903/24 1906/11</p> <p>inspections [2] 1891/2 1904/10</p> <p>installation [4] 1923/10 1923/14 1923/16 1977/11</p> <p>instance [2] 1941/22 1957/21</p> <p>instances [2] 1883/21 1954/11</p> <p>instructed [3] 1871/22 1872/25 1873/1</p> <p>instruction [2] 1854/16 1913/15</p> <p>instructions [1] 1893/19</p> <p>Insurance [1] 1993/4</p> <p>integrity [9] 1827/1 1827/4 1855/5 1875/4 1875/13 1875/17 1875/18 1877/4 1877/25</p> <p>intended [1] 1872/4</p> <p>interacting [1] 1849/4</p> <p>interaction [1] 1879/12</p> <p>interest [2] 1962/23 1990/2</p> <p>internal [1] 1957/18</p> <p>International [2] 1819/22 1820/2</p> <p>interpret [2] 1893/14 1899/6</p> <p>interpretation [1] 1899/3</p> <p>introduce [2] 1913/3 1913/6</p> <p>introduced [2] 1864/4 1913/14</p>	<p>intrusion [1] 1833/19</p> <p>inverted [1] 1934/17</p> <p>investigate [2] 1856/15 1950/11</p> <p>investigated [2] 1869/13 1869/24</p> <p>investigation [3] 1870/2 1895/9 1895/11</p> <p>involve [1] 1946/22</p> <p>involved [16] 1827/20 1828/25 1829/1 1829/20 1829/23 1867/14 1883/10 1939/17 1939/19 1939/25 1946/11 1947/5 1950/23 1973/5 1973/7 1979/22</p> <p>involving [1] 1894/5</p> <p>Irpino [2] 1817/8 1817/9</p> <p>is [352]</p> <p>isn't [18] 1834/11 1835/7 1851/24 1883/6 1923/17 1936/11 1936/14 1942/13 1942/16 1943/2 1943/9 1943/17 1944/19 1945/3 1953/17 1955/24 1980/15 1980/23</p> <p>isolate [1] 1948/12</p> <p>issue [11] 1823/20 1824/9 1873/2 1892/18 1893/10 1893/20 1897/12 1904/15 1909/22 1970/25 1992/25</p> <p>issued [3] 1841/25 1842/4 1993/3</p> <p>issues [16] 1879/14 1888/7 1888/8 1888/10 1889/1 1890/14 1892/15 1892/23 1901/25 1922/6 1922/8 1970/16 1970/17 1970/23 1970/24 1972/23</p> <p>it [446]</p> <p>it's [104] 1823/18 1823/19 1824/6 1825/17 1825/19 1827/10 1827/13 1829/9 1831/17 1838/20 1839/6 1841/6 1841/6 1846/25 1849/16 1850/9 1851/25 1853/19 1855/14 1858/7 1862/21 1865/9 1865/12 1867/2 1873/10 1877/4 1877/21 1883/7 1884/13 1888/24 1890/2 1897/23 1900/17 1900/18 1903/21 1903/21 1903/22 1904/22 1904/25 1904/25 1910/4 1910/5 1910/8 1910/25 1914/5 1915/6 1918/22 1921/5 1921/11 1921/23 1923/18 1923/19 1923/22 1923/25 1925/8 1926/5 1926/12 1926/16 1926/21 1927/6 1928/2 1928/5 1933/10 1933/21 1935/19 1936/9 1936/24 1940/21 1940/24 1941/1 1941/8 1941/12 1941/12 1941/16 1941/22 1942/20 1944/2 1944/13 1944/14 1944/17 1944/20 1944/25 1946/2 1946/12 1947/24 1948/9 1950/11 1951/3 1951/13 1952/6 1952/6 1952/7 1954/17 1956/19 1958/2 1958/7 1977/8 1978/22 1980/9 1984/12 1989/9 1993/16 1995/16 1997/9</p> <p>item [1] 1994/19</p> <p>items [7] 1993/20 1994/10 1995/3 1995/8 1995/22 1996/6 1996/23</p> <p>its [9] 1824/24 1838/14 1889/12 1890/8 1891/7 1931/18 1940/4 1942/23 1953/3</p> <p>itself [5] 1880/17 1881/25 1895/16 1900/18 1936/11</p>	<p>job [34] 1822/21 1822/25 1823/22 1824/4 1824/10 1827/5 1835/14 1841/3 1841/6 1861/1 1861/17 1864/23 1874/19 1874/25 1875/10 1881/10 1893/17 1921/15 1921/15 1935/10 1942/23 1943/11 1953/3 1965/25 1967/10 1967/17 1967/18 1968/7 1972/1 1972/2 1972/4 1973/1 1973/2 1973/5</p> <p>jobs [7] 1824/2 1824/4 1824/19 1968/23 1995/7 1995/23 1996/3</p> <p>Jodi [5] 1820/18 1820/20 1997/17 1997/24 1997/24</p> <p>Joe [3] 1835/3 1835/5 1835/17</p> <p>JOHN [9] 1817/3 1819/20 1820/16 1921/2 1963/23 1964/12 1969/11 1969/21 1984/16</p> <p>Johnson [10] 1888/17 1889/14 1890/2 1890/11 1905/14 1963/12 1963/18 1965/8 1966/21 1995/17</p> <p>joint [5] 1885/9 1885/10 1898/13 1898/20 1927/25</p> <p>jointly [1] 1867/11</p> <p>joints [2] 1857/6 1990/11</p> <p>JONES [1] 1820/3</p> <p>Joseph [2] 1835/16 1861/6</p> <p>JR [3] 1816/12 1820/8 1820/8</p> <p>JUDGE [6] 1815/15 1863/18 1880/10 1907/19 1917/14 1944/23</p> <p>Judge Barbier [1] 1880/10</p> <p>jump [3] 1838/15 1838/15 1911/24</p> <p>jumped [2] 1911/22 1912/9</p> <p>June [6] 1884/9 1884/10 1884/19 1885/21 1886/21 1887/8</p> <p>June 2003 [1] 1885/21</p> <p>June 30th [1] 1884/19</p> <p>junior [3] 1954/20 1980/12 1983/3</p> <p>just [103] 1826/17 1830/17 1839/13 1842/4 1844/6 1847/12 1847/18 1851/4 1851/12 1852/15 1852/18 1853/16 1854/7 1854/17 1855/24 1856/4 1857/25 1858/11 1858/14 1860/16 1861/20 1862/24 1862/24 1863/4 1863/11 1863/16 1864/4 1871/12 1871/19 1872/7 1874/16 1875/7 1875/16 1876/20 1879/17 1881/7 1882/5 1882/17 1884/12 1885/1 1885/15 1886/21 1888/21 1889/14 1890/2 1892/13 1897/19 1900/13 1905/17 1907/3 1907/23 1909/5 1910/25 1912/7 1913/21 1914/22 1915/6 1916/12 1917/13 1917/16 1918/17 1923/3 1924/25 1925/18 1926/2 1927/23 1928/1 1928/19 1929/2 1930/7 1934/14 1935/4 1937/16 1938/16 1938/17 1939/2 1943/13 1944/5 1944/7 1946/24 1948/18 1950/7 1951/1 1953/11 1954/2 1958/13 1959/14 1961/2 1970/13 1971/17 1975/6 1977/3 1978/6 1979/25 1984/13 1985/22 1987/12 1988/11 1989/11 1991/11 1992/16 1996/11 1996/11</p> <p>Justice [4] 1817/11 1817/15 1817/21 1818/2</p>
	<p><b>J</b></p> <p>JAMES [4] 1815/19 1818/12 1888/17 1957/5</p> <p>January [6] 1850/5 1865/12 1866/15 1906/17 1977/1 1977/5</p> <p>January 19th [1] 1850/5</p> <p>January 28th [1] 1865/12</p> <p>January 29th [1] 1866/15</p> <p>January/February [1] 1977/5</p> <p>Jason [7] 1832/13 1832/18 1867/4 1867/11 1867/13 1867/16 1907/22</p> <p>Jason's [1] 1845/4</p> <p>Jefferson [2] 1815/20 1819/17</p> <p>JEFFREY [1] 1816/9</p> <p>JERRY [1] 1820/12</p> <p>JESSICA [2] 1817/22 1817/23</p> <p>JIMMY [9] 1817/6 1831/18 1869/5 1902/13 1929/2 1929/18 1929/19 1945/8 1977/16</p>	<p><b>K</b></p> <p>Kaluza [7] 1922/13 1922/16 1922/19 1923/8 1946/4 1961/20 1984/23</p> <p>Kanner [2] 1818/15 1818/15</p> <p>KARIS [4] 1818/22 1917/3 1958/6 1997/7</p> <p>Kathleen [1] 1860/17</p> <p>Katz [1] 1815/22</p> <p>keep [9] 1844/3 1853/13 1874/17 1936/19 1968/8 1971/17 1986/21 1991/21 1991/22</p> <p>keeping [4] 1940/8 1941/1 1941/10 1941/12</p> <p>keeps [2] 1950/16 1989/10</p> <p>Keith [6] 1835/3 1835/5 1835/16 1835/17 1861/6 1914/12</p> <p>KELLEY [1] 1818/4</p> <p>Kent [1] 1888/17</p> <p>kept [2] 1833/9 1929/12</p>

<b>K</b>	Lafayette [2] 1815/21 1819/18 Lafleur [1] 1819/16 laid [3] 1924/15 1933/25 1934/3 Lamar [1] 1820/12 Lambert [1] 1984/23 land [2] 1919/9 1931/1 landed [4] 1923/1 1923/5 1923/5 1923/7 LANGAN [1] 1818/22 lanyard [2] 1912/5 1912/12 large [4] 1843/4 1859/3 1896/10 1938/22 Lasalle [1] 1818/23 last [20] 1830/15 1830/23 1838/12 1844/10 1875/19 1898/2 1902/10 1917/16 1921/25 1929/13 1945/6 1945/23 1947/15 1950/21 1952/16 1959/17 1960/5 1970/17 1970/19 1990/21 latch [1] 1934/9 latched [1] 1926/21 late [3] 1825/16 1888/16 1889/9 latter [1] 1950/3 launched [1] 1911/19 Law [3] 1816/18 1816/21 1817/8 LAWRENCE [1] 1817/24 lay [3] 1956/6 1981/16 1988/4 layman's [1] 1953/2 layout [1] 1924/18 lead [2] 1892/8 1892/10 leader [38] 1861/24 1864/16 1919/4 1919/7 1919/9 1919/12 1919/18 1920/13 1920/24 1921/1 1921/7 1921/10 1921/10 1921/25 1922/9 1922/12 1943/24 1945/12 1948/21 1950/10 1950/23 1951/22 1952/24 1953/12 1958/17 1958/25 1959/2 1959/4 1963/24 1964/5 1964/22 1967/23 1969/8 1970/9 1975/19 1987/5 1991/12 1996/20 leader leaders [1] 1970/9 leaders [10] 1832/7 1849/1 1921/4 1941/24 1945/12 1961/15 1967/23 1970/9 1974/8 1985/1 leadership [4] 1878/18 1878/20 1889/10 1967/14 leading [1] 1888/11 leads [1] 1969/13 leaf [1] 1959/14 leak [5] 1855/7 1875/13 1875/22 1877/13 1978/9 leak-off [5] 1855/7 1875/13 1875/22 1877/13 1978/9 leakage [1] 1869/6 leaked [4] 1868/19 1869/2 1869/9 1893/5 leaking [4] 1893/10 1893/21 1949/25 1950/13 learn [1] 1900/12 learned [2] 1842/21 1952/16 LEASING [1] 1815/8 least [11] 1822/21 1834/14 1845/6 1852/1 1880/24 1899/8 1905/16 1951/15 1959/21 1969/19 1986/20 leave [1] 1892/9 leaves [2] 1859/9 1957/1 leaving [1] 1904/8 led [1] 1995/22 left [15] 1835/25 1838/17 1852/2 1866/19 1892/22 1898/22 1920/7 1920/9 1922/1 1922/21 1931/12 1933/7 1959/21 1981/4 1981/5 left-hand [4] 1835/25 1838/17 1852/2 1866/19 Leger [2] 1816/12 1816/12 length [3] 1831/17 1835/13 1860/20 Leo [1] 1985/5 less [2] 1871/2 1921/8 lessons [1] 1842/21	let [33] 1826/18 1837/8 1840/11 1853/21 1856/1 1858/14 1860/16 1862/24 1862/24 1864/7 1864/7 1869/19 1870/17 1870/25 1875/16 1875/21 1881/13 1882/5 1884/2 1884/12 1888/21 1905/4 1907/12 1911/6 1913/21 1914/1 1946/17 1956/2 1958/8 1961/13 1973/21 1980/18 1995/4 let's [38] 1822/7 1835/20 1838/6 1841/22 1842/3 1856/1 1857/1 1859/12 1870/20 1874/16 1880/9 1882/24 1884/12 1886/6 1889/25 1894/2 1908/13 1910/4 1912/20 1912/25 1913/18 1916/20 1927/10 1932/20 1933/11 1933/11 1935/25 1941/23 1960/1 1960/25 1961/9 1965/8 1967/12 1976/10 1977/19 1977/24 1991/20 1997/9 level [5] 1833/24 1855/16 1925/24 1937/13 1995/12 levers [1] 1831/13 Lewis [5] 1816/5 1818/18 1820/7 1820/11 1820/14 LI [1] 1819/13 lies [2] 1831/12 1833/1 lieu [2] 1903/24 1904/10 life [3] 1824/25 1911/19 1924/13 lights [1] 1942/9 like [60] 1824/16 1824/20 1838/18 1838/25 1839/13 1843/15 1843/19 1843/22 1849/5 1850/9 1857/20 1862/23 1863/7 1865/4 1868/3 1869/16 1875/5 1880/3 1881/12 1894/24 1897/18 1899/22 1900/3 1900/6 1900/11 1900/13 1900/16 1900/16 1902/1 1902/22 1904/15 1904/22 1905/16 1906/20 1910/16 1912/4 1913/6 1913/21 1917/19 1920/19 1923/2 1925/2 1925/7 1937/5 1939/11 1942/8 1942/9 1944/5 1944/13 1951/7 1953/6 1960/4 1961/3 1961/20 1964/10 1965/22 1967/17 1979/10 1985/14 1988/11 limited [1] 1957/11 limiting [1] 1970/24 Lindner [3] 1985/3 1985/4 1985/5 line [15] 1830/15 1830/24 1832/11 1836/10 1837/19 1857/12 1893/17 1893/21 1902/24 1912/8 1927/2 1927/3 1931/9 1948/7 1985/10 lined [1] 1922/23 lines [7] 1852/5 1870/20 1895/17 1896/16 1901/1 1931/1 1977/5 link [2] 1865/15 1927/6 liquid [1] 1833/19 Liskow [1] 1818/18 list [19] 1913/15 1913/16 1913/21 1914/4 1914/6 1915/15 1915/23 1916/5 1916/9 1916/14 1916/21 1916/22 1917/18 1959/15 1972/2 1972/2 1973/14 1974/5 1992/22 listed [3] 1970/3 1973/18 1996/17 lists [1] 1917/20 litigation [2] 1818/3 1907/5 little [26] 1837/8 1838/20 1847/18 1851/17 1854/6 1856/19 1858/15 1863/14 1864/18 1870/10 1871/6 1884/13 1887/3 1905/16 1914/23 1924/17 1925/19 1929/23 1931/2 1934/11 1935/1 1941/11 1958/12 1958/14 1989/5 1989/7 lived [1] 1937/14 LLC [13] 1815/19 1815/22 1816/2 1816/18 1818/15 1819/5 1819/6 1819/9 1819/12 1819/16 1819/20 1819/22 1820/14 LLP [8] 1816/15 1817/2 1818/21 1819/2 1819/8 1819/12 1819/19 1820/2 LMRP [4] 1885/5 1926/13 1934/4 1935/2 loading [1] 1901/20 locate [1] 1912/6 located [2] 1831/2 1857/6
<b>L</b>		
lab [1] 1952/10 labeled [1] 1836/1 lack [6] 1827/22 1839/1 1839/21 1889/2 1889/11 1892/24 laed.uscourts.gov [1] 1820/20		

L	LWD [1] 1837/6	manned [1] 1942/2
<p>location [11] 1840/6 1898/7 1940/9 1940/24 1940/24 1941/21 1941/21 1941/23 1942/3 1942/3 1943/2</p> <p>locations [1] 1851/11</p> <p>lock [1] 1985/12</p> <p>lock-down [1] 1985/12</p> <p>lockdown [1] 1944/18</p> <p>locked [2] 1933/9 1933/10</p> <p>lodged [2] 1840/10 1990/13</p> <p>log [8] 1823/7 1823/9 1823/18 1824/8 1824/14 1827/20 1929/7 1932/7</p> <p>logger [21] 1830/8 1830/10 1831/7 1834/17 1834/23 1834/23 1836/15 1836/16 1836/18 1836/24 1837/9 1837/13 1839/11 1840/18 1840/20 1841/2 1841/4 1841/9 1859/8 1859/9 1861/9</p> <p>logger's [3] 1839/22 1858/23 1859/5</p> <p>loggers [6] 1858/16 1859/22 1860/7 1860/8 1932/6 1947/2</p> <p>logging [7] 1837/9 1838/8 1838/18 1838/23 1931/13 1931/18 1955/13</p> <p>logically [1] 1935/5</p> <p>logs [2] 1823/15 1932/8</p> <p>long [15] 1835/7 1835/10 1849/11 1850/9 1871/3 1884/14 1891/25 1919/18 1922/3 1922/5 1943/15 1952/6 1952/7 1953/9 1993/17</p> <p>long-standing [1] 1891/25</p> <p>longer [1] 1986/19</p> <p>look [47] 1826/1 1833/5 1833/15 1838/18 1838/25 1841/24 1842/3 1852/4 1854/13 1855/10 1859/12 1865/7 1866/3 1869/17 1869/19 1870/20 1873/12 1875/22 1875/24 1876/13 1877/9 1877/12 1878/5 1889/25 1908/13 1910/1 1910/2 1910/4 1913/21 1915/5 1917/20 1932/20 1933/11 1933/21 1935/1 1938/21 1946/17 1952/4 1952/10 1952/12 1954/17 1955/23 1956/18 1960/1 1977/19 1984/8 1989/1</p> <p>looked [9] 1850/4 1852/7 1859/13 1875/10 1878/4 1886/22 1895/5 1901/15 1930/15</p> <p>looking [10] 1835/2 1836/6 1855/14 1857/15 1859/1 1860/14 1874/4 1908/19 1938/17 1975/15</p> <p>looks [1] 1925/7</p> <p>loop [3] 1840/20 1840/23 1840/24</p> <p>Los [1] 1819/14</p> <p>lose [1] 1966/11</p> <p>loss [1] 1902/1</p> <p>lost [4] 1848/8 1863/17 1892/5 1990/21</p> <p>lot [25] 1836/9 1855/2 1855/13 1855/20 1878/4 1890/23 1890/23 1892/17 1898/24 1904/3 1904/18 1906/10 1921/23 1922/10 1938/11 1938/12 1944/1 1949/23 1961/8 1962/4 1962/22 1966/6 1969/3 1988/15 1995/25</p> <p>loud [1] 1958/8</p> <p>LOUISIANA [27] 1815/2 1815/6 1815/21 1815/24 1816/7 1816/13 1816/20 1816/23 1817/4 1817/10 1818/11 1818/12 1818/13 1818/15 1818/17 1818/20 1819/7 1819/18 1819/24 1820/16 1820/19 1913/5 1954/1 1954/6 1976/6 1980/1 1997/19</p> <p>low [1] 1958/8</p> <p>lower [5] 1838/22 1846/6 1882/8 1926/13 1928/1</p> <p>lowered [1] 1926/13</p> <p>LSU [1] 1918/23</p> <p>lucky [1] 1968/7</p> <p>LUIS [1] 1819/13</p> <p>LUTHER [1] 1818/8</p>	<p><b>M</b></p> <p>M-I [5] 1820/14 1829/5 1887/14 1887/15 1985/5</p> <p>M-I SWACO [1] 1939/11</p> <p>ma'am [74] 1958/18 1958/22 1959/10 1959/22 1962/21 1963/17 1964/2 1964/9 1965/5 1965/7 1965/13 1965/18 1966/4 1966/17 1966/23 1971/6 1971/23 1972/13 1972/22 1973/16 1974/10 1974/20 1975/12 1975/14 1976/19 1977/2 1977/13 1977/16 1979/2 1979/8 1979/15 1979/18 1979/23 1980/4 1980/11 1980/25 1981/7 1981/21 1982/7 1982/11 1983/11 1983/16 1985/2 1985/16 1986/1 1986/11 1986/15 1987/2 1987/9 1987/14 1987/18 1988/8 1989/5 1989/13 1989/15 1989/20 1990/1 1990/17 1990/25 1991/6 1991/15 1992/3 1993/2 1993/6 1993/9 1993/22 1994/7 1995/10 1995/15 1995/20 1996/5 1996/7 1996/19 1997/4</p> <p>machinery [1] 1939/21</p> <p>Macondo [27] 1828/12 1850/18 1850/23 1864/9 1865/3 1872/8 1892/22 1901/10 1906/6 1921/2 1941/23 1954/7 1954/20 1969/10 1976/25 1977/4 1977/9 1978/7 1979/20 1982/6 1982/9 1982/11 1982/17 1988/23 1989/17 1990/19 1991/12</p> <p>made [12] 1846/23 1873/10 1875/5 1890/11 1895/4 1898/8 1898/18 1914/18 1920/23 1929/10 1966/11 1994/5</p> <p>Magazine [1] 1817/9</p> <p>Mahtook [1] 1819/16</p> <p>mail [27] 1867/18 1888/16 1888/24 1889/14 1889/24 1890/1 1902/11 1905/9 1905/13 1922/25 1954/17 1954/18 1954/21 1955/23 1956/4 1957/5 1963/9 1965/3 1966/14 1967/3 1967/12 1968/11 1977/7 1980/8 1981/12 1984/21 1984/22</p> <p>mails [2] 1957/5 1970/11</p> <p>main [6] 1817/3 1925/24 1932/18 1932/19 1937/15 1937/19</p> <p>maintain [2] 1830/24 1860/2</p> <p>maintained [1] 1826/22</p> <p>maintaining [2] 1889/7 1940/25</p> <p>maintenance [26] 1829/20 1852/3 1887/23 1887/23 1888/1 1888/7 1888/10 1889/2 1889/8 1889/12 1890/14 1892/21 1905/7 1905/22 1906/1 1906/10 1939/19 1939/20 1939/20 1942/15 1984/14 1995/3 1995/6 1995/8 1995/13 1996/17</p> <p>major [4] 1833/13 1887/10 1900/7 1900/9</p> <p>majority [1] 1910/16</p> <p>make [39] 1827/1 1827/5 1829/11 1837/8 1846/24 1857/8 1869/9 1873/6 1873/15 1877/23 1884/15 1896/7 1897/2 1898/3 1902/5 1911/8 1913/25 1915/24 1921/15 1927/25 1929/24 1931/23 1946/17 1948/6 1951/2 1951/5 1952/1 1952/8 1971/19 1972/25 1981/4 1981/4 1981/23 1982/4 1984/8 1991/11 1992/23 1993/12 1994/1</p> <p>makes [2] 1868/5 1882/10</p> <p>making [8] 1827/18 1875/9 1894/24 1928/13 1928/21 1949/25 1996/16 1996/23</p> <p>malice [1] 1915/6</p> <p>MALINDA [1] 1817/24</p> <p>man [4] 1835/14 1922/10 1973/9 1995/23</p> <p>man's [2] 1932/13 1932/15</p> <p>management [3] 1842/8 1900/8 1900/9</p> <p>manager [5] 1842/13 1889/13 1966/20 1967/24 1977/12</p> <p>manhours [1] 1995/7</p>	<p>manner [3] 1832/17 1850/24 1921/16</p> <p>manual [16] 1826/8 1833/7 1833/12 1833/16 1851/5 1851/8 1851/10 1875/11 1880/11 1880/14 1880/17 1882/3 1882/23 1910/24 1989/20 1989/25</p> <p>manuals [7] 1851/11 1880/4 1880/9 1880/19 1880/21 1881/2 1881/14</p> <p>manufacturer [1] 1891/7</p> <p>many [17] 1825/18 1847/15 1880/21 1883/22 1889/3 1889/12 1901/4 1933/16 1946/15 1961/22 1964/3 1964/20 1970/18 1970/18 1977/23 1982/25 1995/7</p> <p>March [7] 1815/7 1822/2 1850/7 1850/7 1875/23 1876/17 1906/17</p> <p>marine [15] 1852/2 1898/5 1898/7 1898/11 1898/18 1926/13 1939/22 1940/1 1940/1 1940/4 1940/18 1941/1 1993/4 1994/14 1994/14</p> <p>mark [4] 1882/6 1913/17 1982/14 1982/15</p> <p>marked [1] 1882/6</p> <p>master [8] 1909/3 1909/4 1909/17 1909/19 1909/21 1911/8 1911/12 1941/4</p> <p>master's [2] 1910/14 1910/21</p> <p>material [2] 1847/17 1855/8</p> <p>materials [4] 1852/4 1922/22 1983/25 1984/1</p> <p>mates [2] 1941/4 1941/4</p> <p>matter [3] 1882/22 1949/2 1997/22</p> <p>MATTHEW [1] 1818/23</p> <p>maximum [1] 1877/16</p> <p>may [22] 1844/13 1864/1 1879/24 1887/4 1889/25 1893/13 1893/21 1903/14 1909/20 1914/17 1936/20 1938/20 1938/20 1949/19 1952/13 1952/14 1956/19 1957/1 1974/15 1974/25 1991/2 1994/4</p> <p>maybe [6] 1838/10 1848/22 1853/20 1915/3 1915/4 1938/2</p> <p>MAZE [1] 1818/8</p> <p>McCLELLAN [1] 1817/22</p> <p>McKinney [2] 1820/5</p> <p>md [2] 1815/4 1978/17</p> <p>md/tvd [1] 1978/17</p> <p>me [74] 1826/18 1828/21 1830/20 1832/18 1835/4 1836/16 1837/8 1840/11 1841/20 1844/20 1847/14 1847/18 1852/15 1854/17 1856/1 1858/11 1858/14 1860/16 1860/24 1862/24 1862/24 1864/7 1869/19 1870/17 1870/25 1871/18 1874/21 1875/16 1875/21 1877/3 1881/13 1882/5 1884/2 1884/6 1884/12 1888/21 1888/21 1889/15 1901/17 1905/4 1905/4 1907/12 1911/6 1914/3 1916/19 1924/14 1924/17 1929/12 1936/2 1938/20 1942/20 1943/16 1944/11 1949/18 1953/6 1953/18 1954/24 1956/2 1956/21 1958/9 1961/2 1961/13 1962/11 1964/12 1964/14 1969/11 1969/12 1973/21 1978/19 1980/18 1984/8 1990/21 1995/4 1996/4</p> <p>mean [19] 1823/17 1840/4 1846/2 1846/23 1862/21 1868/1 1869/17 1876/6 1894/18 1897/6 1897/19 1920/18 1929/23 1935/22 1944/4 1956/21 1962/13 1962/17 1991/22</p> <p>means [1] 1926/24</p> <p>meant [2] 1844/8 1844/9</p> <p>meantime [1] 1893/9</p> <p>measure [3] 1876/10 1936/16 1978/21</p> <p>measured [1] 1978/21</p> <p>measurement [1] 1876/9</p> <p>measures [2] 1853/6 1893/17</p> <p>mechanical [1] 1820/24</p> <p>meet [3] 1922/18 1962/15 1962/17</p> <p>meeting [19] 1822/18 1828/15 1828/15 1840/21 1840/25 1864/24 1865/5 1878/18</p>

M		
<p>meeting... [11] 1878/23 1879/8 1888/4 1969/18 1969/18 1970/14 1970/15 1973/20 1974/7 1974/16 1992/15</p> <p>meetings [21] 1828/16 1878/25 1879/11 1938/12 1938/14 1938/14 1938/15 1969/14 1970/3 1970/7 1970/12 1971/1 1971/5 1971/7 1971/14 1973/14 1973/17 1973/20 1974/5 1974/11 1994/9</p> <p>meets [1] 1953/10</p> <p>member [4] 1918/10 1965/12 1965/14 1967/13</p> <p>members [4] 1873/6 1881/7 1911/11 1984/25</p> <p>memory [4] 1839/7 1841/20 1870/15 1872/5</p> <p>memory's [1] 1823/4</p> <p>men [4] 1848/10 1935/19 1974/9 1974/9</p> <p>mention [3] 1967/3 1967/6 1967/9</p> <p>mentioned [12] 1825/23 1849/21 1858/14 1873/19 1878/17 1891/13 1894/4 1895/4 1903/20 1907/8 1909/5 1947/16</p> <p>mentioning [1] 1891/15</p> <p>mercifully [1] 1880/6</p> <p>merger [1] 1958/25</p> <p>message [1] 1865/14</p> <p>met [1] 1947/12</p> <p>method [2] 1899/3 1951/1</p> <p>MEXICO [9] 1815/5 1824/25 1828/2 1828/23 1829/10 1829/19 1847/23 1848/19 1940/22</p> <p>mic [1] 1958/7</p> <p>MICHAEL [3] 1817/12 1819/12 1914/12</p> <p>MICHELLE [1] 1817/23</p> <p>microphone [2] 1887/4 1918/17</p> <p>middle [2] 1925/11 1926/9</p> <p>might [5] 1847/14 1849/5 1849/6 1950/8 1993/25</p> <p>MIKAL [1] 1816/15</p> <p>MIKE [5] 1819/3 1847/11 1914/16 1916/3 1947/12</p> <p>MILES [2] 1822/12 1864/12</p> <p>milestone [2] 1965/19 1966/25</p> <p>MILLER [1] 1819/6</p> <p>mind [6] 1853/2 1874/13 1893/16 1909/25 1913/3 1962/10</p> <p>minimize [5] 1853/2 1853/10 1853/14 1859/16 1972/5</p> <p>minor [1] 1928/18</p> <p>minute [4] 1863/19 1912/20 1916/19 1976/10</p> <p>minutes [7] 1844/11 1866/4 1866/12 1866/23 1892/13 1923/2 1986/20</p> <p>missed [1] 1835/17</p> <p>missing [2] 1987/23 1988/5</p> <p>misstates [1] 1907/11</p> <p>mistake [1] 1915/7</p> <p>misunderstood [1] 1896/14</p> <p>mix [1] 1952/7</p> <p>Mobile [1] 1816/4</p> <p>mode [1] 1909/3</p> <p>module [1] 1875/1</p> <p>moment [7] 1846/17 1852/20 1854/17 1882/5 1906/22 1912/7 1923/4</p> <p>moments [1] 1906/25</p> <p>monitor [15] 1832/22 1833/23 1836/11 1836/13 1839/15 1858/24 1860/23 1866/4 1877/21 1931/13 1931/15 1938/19 1944/6 1944/7 1944/7</p> <p>monitored [3] 1858/16 1866/23 1944/4</p> <p>monitoring [8] 1833/1 1834/18 1858/20 1859/6 1866/11 1892/6 1943/23 1991/14</p> <p>monitors [3] 1931/4 1932/12 1938/5</p> <p>Montgomery [1] 1818/10</p>	<p>month [1] 1920/3</p> <p>months [1] 1889/9</p> <p>moon [5] 1926/2 1926/7 1926/11 1926/12 1926/16</p> <p>moored [3] 1897/13 1897/14 1923/22</p> <p>more [25] 1827/11 1837/8 1847/3 1852/6 1852/18 1853/17 1854/3 1858/15 1869/6 1871/2 1896/7 1896/23 1897/23 1903/11 1903/17 1921/8 1946/1 1949/20 1949/23 1951/1 1951/11 1961/9 1978/4 1981/24 1982/2</p> <p>Moreh [22] 1954/18 1954/19 1955/6 1955/17 1955/24 1956/9 1957/5 1957/21 1977/7 1979/25 1980/12 1980/22 1981/14 1982/6 1982/13 1983/2 1983/2 1983/9 1984/6 1984/21 1985/14 1985/25</p> <p>Morel's [1] 1956/13</p> <p>Morgan [1] 1820/14</p> <p>morning [25] 1822/18 1822/19 1823/9 1823/11 1824/8 1825/23 1828/14 1828/15 1834/13 1836/4 1842/19 1878/18 1913/23 1914/2 1914/2 1915/3 1915/9 1915/20 1916/1 1917/18 1917/22 1929/7 1955/17 1969/17 1970/14</p> <p>most [7] 1848/18 1915/12 1931/18 1938/24 1940/4 1944/17 1992/15</p> <p>mostly [1] 1938/7</p> <p>motor [1] 1928/10</p> <p>Mountain [1] 1964/6</p> <p>move [16] 1834/7 1870/11 1897/24 1898/1 1915/12 1923/25 1925/19 1941/10 1941/14 1960/18 1960/20 1960/22 1967/9 1967/12 1991/19 1991/20</p> <p>moved [1] 1887/4</p> <p>movement [2] 1837/21 1941/14</p> <p>moving [8] 1841/9 1873/2 1939/22 1941/8 1941/21 1942/2 1942/5 1997/6</p> <p>Mr [11] 1882/25 1916/13 1916/19 1917/1 1929/20 1960/13 1963/18 1965/6 1965/8 1985/4 1992/7</p> <p>Mr. [158] 1822/11 1822/16 1822/20 1825/22 1827/7 1829/14 1833/6 1833/17 1834/11 1835/22 1842/20 1844/1 1844/17 1844/17 1844/22 1845/9 1845/14 1847/2 1847/11 1861/6 1863/25 1864/4 1876/3 1880/3 1883/9 1884/17 1887/3 1887/19 1888/16 1889/8 1890/11 1890/12 1903/17 1905/5 1906/13 1907/1 1908/14 1909/15 1909/20 1910/23 1912/15 1912/16 1913/3 1913/11 1913/18 1914/3 1914/4 1914/9 1914/25 1915/2 1915/3 1915/14 1917/7 1917/17 1918/9 1918/16 1922/16 1922/19 1923/8 1925/14 1929/17 1930/20 1943/13 1943/15 1943/20 1943/24 1944/21 1944/21 1946/4 1946/4 1947/12 1947/14 1955/6 1955/17 1955/24 1956/9 1956/13 1957/21 1958/7 1958/12 1958/15 1959/14 1960/12 1960/17 1961/3 1961/13 1961/20 1961/20 1963/12 1963/18 1963/23 1964/3 1964/11 1964/18 1964/24 1964/25 1965/3 1965/4 1965/4 1965/4 1965/6 1965/14 1965/17 1966/1 1966/2 1966/14 1966/16 1966/21 1967/13 1968/2 1968/2 1968/10 1968/15 1968/15 1968/16 1970/2 1976/5 1977/7 1977/14 1977/21 1977/21 1977/23 1979/25 1980/12 1980/22 1981/14 1982/6 1982/13 1982/18 1982/20 1983/2 1983/2 1983/2 1983/3 1983/9 1984/2 1984/3 1984/3 1984/5 1984/21 1984/22 1984/23 1984/23 1984/23 1984/23 1984/23 1984/24 1985/3 1985/5 1985/14 1985/25 1990/16 1990/18 1991/10 1992/8 1994/9 1995/17 1996/21</p> <p>Mr. Anderson [2] 1844/17 1968/16</p> <p>Mr. Bertone [3] 1888/16 1889/8 1906/13</p>	<p>Mr. Bertone [1] 1890/12</p> <p>Mr. Bly [3] 1914/3 1914/4 1914/9</p> <p>Mr. Brock [3] 1863/25 1908/14 1977/21</p> <p>Mr. Canducci [1] 1967/13</p> <p>Mr. Cocales [3] 1965/3 1965/4 1984/23</p> <p>Mr. Conrad [1] 1958/15</p> <p>Mr. Curtis [3] 1844/17 1844/22 1845/14</p> <p>Mr. Ezell [33] 1822/11 1822/16 1833/6 1833/17 1834/11 1835/22 1845/9 1847/2 1847/11 1864/4 1876/3 1880/3 1884/17 1887/3 1887/19 1903/17 1907/1 1909/15 1909/20 1910/23 1912/15 1912/16 1913/18 1915/14 1917/17 1930/20 1943/15 1943/20 1943/24 1944/21 1968/15 1977/21 1977/23</p> <p>Mr. Ezell's [2] 1913/3 1913/11</p> <p>Mr. Godwin's [1] 1917/7</p> <p>Mr. Guide [10] 1963/23 1964/3 1964/11 1964/24 1965/14 1966/1 1984/23 1990/16 1990/18 1994/9</p> <p>Mr. Guide's [4] 1964/18 1964/25 1965/6 1968/2</p> <p>Mr. Hafle [5] 1982/18 1982/20 1983/2 1983/3 1984/23</p> <p>Mr. Harrell [3] 1929/17 1968/15 1977/14</p> <p>Mr. Johnson [5] 1890/11 1963/12 1963/18 1966/21 1995/17</p> <p>Mr. Joseph [1] 1861/6</p> <p>Mr. Kaluza [6] 1922/16 1922/19 1923/8 1946/4 1961/20 1984/23</p> <p>Mr. Lambert [1] 1984/23</p> <p>Mr. Leo [1] 1985/5</p> <p>Mr. Lindner [1] 1985/3</p> <p>Mr. Morel [18] 1955/6 1955/17 1955/24 1956/9 1957/21 1977/7 1979/25 1980/12 1980/22 1981/14 1982/6 1982/13 1983/2 1983/2 1983/9 1984/21 1985/14 1985/25</p> <p>Mr. Morel's [1] 1956/13</p> <p>Mr. Norman [1] 1992/8</p> <p>Mr. Randy [1] 1943/13</p> <p>Mr. Roberts [2] 1915/2 1960/17</p> <p>Mr. Sepulvado [13] 1918/9 1918/16 1944/21 1947/12 1958/7 1958/12 1959/14 1960/12 1961/3 1961/13 1970/2 1976/5 1991/10</p> <p>Mr. Sims [5] 1965/4 1965/4 1965/17 1966/2 1968/2</p> <p>Mr. Sterbcow [4] 1827/7 1829/14 1883/9 1914/25</p> <p>Mr. Sterbcow's [4] 1822/20 1825/22 1842/20 1844/1</p> <p>Mr. Steve [1] 1905/5</p> <p>Mr. Underhill [1] 1996/21</p> <p>Mr. Vidrine [4] 1946/4 1961/20 1968/10 1984/22</p> <p>Mr. Walz [1] 1984/24</p> <p>Mr. Williams [2] 1925/14 1947/14</p> <p>Mr. Williams' [1] 1915/3</p> <p>Mr. Wilson [4] 1984/2 1984/3 1984/3 1984/5</p> <p>Mr. Winslow [2] 1966/14 1966/16</p> <p>Ms [2] 1822/20 1915/10</p> <p>Ms. [13] 1825/5 1830/1 1830/14 1835/22 1836/4 1843/24 1860/17 1860/22 1896/4 1903/11 1908/7 1917/3 1997/7</p> <p>Ms. Clingman [8] 1825/5 1830/1 1830/14 1835/22 1836/4 1843/24 1903/11 1908/7</p> <p>Ms. Clingman's [1] 1896/4</p> <p>Ms. Karis [2] 1917/3 1997/7</p> <p>Ms. Kathleen [1] 1860/17</p> <p>Ms. Willis [1] 1860/22</p> <p>much [20] 1838/13 1868/5 1876/4 1876/10 1877/17 1882/8 1887/12 1926/8 1927/13 1934/6 1947/7 1949/2 1951/8 1951/9 1951/10 1953/23 1957/25 1961/10 1986/19 1988/15</p> <p>mud [77] 1825/23 1826/25 1827/20 1827/21</p>



**M**  
mud... [73] 1828/6 1829/13 1830/8 1830/10 1831/7 1833/25 1834/17 1834/22 1834/23 1836/15 1836/16 1836/17 1836/24 1837/9 1837/9 1837/13 1837/21 1838/8 1838/18 1838/23 1839/11 1839/22 1840/18 1840/20 1841/1 1841/4 1841/8 1841/9 1844/25 1845/6 1849/5 1858/16 1858/23 1859/5 1859/8 1859/9 1859/17 1859/22 1859/22 1859/22 1860/7 1860/8 1860/23 1861/9 1869/8 1873/7 1873/16 1877/17 1895/13 1895/16 1895/25 1918/25 1931/13 1931/18 1932/5 1946/11 1946/20 1947/2 1947/3 1947/4 1948/11 1948/13 1949/2 1950/1 1950/17 1950/18 1956/5 1973/10 1976/19 1978/14 1981/15 1985/5 1985/10  
mud's [1] 1946/13  
mud-gas [5] 1873/7 1873/16 1895/13 1895/16 1895/25  
multiple [8] 1825/17 1910/11 1930/7 1959/14 1995/2 1996/6 1996/6 1996/21  
multiplex [1] 1926/16  
Munger [1] 1819/12  
Murry [5] 1867/4 1867/12 1867/16 1968/3 1977/10  
must [1] 1943/22  
MUX [4] 1926/17 1926/18 1926/19 1926/23  
MWD [2] 1837/6 1932/8  
MWD-2s [1] 1932/8  
MWD/LWD [1] 1837/6  
my [47] 1823/1 1823/4 1823/10 1825/7 1828/17 1829/16 1834/25 1837/8 1841/20 1847/14 1847/16 1853/4 1858/22 1863/23 1869/15 1870/15 1871/11 1871/18 1872/5 1874/13 1879/22 1889/2 1891/3 1893/16 1895/22 1896/24 1897/21 1904/2 1904/9 1910/15 1910/19 1918/9 1924/24 1925/2 1937/21 1947/14 1948/16 1951/15 1959/1 1960/14 1965/10 1967/20 1985/22 1994/12 1994/15 1995/4 1997/20  
myself [2] 1946/20 1969/19

**N**  
nails [1] 1989/9  
name [5] 1910/10 1918/3 1918/9 1922/12 1992/5  
NATHANIEL [1] 1817/19  
Natural [1] 1817/16  
nature [1] 1904/23  
near [2] 1896/23 1897/13  
nearing [1] 1955/13  
necessarily [1] 1950/5  
necessary [3] 1827/8 1827/10 1859/15  
need [23] 1834/7 1838/16 1856/5 1857/22 1857/24 1869/13 1869/24 1910/23 1916/23 1917/23 1944/7 1944/7 1947/25 1953/20 1955/7 1956/5 1970/22 1981/14 1981/16 1983/25 1983/25 1984/1 1984/5  
needed [3] 1836/14 1931/25 1986/14  
needs [1] 1946/12  
negative [67] 1829/9 1831/16 1831/23 1832/3 1832/7 1842/25 1861/19 1861/23 1862/2 1862/10 1863/15 1864/24 1865/16 1865/23 1866/18 1866/21 1866/25 1867/3 1867/8 1868/3 1868/3 1868/11 1868/20 1868/22 1869/3 1869/11 1869/22 1870/1 1870/8 1893/4 1893/14 1893/19 1899/3 1899/6 1899/6 1902/10 1902/12 1902/13 1902/18 1902/20 1943/21 1944/2 1944/4 1944/5 1944/11 1945/17 1945/19 1945/23 1945/25 1946/1 1946/4 1946/14 1947/17 1948/23 1949/12 1950/25 1951/3 1952/25

1953/8 1953/21 1956/5 1956/10 1956/14 1956/23 1957/1 1981/15 1981/20  
never [25] 1835/17 1850/19 1860/25 1861/3 1890/19 1890/25 1891/3 1891/6 1891/18 1891/20 1892/1 1896/1 1903/1 1904/8 1924/4 1933/9 1933/10 1940/20 1940/23 1945/15 1946/10 1967/18 1982/21 1987/10 1993/14  
new [23] 1815/6 1815/24 1816/7 1816/13 1817/10 1818/17 1818/20 1819/7 1819/24 1820/19 1872/7 1875/18 1876/4 1876/5 1876/11 1876/23 1877/2 1877/5 1877/7 1893/19 1905/22 1929/15 1941/24  
news [2] 1852/14 1852/17  
next [25] 1822/7 1856/5 1862/3 1864/5 1864/19 1865/7 1865/22 1879/5 1890/2 1892/10 1897/14 1912/18 1913/1 1943/2 1958/3 1967/9 1970/21 1972/12 1974/17 1974/18 1983/9 1983/21 1983/23 1985/8 1990/12  
Nick [2] 1957/7 1983/17  
night [9] 1832/14 1846/23 1893/3 1893/12 1897/6 1902/17 1912/1 1968/17 1975/8  
Nile [1] 1941/23  
nine [5] 1823/14 1828/2 1838/10 1920/6 1931/10  
Ninth [1] 1816/22  
no [104] 1823/25 1824/5 1828/20 1829/22 1829/25 1830/9 1830/13 1831/7 1831/8 1831/10 1832/8 1835/16 1835/19 1836/23 1838/13 1838/16 1839/17 1842/2 1842/7 1844/20 1845/15 1850/13 1853/7 1858/13 1860/14 1860/24 1861/2 1861/15 1861/18 1863/3 1864/9 1866/3 1866/3 1868/15 1872/5 1877/3 1884/1 1885/8 1887/15 1888/7 1888/8 1888/8 1888/10 1890/11 1891/12 1892/17 1893/24 1894/1 1894/18 1894/24 1895/11 1897/6 1898/11 1898/17 1899/18 1900/20 1901/5 1901/7 1901/10 1901/12 1901/14 1902/8 1902/17 1902/24 1903/3 1903/6 1903/8 1906/21 1907/16 1907/16 1909/23 1915/6 1915/17 1917/5 1922/7 1922/10 1924/12 1928/19 1933/10 1935/9 1935/18 1937/15 1938/19 1945/10 1945/15 1945/16 1947/24 1953/25 1954/14 1962/20 1962/21 1967/3 1967/5 1967/8 1967/11 1969/2 1976/4 1979/23 1980/25 1981/21 1982/7 1986/7 1991/15 1997/4  
no-salt [2] 1901/5 1901/10  
nobody [5] 1890/4 1893/24 1895/15 1895/23 1942/7  
none [4] 1888/12 1902/22 1912/3 1914/10  
NONJURY [1] 1815/14  
Norfolk [1] 1819/20  
normal [3] 1864/15 1905/21 1906/24  
normally [6] 1947/24 1949/19 1957/17 1964/16 1976/14 1992/23  
Norman [2] 1992/7 1992/8  
North [4] 1818/12 1841/16 1842/5 1842/13  
North Sea [2] 1841/16 1842/5  
not [162] 1823/4 1823/6 1823/18 1823/19 1823/24 1827/20 1828/17 1829/6 1829/7 1829/9 1830/8 1830/17 1831/22 1832/15 1835/19 1836/23 1836/24 1837/3 1837/17 1842/2 1842/2 1842/21 1845/8 1846/8 1847/16 1848/7 1850/21 1851/5 1851/25 1852/15 1852/24 1853/20 1854/21 1855/11 1855/14 1856/4 1856/20 1856/24 1857/6 1857/22 1859/2 1860/12 1860/14 1860/24 1861/5 1861/15 1861/22 1862/14 1862/17 1862/21 1863/8 1863/10 1866/7 1868/12 1869/15 1870/1 1870/7 1871/17 1872/1 1872/16 1875/6 1875/6 1875/25 1877/3 1880/11 1880/14 1881/7 1881/8 1881/13

1882/20 1882/23 1883/7 1883/14 1883/25 1884/5 1885/14 1885/15 1886/1 1886/18 1886/20 1887/1 1887/9 1891/8 1891/12 1892/5 1893/22 1893/23 1895/1 1895/11 1895/17 1898/7 1898/19 1898/21 1900/17 1900/19 1900/20 1901/25 1902/20 1904/9 1904/22 1904/24 1904/25 1907/7 1908/4 1909/8 1911/12 1913/13 1915/4 1915/14 1915/17 1916/8 1916/14 1916/20 1916/23 1920/7 1923/14 1924/4 1925/25 1927/21 1929/22 1932/3 1933/14 1934/16 1935/10 1935/12 1935/20 1938/2 1938/16 1938/20 1940/9 1941/2 1941/9 1942/3 1942/4 1942/9 1948/9 1948/19 1950/5 1951/13 1951/16 1953/4 1956/10 1956/19 1956/25 1957/1 1960/4 1961/7 1973/18 1981/1 1981/19 1981/22 1985/10 1986/18 1987/20 1988/15 1990/7 1991/2 1993/16 1993/16 1993/25 1994/4 1996/25  
notation [2] 1990/7 1994/2  
note [4] 1867/20 1867/24 1957/6 1990/4  
notes [2] 1847/14 1864/23  
nothing [5] 1853/17 1854/3 1890/16 1894/13 1912/14  
nothing's [2] 1951/11 1981/4  
notified [1] 1878/1  
notify [1] 1859/9  
November [1] 1906/17  
now [108] 1823/14 1823/20 1824/12 1824/12 1825/5 1826/2 1826/17 1829/19 1830/1 1831/25 1832/9 1832/13 1834/17 1845/4 1849/21 1850/17 1851/12 1851/23 1854/6 1856/2 1856/11 1856/19 1860/15 1861/19 1863/14 1863/24 1865/7 1865/8 1865/9 1866/14 1866/14 1866/17 1867/18 1868/18 1869/1 1869/11 1870/10 1870/25 1871/1 1871/14 1872/7 1873/3 1874/18 1875/16 1876/20 1877/9 1878/11 1880/13 1881/13 1881/22 1882/3 1882/17 1883/8 1885/7 1885/13 1885/21 1886/18 1891/8 1891/15 1891/18 1894/14 1909/20 1910/23 1919/10 1919/15 1920/2 1923/8 1924/23 1925/2 1925/18 1925/24 1926/23 1927/20 1929/17 1930/11 1931/18 1932/1 1932/15 1932/20 1932/25 1935/7 1935/25 1936/1 1937/2 1937/17 1938/1 1938/22 1940/4 1940/20 1941/21 1943/5 1943/13 1945/17 1947/7 1967/13 1976/3 1976/25 1979/24 1981/9 1983/6 1984/18 1986/24 1987/7 1987/15 1989/14 1990/16 1994/23 1997/6  
number [6] 1849/8 1901/3 1901/9 1905/14 1908/15 1977/7  
numbered [1] 1997/22  
numbers [1] 1876/8  
NW [1] 1819/3

**O**  
O'Keefe [1] 1815/23  
O'ROURKE [1] 1817/17  
object [12] 1824/13 1827/22 1831/24 1831/25 1839/1 1844/14 1845/8 1853/19 1892/24 1896/4 1907/11 1910/25  
objection [15] 1824/11 1824/22 1839/21 1840/10 1845/11 1893/1 1896/3 1899/10 1908/2 1911/9 1911/15 1911/16 1917/5 1917/7 1917/8  
objections [7] 1913/8 1913/9 1913/19 1914/1 1914/5 1914/8 1915/25  
Objectives [1] 1854/11  
objects [1] 1901/21  
obligated [1] 1950/10  
obligation [2] 1858/24 1859/2  
obligations [1] 1852/19

<p><b>O</b></p> <p>observation [2] 1857/9 1859/16  observed [1] 1993/11  obtained [1] 1886/13  obviously [4] 1926/5 1930/20 1939/17 1997/10  occasion [2] 1883/25 1884/6  occasions [2] 1909/10 1930/7  occur [3] 1882/9 1882/11 1883/3  occurred [2] 1890/24 1902/23  occurrence [3] 1856/15 1856/21 1857/3  October [7] 1867/19 1867/21 1888/17 1890/10 1905/10 1906/14 1906/16  October 15th [1] 1867/21  October 19th [1] 1867/19  October 2009 [2] 1888/17 1905/10  October 30th [1] 1890/10  odd [3] 1828/3 1828/22 1845/21  off [32] 1838/16 1850/12 1855/7 1863/23 1864/16 1866/22 1869/12 1869/23 1871/11 1875/13 1875/22 1877/13 1884/9 1884/24 1884/25 1885/2 1886/14 1886/17 1889/18 1890/12 1905/17 1911/22 1919/23 1948/15 1949/6 1949/7 1951/4 1978/9 1988/16 1988/18 1990/10 1990/22  offer [4] 1913/11 1914/11 1915/12 1917/16  offered [2] 1889/23 1916/14  office [33] 1815/20 1817/19 1817/25 1818/13 1819/17 1851/9 1851/9 1910/14 1910/14 1910/14 1929/4 1929/8 1929/8 1932/13 1932/13 1932/14 1932/14 1932/14 1932/15 1932/15 1933/19 1933/19 1937/14 1937/21 1937/23 1937/23 1938/1 1938/3 1938/5 1992/6 1994/12 1994/12 1994/15  offices [1] 1904/16  Official [3] 1820/18 1997/17 1997/25  offshore [10] 1819/6 1819/9 1819/12 1819/16 1819/20 1920/13 1929/17 1956/1 1977/11 1980/17  often [2] 1892/14 1904/7  Oh [2] 1875/25 1958/4  oil [6] 1815/4 1815/4 1855/22 1868/6 1868/6 1964/19  oilfield [1] 1918/24  OIM [21] 1851/19 1852/5 1852/9 1852/11 1871/16 1871/17 1871/20 1872/20 1888/18 1909/4 1909/9 1909/11 1909/21 1929/17 1963/22 1969/12 1969/19 1977/11 1984/12 1992/14 1994/15  OIM's [3] 1851/9 1910/14 1932/14  OIMs [2] 1929/3 1974/8  okay [148] 1822/9 1825/5 1827/19 1834/7 1842/3 1850/1 1850/4 1851/15 1851/17 1852/1 1854/20 1854/21 1855/25 1857/14 1858/13 1860/21 1864/11 1864/21 1865/8 1865/14 1867/15 1869/1 1869/21 1871/2 1871/15 1872/2 1874/3 1874/16 1875/9 1876/23 1877/16 1878/11 1879/2 1879/23 1880/7 1880/8 1881/2 1881/18 1882/6 1882/22 1883/8 1883/18 1883/21 1884/2 1884/12 1885/4 1885/13 1885/21 1886/24 1887/12 1887/22 1887/24 1891/10 1894/13 1896/17 1896/22 1899/19 1899/24 1900/21 1903/5 1903/18 1908/10 1908/11 1908/21 1910/4 1911/4 1911/16 1913/22 1913/25 1914/14 1915/10 1915/22 1916/1 1916/25 1917/1 1917/10 1917/15 1917/23 1918/18 1919/14 1919/18 1920/4 1920/5 1920/9 1924/6 1924/17 1925/8 1925/17 1925/24 1926/5 1926/10 1926/20 1930/2 1931/15 1932/10 1932/20 1933/9 1933/13 1933/21 1934/19 1935/7 1937/11 1937/13 1938/9</p>	<p>1939/24 1940/12 1942/7 1943/17 1944/22 1946/4 1946/24 1954/21 1955/6 1955/12 1958/4 1958/24 1959/4 1959/11 1960/7 1960/9 1961/5 1961/10 1961/24 1964/7 1964/18 1966/13 1966/21 1967/16 1970/13 1971/14 1973/23 1974/18 1975/9 1979/9 1984/2 1984/15 1984/18 1986/24 1987/3 1987/7 1988/2 1988/17 1989/11 1991/21 1992/4 1993/7 1994/23 1997/12  old [1] 1857/20  Olson [1] 1819/12  on-duty [1] 1921/7  on-site [1] 1982/10  on-the-job [3] 1874/19 1874/25 1875/10  once [8] 1830/15 1878/12 1883/18 1946/18 1946/20 1949/7 1951/3 1965/22  one [102] 1823/20 1829/9 1829/11 1830/8 1831/18 1835/23 1845/24 1848/22 1852/6 1852/7 1852/14 1852/15 1854/21 1856/2 1856/5 1856/6 1864/20 1867/2 1867/5 1867/6 1867/8 1867/15 1867/16 1868/21 1868/25 1871/18 1874/1 1875/11 1875/21 1879/13 1879/17 1882/11 1882/17 1883/14 1890/2 1891/11 1895/2 1895/6 1896/7 1896/10 1898/2 1900/13 1901/13 1902/21 1904/25 1905/21 1907/1 1912/3 1916/8 1916/13 1917/16 1925/24 1929/3 1931/1 1931/11 1931/11 1931/21 1931/24 1931/25 1932/5 1933/7 1933/7 1933/18 1933/18 1933/19 1933/19 1942/22 1944/3 1944/20 1946/2 1946/3 1949/19 1951/1 1952/13 1957/1 1960/5 1960/5 1965/20 1966/25 1969/20 1969/20 1970/13 1972/11 1972/15 1973/12 1974/12 1974/18 1974/25 1974/25 1975/1 1975/1 1975/16 1975/25 1976/3 1978/4 1982/16 1983/21 1983/22 1990/21 1992/18 1994/11 1996/2  one-page [1] 1867/6  one-year [1] 1965/20  ones [4] 1899/12 1937/3 1974/15 1988/10  ongoing [2] 1849/19 1892/15  only [12] 1839/6 1845/8 1867/15 1891/2 1895/2 1900/7 1926/24 1930/6 1931/19 1940/9 1951/21 1960/14  ons [1] 1988/13  onshore [4] 1905/14 1954/8 1956/22 1971/4  operate [6] 1927/2 1928/19 1928/20 1934/9 1935/12 1935/21  operated [1] 1923/13  operates [2] 1933/7 1933/8  operating [2] 1894/5 1997/1  operation [4] 1829/23 1889/6 1894/11 1927/16  operational [4] 1868/4 1938/15 1973/22 1974/2  operations [37] 1837/16 1837/18 1839/12 1839/19 1840/9 1840/19 1841/10 1841/25 1849/2 1850/20 1851/1 1851/18 1852/2 1852/3 1861/4 1861/13 1879/5 1879/9 1879/15 1880/14 1901/20 1921/12 1928/18 1938/18 1940/18 1955/14 1956/1 1962/8 1967/23 1970/19 1970/20 1971/10 1971/22 1980/17 1983/20 1983/24 1986/5  opinion [4] 1824/12 1829/16 1889/2 1895/22  opportunity [11] 1823/22 1824/9 1828/3 1828/8 1828/24 1879/11 1879/14 1886/25 1914/17 1914/22 1971/9  opposed [2] 1961/19 1979/20  opposite [2] 1895/25 1955/1  ops [2] 1957/6 1957/21  optics [1] 1927/1  optimistic [1] 1997/10  Optimum [1] 1886/12</p>	<p>order [3] 1948/20 1950/22 1993/21  ordered [1] 1994/21  ordinary [1] 1862/2  organization [1] 1851/17  organizational [3] 1851/24 1908/13 1908/18  Orleans [10] 1815/6 1815/24 1816/7 1816/13 1817/10 1818/17 1818/20 1819/7 1819/24 1820/19  other [41] 1830/5 1835/2 1837/2 1849/6 1849/11 1858/25 1878/25 1881/7 1889/10 1891/10 1891/11 1894/11 1899/12 1901/13 1901/19 1906/20 1907/1 1917/20 1921/25 1931/15 1932/5 1936/19 1940/11 1941/23 1942/5 1944/13 1945/11 1950/8 1950/12 1952/1 1955/1 1960/1 1961/25 1965/3 1968/4 1977/22 1979/14 1979/21 1982/12 1986/13 1991/17  other's [1] 1964/16  others [6] 1856/22 1856/25 1895/3 1950/23 1961/8 1961/20  otherwise [3] 1829/9 1960/12 1964/13  ought [1] 1824/20  our [22] 1834/16 1855/21 1876/8 1876/8 1876/13 1889/15 1891/8 1906/25 1910/2 1912/6 1913/3 1915/23 1916/5 1916/7 1929/4 1929/7 1929/8 1938/5 1956/1 1985/7 1985/9 1992/6  ours [2] 1837/3 1837/4  ourselves [1] 1916/20  out [95] 1832/23 1838/15 1838/22 1854/13 1856/3 1856/22 1856/25 1857/14 1857/18 1862/1 1864/20 1865/25 1867/16 1868/7 1875/18 1876/13 1877/2 1877/9 1883/19 1888/16 1889/17 1890/25 1891/15 1894/12 1895/6 1897/15 1899/23 1916/5 1918/15 1918/25 1920/21 1920/24 1922/12 1922/23 1922/24 1923/8 1924/14 1924/15 1928/13 1928/16 1928/17 1929/4 1929/6 1929/9 1929/14 1931/9 1933/25 1934/3 1936/21 1938/14 1939/8 1945/18 1948/7 1950/11 1950/18 1952/8 1953/18 1956/18 1957/1 1957/8 1957/21 1959/18 1961/7 1962/15 1963/9 1968/21 1970/12 1974/15 1974/16 1976/13 1976/14 1977/17 1978/2 1978/6 1978/9 1981/3 1981/4 1981/6 1981/23 1984/12 1985/8 1987/10 1987/22 1988/4 1989/23 1990/2 1992/5 1992/12 1992/24 1993/25 1994/1 1994/4 1994/5 1996/13 1996/23  outline [1] 1847/15  outlined [1] 1855/14  outs [1] 1913/12  outside [3] 1910/12 1942/5 1948/2  over [34] 1831/25 1834/4 1835/25 1845/21 1847/17 1849/11 1852/2 1852/4 1854/15 1858/14 1879/5 1886/22 1887/20 1900/24 1909/21 1914/22 1920/18 1927/11 1931/21 1937/22 1945/22 1945/23 1956/21 1958/17 1959/20 1960/22 1963/19 1964/4 1966/19 1976/15 1982/16 1984/7 1992/21 1994/17  overall [1] 1891/1  overboard [4] 1873/7 1873/17 1895/17 1897/25  overdue [4] 1995/3 1995/5 1995/7 1995/12  overhaul [1] 1906/11  overhead [2] 1925/9 1930/11  overlapped [2] 1922/2 1955/1  overloaded [1] 1905/21  overly [1] 1997/10  overriding [4] 1909/4 1909/5 1909/16 1910/21  Overruled [1] 1839/24  overview [2] 1855/23 1918/13</p>
---	--	--

<b>O</b>	per [3] 1893/19 1913/14 1978/12 percent [9] 1915/4 1993/15 1993/16 1994/18 1994/20 1995/17 1995/19 1996/8 1996/10 perfect [4] 1955/24 1980/15 1980/23 1983/14	1816/5 1816/8 1816/12 1816/15 1816/18 1816/21 1817/2 1817/5 1817/8 1913/1 1918/10 1918/10
overwhelmed [1] 1896/1 own [3] 1838/14 1895/9 1953/14 owned [3] 1923/12 1923/13 1942/13	perform [4] 1868/5 1899/5 1952/25 1968/22 performance [4] 1824/19 1848/11 1889/4 1889/6 performance-induced [1] 1889/4 performed [10] 1824/10 1875/14 1877/13 1900/1 1947/16 1948/23 1949/11 1950/9 1950/22 1978/9 performer [1] 1889/5 performing [6] 1866/21 1868/2 1868/6 1869/11 1869/22 1968/8 perhaps [1] 1923/12 period [10] 1848/16 1849/11 1854/7 1865/19 1877/12 1878/14 1879/5 1924/10 1928/24 1929/21 periodic [2] 1904/14 1906/7 peripheral [1] 1836/13 peripheral-type [1] 1836/13 permanently [3] 1923/9 1923/22 1923/25 permission [3] 1857/22 1857/24 1872/14 person [7] 1852/9 1871/17 1908/25 1909/9 1909/13 1945/7 1971/12 personal [11] 1857/8 1892/23 1901/19 1901/24 1909/15 1962/5 1962/7 1962/12 1962/18 1970/24 1972/20 personally [3] 1883/10 1888/12 1994/11 personnel [8] 1831/9 1832/21 1834/15 1850/23 1861/22 1970/10 1971/8 1971/21 perspective [3] 1870/7 1987/4 1991/11 perturbed [1] 1905/16 PETITION [1] 1815/8 phenomenon [1] 1945/13 PHI [1] 1923/6 PHILLIP [1] 1819/23 phone [1] 1994/12 physical [2] 1840/3 1840/6 physically [1] 1894/16 PIC [4] 1852/11 1852/13 1909/3 1945/7 pick [7] 1857/5 1956/6 1970/13 1974/15 1974/24 1975/2 1981/16 picking [1] 1887/5 picture [5] 1838/22 1930/8 1930/12 1932/25 1933/21 piece [3] 1925/11 1926/8 1989/5 Pigman [1] 1819/22 pilot [2] 1900/3 1900/16 pinch [1] 1901/20 pipe [56] 1832/10 1866/6 1866/8 1872/4 1884/5 1884/23 1884/24 1885/5 1885/9 1885/11 1885/22 1885/24 1886/2 1886/3 1886/13 1886/16 1896/10 1898/7 1898/11 1898/12 1898/14 1902/24 1927/4 1927/17 1927/25 1928/1 1928/3 1928/10 1934/14 1934/15 1934/24 1934/25 1937/17 1947/24 1947/25 1947/25 1948/3 1949/5 1950/1 1951/5 1956/6 1957/17 1976/22 1976/22 1976/22 1981/16 1987/6 1987/21 1987/21 1987/22 1988/3 1988/4 1988/12 1989/7 1989/10 1990/22 pipes [1] 1895/7 piping [1] 1988/19 pit [8] 1833/24 1837/10 1858/20 1858/24 1899/13 1899/17 1899/20 1899/21 pits [4] 1837/22 1841/9 1859/23 1860/23 place [14] 1850/19 1879/1 1920/24 1923/22 1939/16 1939/16 1952/8 1952/9 1952/22 1970/7 1971/1 1974/22 1989/8 1993/19 places [4] 1830/5 1842/9 1910/11 1940/11 plaintiffs [15] 1815/18 1815/22 1816/2	plan [25] 1848/24 1879/3 1879/7 1925/9 1972/19 1976/6 1976/11 1976/12 1976/17 1977/20 1977/24 1978/3 1978/7 1979/11 1980/2 1980/23 1981/3 1981/19 1983/13 1983/13 1984/10 1985/7 1986/10 1995/12 1997/2 planned [2] 1885/8 1887/9 planner [7] 1957/8 1983/18 1983/19 1983/20 1984/7 1984/9 1984/11 planning [1] 1906/7 plans [6] 1954/8 1954/12 1955/3 1955/4 1957/7 1983/17 play [1] 1859/3 played [2] 1867/13 1914/12 PLC [3] 1818/20 1818/23 1819/4 please [51] 1822/6 1838/6 1840/1 1851/13 1854/9 1854/14 1859/12 1863/22 1864/20 1867/20 1875/24 1879/18 1879/24 1887/4 1915/21 1918/3 1918/14 1924/21 1930/4 1932/23 1934/21 1937/4 1937/6 1952/21 1956/2 1957/7 1958/8 1959/12 1959/17 1963/4 1963/10 1965/10 1967/20 1969/25 1972/12 1973/11 1973/24 1975/9 1975/22 1976/23 1978/2 1978/4 1980/18 1981/12 1983/7 1983/18 1984/19 1990/12 1993/7 1996/12 1996/13 plot [1] 1979/12 plug [3] 1957/15 1985/10 1985/11 plus [5] 1836/11 1837/4 1847/24 1970/11 1984/16 point [18] 1827/8 1827/11 1857/7 1863/8 1871/11 1873/15 1875/5 1875/9 1884/22 1889/17 1896/7 1897/21 1899/5 1905/21 1926/11 1978/16 1980/10 1981/18 pointing [2] 1890/4 1937/16 points [2] 1860/2 1901/20 poisonous [1] 1936/19 policy [5] 1832/3 1832/5 1845/21 1897/11 1935/24 pool [5] 1926/2 1926/7 1926/11 1926/12 1926/16 popped [2] 1912/7 1912/8 pore [4] 1873/24 1874/6 1977/21 1979/11 port [3] 1896/16 1897/7 1897/19 portion [1] 1830/2 position [8] 1834/17 1837/14 1839/16 1839/18 1840/3 1870/7 1898/12 1956/13 positions [2] 1852/6 1930/12 positive [5] 1936/18 1944/2 1957/19 1957/20 1957/22 positively [3] 1936/7 1936/12 1936/24 possibilities [1] 1950/9 possibility [1] 1874/8 possible [6] 1853/3 1856/8 1893/13 1913/15 1945/2 1961/10 possibly [4] 1835/12 1850/10 1862/22 1874/2 post [6] 1815/20 1817/19 1817/25 1818/13 1819/17 1907/5 post-incident [1] 1907/5 posted [3] 1910/2 1910/9 1910/13 potential [4] 1843/22 1882/21 1889/19 1936/24 potentially [1] 1941/19 pound [4] 1948/11 1956/5 1978/12 1981/15 pounds [2] 1948/14 1949/4 power [4] 1889/19 1927/7 1927/7 1941/12 Poydras [4] 1816/6 1818/19 1819/6 1820/19 ppg [1] 1978/10 practice [11] 1841/8 1841/11 1841/12 1876/4
<b>P</b>		
pace [1] 1954/12 package [1] 1926/13 packer [2] 1846/7 1846/9 packers [2] 1882/19 1883/3 page [11] 1821/2 1826/14 1865/25 1867/6 1874/23 1875/3 1888/24 1959/17 1972/12 1978/1 1979/4 pages [3] 1852/14 1959/15 1991/22 paint [1] 1940/15 painting [1] 1939/5 Palmtree [1] 1817/2 panel [15] 1830/3 1830/4 1830/6 1885/16 1885/18 1933/11 1933/13 1934/1 1935/8 1935/13 1936/1 1936/2 1936/2 1936/6 1936/23 panels [2] 1933/16 1936/14 paragraph [4] 1826/15 1833/15 1978/3 1978/8 parameters [2] 1837/2 1859/17 Pardon [1] 1830/20 part [21] 1837/2 1837/3 1855/8 1858/19 1859/3 1875/4 1875/17 1882/3 1895/12 1904/16 1912/3 1914/22 1939/19 1947/22 1951/24 1966/6 1968/10 1972/4 1982/1 1991/12 1993/18 partially [1] 1886/14 participate [3] 1974/13 1975/20 1976/3 participated [4] 1946/25 1959/16 1971/5 1973/3 participating [1] 1912/1 participation [1] 1974/16 particular [12] 1855/22 1860/7 1860/12 1871/15 1872/3 1892/18 1902/3 1923/22 1927/15 1927/15 1973/5 1994/8 parties [5] 1849/18 1916/10 1935/20 1969/20 1974/8 partner [2] 1848/19 1923/12 parts [6] 1929/12 1929/25 1930/1 1939/16 1994/21 1994/21 party [6] 1921/19 1932/13 1969/13 1969/23 1974/13 1984/12 pass [1] 1965/10 passed [2] 1922/19 1977/24 passes [1] 1968/3 passing [1] 1990/10 past [5] 1828/10 1868/19 1869/2 1950/14 1950/17 patchy [1] 1871/6 patience [1] 1879/21 patient [2] 1847/18 1858/11 pattern [1] 1931/20 PAUL [12] 1816/6 1882/1 1884/15 1884/20 1887/19 1888/17 1889/13 1889/23 1890/2 1905/14 1913/10 1966/24 pay [2] 1944/8 1944/10 paying [1] 1843/15 PC [3] 1816/9 1820/7 1820/11 PDQ [2] 1923/9 1923/20 peace [1] 1931/2 penetration [1] 1931/7 Pennsylvania [1] 1819/3 Pennzoil [2] 1919/3 1959/1 people [19] 1831/15 1849/6 1904/19 1905/14 1921/19 1921/22 1938/13 1938/24 1938/25 1939/6 1939/7 1939/8 1941/5 1969/13 1969/23 1971/15 1976/14 1983/24 1992/21		

<p><b>P</b></p> <p>practice... [7] 1886/24 1886/24 1949/10 1951/21 1952/1 1952/24 1986/8</p> <p>pre [4] 1840/21 1840/25 1864/23 1971/22</p> <p>pre-job [1] 1864/23</p> <p>pre-operations [1] 1971/22</p> <p>pre-tower [2] 1840/21 1840/25</p> <p>precise [1] 1837/8</p> <p>preparation [1] 1906/10</p> <p>prepare [1] 1900/12</p> <p>prepared [3] 1867/11 1902/1 1970/2</p> <p>presence [1] 1863/1</p> <p>present [1] 1991/4</p> <p>pressure [67] 1826/20 1829/13 1832/9 1833/25 1850/19 1862/10 1863/15 1864/25 1866/4 1866/6 1866/6 1866/11 1866/22 1866/23 1866/25 1867/3 1869/6 1869/12 1869/23 1870/3 1873/24 1874/6 1875/4 1875/16 1875/18 1877/4 1877/25 1889/17 1893/7 1899/23 1902/24 1902/24 1905/24 1927/7 1931/7 1934/18 1936/18 1943/21 1944/5 1944/11 1945/17 1945/19 1945/25 1946/1 1946/5 1947/17 1948/10 1948/14 1948/15 1948/23 1949/4 1949/6 1949/7 1949/12 1950/25 1951/4 1951/6 1951/9 1952/25 1956/10 1956/14 1956/23 1957/19 1957/20 1957/22 1977/22 1979/11</p> <p>pressured [1] 1936/7</p> <p>pressures [4] 1854/22 1877/16 1962/17 1962/17</p> <p>pressurized [3] 1936/8 1936/12 1936/24</p> <p>pretty [12] 1835/13 1889/16 1907/13 1926/8 1927/13 1934/6 1938/22 1950/14 1960/24 1964/12 1982/21 1993/17</p> <p>prevent [2] 1826/20 1882/10</p> <p>preventer [2] 1883/24 1884/4</p> <p>previous [2] 1987/20 1990/9</p> <p>previously [3] 1822/13 1884/24 1989/12</p> <p>primarily [5] 1830/7 1833/1 1833/3 1833/4 1878/10</p> <p>primary [10] 1824/10 1826/18 1826/22 1827/12 1827/14 1843/16 1853/18 1854/4 1854/5 1945/3</p> <p>principles [2] 1825/20 1881/3</p> <p>prior [19] 1828/22 1832/20 1838/13 1841/13 1842/1 1842/2 1842/5 1845/7 1846/9 1846/11 1863/4 1863/16 1884/24 1886/14 1902/17 1913/14 1982/6 1982/18 1987/15</p> <p>priority [1] 1995/8</p> <p>probably [7] 1838/10 1865/8 1911/25 1913/21 1922/24 1929/2 1939/3</p> <p>problem [20] 1832/18 1835/16 1844/13 1844/19 1844/24 1858/13 1862/5 1863/23 1884/1 1887/10 1890/13 1891/13 1891/14 1891/22 1891/25 1892/5 1893/3 1928/23 1960/14 1968/19</p> <p>problems [12] 1882/9 1892/20 1922/6 1922/8 1928/14 1960/17 1976/15 1987/16 1987/19 1988/20 1989/12 1990/14</p> <p>procedure [38] 1828/4 1828/11 1828/16 1828/19 1828/20 1829/3 1834/16 1855/2 1855/4 1855/7 1855/23 1862/9 1868/2 1868/5 1873/4 1886/2 1886/18 1886/21 1886/23 1902/11 1902/12 1902/14 1902/18 1945/20 1945/21 1948/18 1956/3 1956/9 1956/15 1956/16 1958/13 1972/9 1979/25 1980/19 1981/20 1985/6 1985/7 1985/13</p> <p>procedures [13] 1828/9 1828/10 1829/4 1855/13 1855/20 1881/3 1954/9 1954/12 1955/7 1956/17 1956/23 1957/9 1972/2</p> <p>proceed [3] 1847/7 1864/1 1953/1</p> <p>proceeding [1] 1862/3</p>	<p>proceedings [3] 1820/24 1997/14 1997/21</p> <p>process [21] 1827/18 1842/8 1845/16 1849/19 1865/2 1894/24 1946/24 1947/23 1948/19 1948/22 1950/21 1950/24 1951/24 1962/5 1962/7 1962/11 1962/14 1972/20 1982/13 1992/10 1996/1</p> <p>processes [1] 1948/17</p> <p>production [11] 1815/10 1818/19 1818/19 1818/22 1818/22 1819/3 1819/3 1923/19 1924/2 1951/25 1952/3</p> <p>profile [6] 1873/24 1873/25 1873/25 1874/6 1874/7 1874/7</p> <p>prognosis [2] 1873/21 1873/23</p> <p>program [6] 1873/20 1874/11 1974/17 1976/18 1977/9 1977/17</p> <p>programs [2] 1959/15 1961/16</p> <p>progress [3] 1994/5 1996/16 1996/22</p> <p>progressing [1] 1843/7</p> <p>progression [1] 1827/9</p> <p>project [1] 1964/6</p> <p>projects [2] 1964/23 1983/22</p> <p>promise [2] 1960/6 1991/23</p> <p>proper [2] 1889/2 1889/11</p> <p>properly [3] 1883/24 1893/14 1893/18</p> <p>protocol [3] 1864/15 1945/18 1946/5</p> <p>proud [5] 1848/11 1848/15 1848/17 1965/21 1968/7</p> <p>provide [7] 1826/19 1879/6 1915/15 1926/23 1935/16 1948/20 1979/10</p> <p>provided [7] 1828/9 1899/4 1959/20 1961/15 1976/7 1977/25 1983/14</p> <p>provides [1] 1956/9</p> <p>providing [1] 1848/20</p> <p>prudent [1] 1850/24</p> <p>PSC [2] 1913/11 1914/18</p> <p>PSC's [1] 1914/8</p> <p>psi [1] 1893/21</p> <p>publications [1] 1880/19</p> <p>pull [25] 1831/13 1835/20 1851/5 1851/13 1854/13 1864/7 1864/20 1888/14 1909/21 1930/3 1932/22 1937/4 1957/3 1959/11 1963/3 1969/24 1972/7 1973/24 1976/23 1984/18 1987/22 1988/4 1989/22 1992/9 1994/23</p> <p>pull-out [1] 1864/20</p> <p>pulled [1] 1838/22</p> <p>pump [7] 1877/21 1928/6 1931/7 1947/18 1947/25 1948/6 1976/21</p> <p>pump's [1] 1843/23</p> <p>pumpability [1] 1952/4</p> <p>pumped [3] 1869/8 1877/10 1952/3</p> <p>pumping [5] 1928/6 1946/16 1948/5 1952/8 1952/22</p> <p>pumps [7] 1857/5 1858/1 1858/4 1877/10 1877/20 1877/22 1928/7</p> <p>purge [4] 1838/14 1936/9 1936/12 1936/15</p> <p>purpose [8] 1833/11 1853/12 1858/20 1949/14 1971/14 1973/21 1973/21 1987/3</p> <p>push [2] 1831/13 1904/20</p> <p>pushed [1] 1871/17</p> <p>put [20] 1838/6 1846/25 1894/21 1900/2 1902/11 1902/11 1904/19 1925/3 1929/7 1931/11 1932/6 1943/16 1946/14 1950/15 1958/7 1963/8 1983/23 1984/10 1994/19 1994/19</p> <p>putting [1] 1847/13</p>	<p>1827/4 1827/15 1837/8 1840/8 1840/10 1840/13 1840/14 1856/24 1869/1 1870/21 1878/11 1902/10 1907/1 1908/1 1909/25 1950/21 1968/25</p> <p>questionings [1] 1914/19</p> <p>questions [45] 1842/20 1844/1 1847/3 1847/11 1847/15 1851/4 1852/15 1854/8 1856/12 1861/19 1862/13 1862/24 1872/7 1874/3 1879/12 1879/13 1879/22 1880/4 1880/5 1887/15 1903/3 1903/6 1903/8 1903/12 1903/17 1911/13 1917/14 1920/2 1922/8 1924/25 1930/6 1942/11 1942/11 1947/6 1947/16 1951/15 1953/24 1953/25 1956/2 1957/24 1971/9 1976/5 1976/8 1979/24 1980/18</p> <p>quick [4] 1910/4 1932/20 1935/25 1950/14</p> <p>quickly [10] 1835/22 1853/10 1856/8 1870/12 1880/5 1883/15 1883/23 1903/19 1908/13 1962/12</p> <p>Quip [6] 1989/14 1989/16 1989/19 1989/25 1990/5 1990/7</p> <p>quit [1] 1949/16</p> <p>quite [5] 1835/7 1852/6 1905/13 1918/17 1930/24</p> <p><b>R</b></p> <p>R-O-N-N-I-E [1] 1918/5</p> <p>RACHEL [3] 1817/18 1819/9 1915/11</p> <p>rack [1] 1937/17</p> <p>raft [1] 1911/19</p> <p>raised [3] 1888/7 1888/8 1926/13</p> <p>ram [16] 1846/3 1857/6 1882/19 1883/2 1898/12 1898/13 1898/21 1934/14 1934/15 1934/15 1934/17 1934/24 1934/25 1934/25 1934/25 1935/2</p> <p>rams [7] 1872/3 1884/24 1885/5 1885/23 1885/25 1886/3 1886/17</p> <p>ran [2] 1825/5 1927/16</p> <p>RANDAL [1] 1822/12</p> <p>randomly [1] 1993/14</p> <p>Randy [3] 1844/24 1864/12 1943/13</p> <p>rank [1] 1909/21</p> <p>rants [1] 1906/20</p> <p>rapid [3] 1881/15 1881/18 1881/20</p> <p>rare [1] 1838/11</p> <p>rate [2] 1833/24 1931/6</p> <p>rates [1] 1877/21</p> <p>rather [1] 1889/6</p> <p>re [3] 1815/4 1815/7 1873/7</p> <p>reach [3] 1856/22 1856/25 1953/18</p> <p>Reaching [1] 1965/19</p> <p>react [1] 1900/5</p> <p>read [16] 1854/17 1865/8 1895/9 1895/12 1915/15 1915/17 1955/15 1956/7 1957/12 1960/9 1974/15 1976/15 1990/2 1990/5 1990/12 1995/4</p> <p>reading [2] 1832/10 1832/11</p> <p>readouts [2] 1931/11 1931/14</p> <p>reads [1] 1833/19</p> <p>ready [2] 1865/14 1962/16</p> <p>real [5] 1839/7 1900/17 1908/13 1932/20 1935/25</p> <p>realize [1] 1884/13</p> <p>really [12] 1834/20 1838/16 1843/2 1856/24 1868/12 1898/22 1903/19 1924/24 1944/8 1944/17 1945/25 1961/3</p> <p>realtime [1] 1938/18</p> <p>reason [14] 1832/6 1853/9 1877/1 1886/20 1907/6 1920/9 1924/24 1936/5 1936/18 1950/12 1956/17 1982/8 1984/5 1994/1</p> <p>reasons [2] 1882/18 1968/25</p> <p>reboot [3] 1892/7 1892/11 1892/11</p> <p>recall [42] 1825/6 1828/19 1830/3 1830/4</p>
<p><b>Q</b></p> <p>qualifications [1] 1996/22</p> <p>quarter [1] 1912/5</p> <p>quarter-inch [1] 1912/5</p> <p>quarters [3] 1910/18 1910/19 1923/19</p> <p>question [20] 1822/20 1824/14 1825/22</p>		

<b>R</b>		
recall... [38] 1831/18 1838/24 1841/15 1842/1 1842/5 1842/22 1844/4 1862/15 1862/25 1867/15 1868/15 1869/5 1874/8 1878/16 1883/11 1884/8 1886/1 1888/13 1888/16 1889/8 1890/18 1891/5 1891/22 1891/25 1892/15 1893/9 1895/14 1896/25 1899/5 1899/12 1901/7 1907/18 1928/15 1976/7 1977/4 1977/23 1994/8 1995/9	remediation [1] 1823/22 remember [31] 1825/17 1834/5 1835/12 1838/12 1841/21 1849/23 1851/18 1851/20 1855/17 1863/3 1864/5 1871/14 1871/25 1871/25 1873/21 1874/3 1887/10 1888/23 1889/13 1889/15 1889/24 1890/5 1891/15 1891/24 1893/5 1893/6 1894/12 1900/25 1905/9 1907/23 1908/19	1833/9 1835/11 1837/16 1837/22 1839/11 1839/19 1840/19 1841/5 1849/8 1850/24 1851/1 1851/8 1851/24 1851/25 1852/10 1852/12 1856/23 1859/8 1860/20 1861/4 1861/14 1867/19 1867/21 1867/24 1871/23 1884/9 1885/1 1885/8 1887/23 1889/4 1889/11 1889/13 1890/8 1890/12 1890/13 1891/18 1892/1 1897/13 1897/14 1899/4 1900/17 1900/25 1901/19 1905/5 1906/16 1908/23 1908/23 1910/1 1910/3 1910/8 1910/9 1911/21 1912/4 1912/10 1912/13 1921/11 1921/18 1922/1 1922/4 1922/5 1922/22 1923/6 1923/7 1923/18 1925/7 1926/24 1927/8 1927/20 1927/23 1928/12 1928/24 1929/2 1929/4 1929/20 1931/22 1932/6 1932/11 1932/13 1933/18 1935/22 1937/5 1937/24 1938/13 1938/13 1939/5 1939/23 1940/9 1940/11 1942/8 1942/13 1943/16 1943/16 1945/7 1945/17 1952/24 1954/13 1954/22 1955/2 1961/7 1962/15 1962/25 1965/1 1966/20 1968/8 1969/9 1969/13 1969/18 1970/9 1970/22 1971/18 1971/21 1973/15 1974/22 1975/19 1976/13 1976/14 1980/9 1982/2 1982/2 1982/3 1984/4 1984/11 1984/13 1984/14 1985/15 1985/25 1986/3 1986/4 1986/9 1991/25 1992/12 1992/24 1994/16 1997/5
receive [3] 1855/12 1855/19 1874/11	remembered [1] 1905/10	rig's [1] 1992/15
received [6] 1961/20 1961/25 1962/6 1976/7 1981/19 1985/25	reminded [1] 1842/24	right [167] 1822/5 1822/22 1823/16 1827/5 1829/12 1829/15 1830/12 1830/16 1831/3 1832/19 1833/21 1835/8 1838/22 1839/8 1841/24 1842/4 1842/9 1843/8 1845/3 1845/7 1846/8 1847/5 1849/13 1850/8 1851/19 1852/4 1852/7 1852/18 1853/8 1853/21 1856/11 1857/23 1857/24 1858/2 1858/4 1859/12 1863/22 1863/25 1864/7 1865/10 1868/20 1871/8 1874/9 1874/18 1874/23 1874/25 1880/19 1881/11 1881/22 1882/6 1885/10 1888/13 1888/24 1890/22 1892/19 1894/2 1894/8 1895/4 1896/12 1896/20 1896/22 1898/1 1898/4 1898/16 1898/24 1899/16 1899/16 1901/2 1901/8 1902/15 1903/17 1904/6 1906/12 1907/19 1908/21 1910/12 1910/19 1911/19 1912/17 1912/20 1913/8 1916/11 1917/6 1919/12 1920/10 1920/14 1920/24 1921/8 1921/13 1921/21 1921/25 1923/21 1924/3 1925/4 1925/6 1925/9 1925/13 1925/21 1925/22 1926/8 1933/7 1934/7 1934/25 1935/4 1937/5 1937/9 1938/20 1941/15 1941/17 1943/3 1947/4 1947/7 1951/19 1953/17 1955/18 1958/1 1958/19 1959/23 1960/1 1960/7 1960/25 1962/3 1962/22 1963/2 1963/14 1963/18 1963/21 1965/6 1965/8 1968/1 1968/5 1968/13 1969/24 1971/1 1971/20 1972/15 1973/1 1973/17 1974/5 1974/7 1975/15 1976/5 1976/10 1977/17 1978/20 1978/24 1979/3 1980/5 1980/15 1981/5 1981/8 1982/8 1983/6 1983/12 1983/17 1983/24 1985/3 1985/6 1985/22 1987/12 1988/22 1993/10 1995/11 1995/16 1995/21 1996/20 1997/9
receives [1] 1873/24	reminder [1] 1971/18	right-hand [3] 1841/24 1842/4 1852/4
recertified [2] 1825/15 1891/7	remove [3] 1827/14 1827/21 1843/15	rigs [1] 1824/6
recess [6] 1863/19 1863/20 1912/21 1912/23 1997/9 1997/11	removing [1] 1827/12	rise [5] 1822/4 1863/21 1912/22 1912/24 1997/13
recognize [2] 1993/8 1995/3	repair [2] 1829/20 1891/1	riser [17] 1830/16 1864/25 1882/10 1894/15 1894/23 1926/12 1926/13 1926/18 1926/19 1926/19 1926/20 1927/4 1927/18 1950/16 1951/23 1972/16 1973/6
recognized [2] 1862/5 1945/1	repairs [1] 1890/20	risk [5] 1990/23 1990/25 1991/1 1991/5 1991/7
Recognizing [1] 1859/14	repetitive [2] 1834/6 1845/9	risks [1] 1928/20
recollection [11] 1823/1 1823/10 1847/22 1860/21 1867/8 1881/24 1882/25 1884/13 1888/19 1896/24 1907/17	replace [1] 1922/13	RMR [4] 1820/18 1997/17 1997/24 1997/24
recommend [2] 1989/20 1990/8	replacement [1] 1977/15	
recommendation [1] 1995/11	replies [1] 1955/24	
recommendations [1] 1993/12	reply [3] 1955/17 1956/4 1957/14	
recommended [6] 1886/1 1886/14 1886/18 1886/24 1891/7 1983/10	report [11] 1864/9 1864/11 1864/16 1864/21 1866/15 1876/17 1878/2 1884/17 1901/16 1992/25 1993/3	
record [14] 1847/13 1848/11 1848/15 1849/12 1858/20 1864/23 1877/21 1915/15 1915/18 1916/14 1918/4 1960/7 1962/22 1997/21	Reporter [3] 1820/18 1997/17 1997/25	
recordable [2] 1963/15 1965/20	reporting [2] 1852/5 1964/24	
recorded [1] 1820/24	reports [6] 1878/10 1901/18 1901/18 1902/6 1929/7 1975/13	
recording [1] 1859/17	represent [2] 1838/24 1918/10	
records [2] 1850/4 1878/4	request [1] 1929/10	
Redden [1] 1820/2	require [1] 1893/7	
redirect [4] 1887/16 1887/17 1903/13 1903/15	required [4] 1879/10 1956/1 1961/21 1980/17	
redo [1] 1961/23	requirement [3] 1841/3 1841/6 1875/12	
reducing [1] 1995/12	requires [3] 1834/14 1859/16 1920/12	
reference [5] 1970/14 1971/20 1995/2 1996/3 1996/8	rescue [1] 1912/10	
referenced [2] 1861/6 1993/8	reserve [1] 1960/23	
referring [5] 1828/13 1867/5 1878/9 1878/10 1957/16	reserved [1] 1916/4	
reflect [2] 1957/8 1983/18	Resources [1] 1817/16	
refresh [5] 1841/20 1870/15 1881/23 1882/24 1884/13	respect [10] 1862/10 1908/25 1909/5 1909/22 1911/7 1911/18 1913/11 1936/23 1986/12 1990/5	
REGAN [1] 1818/23	respond [4] 1844/7 1981/11 1981/14 1993/21	
regard [1] 1864/24	responded [4] 1832/16 1845/2 1883/15 1883/23	
regarding [11] 1861/1 1861/17 1892/19 1902/12 1914/8 1917/4 1969/9 1978/25 1979/10 1979/20 1986/25	responds [1] 1984/21	
regardless [2] 1941/5 1944/4	response [15] 1822/19 1825/22 1833/7 1833/12 1833/16 1842/19 1844/1 1880/16 1881/16 1881/18 1881/20 1890/1 1895/17 1943/9 1966/13	
regroup [1] 1973/2	responsibilities [4] 1834/18 1834/20 1858/19 1991/13	
regular [1] 1894/4	responsibility [8] 1831/11 1832/22 1833/1 1833/20 1833/22 1837/15 1856/7 1945/3	
regulatory [1] 1981/25	responsible [4] 1842/16 1942/15 1991/13 1995/16	
related [7] 1913/3 1917/7 1917/20 1961/25 1962/3 1962/8 1977/22	rest [3] 1946/22 1959/2 1973/14	
relates [1] 1874/19	restate [1] 1840/2	
relationship [2] 1964/10 1965/1	restrict [1] 1920/3	
relay [1] 1844/20	result [5] 1823/6 1882/7 1958/24 1990/13 1996/3	
release [1] 1897/15	results [3] 1877/24 1878/1 1941/18	
relevant [2] 1859/17 1986/5	retired [4] 1919/8 1919/10 1919/15 1919/15	
relied [1] 1836/9	reversed [1] 1868/7	
relief [1] 1977/16	review [3] 1828/8 1828/11 1914/17	
relieve [1] 1923/8	reviewed [2] 1828/10 1952/2	
relieved [1] 1923/1	reviews [1] 1854/19	
religiously [2] 1881/8 1971/2	revision [1] 1976/16	
relying [3] 1953/14 1953/15 1954/8	revison [1] 1985/8	
remains [1] 1886/17	reversion [1] 1985/8	
remediate [3] 1824/1 1824/4 1824/9	Richard [2] 1819/16 1992/5	
	Ridge [1] 1848/4	
	rig [143] 1815/4 1823/9 1823/11 1824/18 1825/3 1826/9 1828/17 1830/5 1832/21	

<b>R</b>	<p>1908/4 1908/6 1910/8 1911/22 1917/5 1924/6 1929/14 1935/15 1947/19 1948/18 1948/19 1950/7 1958/24 1968/2 1970/23 1974/2 1983/13 1990/16  salt [2] 1901/5 1901/10  same [17] 1834/7 1870/21 1874/13 1874/14 1911/9 1934/3 1934/6 1935/15 1937/13 1938/1 1938/3 1948/7 1955/24 1956/9 1961/21 1986/12 1992/21  San [2] 1816/17 1817/14  sand [1] 1837/24  sandblasting [1] 1939/5  Sannan [1] 1842/11  sat [1] 1895/23  satisfactorily [1] 1883/25  satisfied [1] 1996/22  saving [1] 1858/11  saw [15] 1836/14 1862/1 1862/9 1895/5 1895/20 1895/24 1904/4 1912/9 1927/11 1943/14 1946/10 1958/13 1980/2 1980/8 1987/10  say [49] 1824/5 1825/19 1826/10 1837/15 1840/23 1847/12 1856/24 1861/16 1863/10 1867/17 1868/2 1871/5 1871/9 1874/24 1883/17 1885/7 1886/16 1888/9 1892/11 1893/3 1894/14 1896/16 1896/18 1896/22 1897/18 1905/16 1905/17 1909/9 1917/14 1923/5 1924/14 1938/10 1941/23 1951/7 1953/8 1959/5 1964/8 1965/19 1967/17 1971/18 1972/18 1974/25 1980/3 1981/14 1987/24 1988/19 1993/19 1994/19 1996/15  saying [5] 1889/1 1893/6 1953/4 1965/25 1980/15  says [33] 1856/6 1856/13 1859/14 1864/12 1865/14 1865/15 1866/3 1866/8 1866/13 1870/24 1876/23 1882/7 1883/1 1884/22 1885/3 1886/10 1886/12 1937/8 1955/17 1966/24 1967/17 1968/6 1974/7 1978/8 1978/15 1980/9 1980/23 1983/17 1985/6 1990/2 1990/5 1990/7 1995/17  scenario [1] 1871/15  scenarios [1] 1900/11  schedule [2] 1850/11 1850/15  Schlumberger [1] 1823/11  school [6] 1825/9 1902/3 1904/16 1904/17 1922/20 1961/22  schools [2] 1826/2 1959/3  science [1] 1918/23  SCOFIELD [1] 1820/15  scope [3] 1837/1 1911/1 1911/3  SCOTT [1] 1817/17  screen [14] 1835/25 1836/7 1836/8 1836/18 1839/19 1881/23 1891/13 1891/14 1891/18 1891/22 1924/24 1932/9 1938/3 1938/17  screens [1] 1932/7  screw [1] 1988/11  screws [3] 1928/2 1989/6 1989/7  sea [5] 1841/16 1842/5 1934/4 1939/15 1940/21  seal [4] 1887/1 1893/7 1893/8 1990/15  sealing [1] 1883/1  seamen [1] 1940/12  seated [3] 1822/6 1863/22 1912/25  seawater [9] 1826/25 1828/6 1843/1 1866/9 1951/24 1956/6 1972/16 1973/6 1981/15  second [7] 1829/14 1879/18 1888/21 1894/2 1941/4 1978/3 1978/8  secondary [1] 1830/7  secondly [1] 1881/15  seconds [1] 1885/17  Secrest [1] 1820/2  section [12] 1815/5 1817/16 1818/3 1833/17 1854/22 1855/1 1856/2 1856/12 1874/4</p>	<p>1979/6 1979/11 1991/3  sections [2] 1826/6 1874/5  securing [1] 1944/18  Sedco [1] 1841/16  see [111] 1822/7 1829/2 1833/17 1836/2 1836/6 1837/19 1839/14 1839/16 1847/14 1851/15 1852/5 1852/24 1853/5 1853/7 1854/10 1854/11 1854/15 1854/22 1854/23 1856/6 1856/9 1856/10 1856/17 1857/7 1857/9 1857/12 1857/19 1859/14 1859/18 1859/24 1860/3 1864/8 1864/23 1864/25 1865/10 1865/12 1865/16 1865/23 1865/24 1866/1 1866/4 1866/8 1866/14 1866/17 1866/24 1867/20 1868/7 1870/17 1871/7 1874/25 1875/3 1875/16 1876/13 1876/17 1876/21 1876/23 1876/24 1877/9 1877/13 1877/15 1877/18 1878/13 1882/4 1882/5 1882/13 1883/1 1883/4 1884/17 1884/22 1886/10 1899/1 1900/5 1908/24 1909/16 1910/13 1925/3 1925/10 1925/21 1930/12 1930/16 1930/18 1931/5 1931/7 1931/7 1931/13 1931/24 1931/25 1932/9 1933/3 1933/3 1937/3 1938/7 1952/13 1957/10 1961/9 1963/16 1965/8 1968/11 1971/12 1971/21 1972/9 1972/16 1974/9 1974/19 1976/16 1977/24 1978/8 1980/20 1983/13 1995/14 1995/19  seeing [5] 1830/4 1839/15 1842/1 1842/5 1938/7  seek [2] 1920/15 1920/15  seem [1] 1980/22  seemed [1] 1863/7  seen [5] 1828/19 1868/14 1874/1 1906/21 1930/7  sees [3] 1852/21 1856/14 1856/21  segment [1] 1940/17  seismic [1] 1979/10  seldom [1] 1956/25  selected [1] 1845/24  self [2] 1905/21 1906/24  send [11] 1956/17 1956/18 1956/19 1957/8 1970/11 1981/3 1981/23 1982/4 1984/9 1985/8 1992/24  sending [6] 1888/16 1905/13 1963/21 1980/22 1984/2 1984/6  sends [3] 1957/21 1976/13 1984/22  senior [14] 1825/2 1840/16 1851/19 1859/4 1861/16 1862/7 1865/20 1865/21 1872/8 1895/2 1943/17 1966/21 1982/16 1983/3  sense [2] 1839/10 1953/10  sensors [1] 1837/10  sent [13] 1865/14 1889/14 1889/22 1889/23 1905/15 1922/12 1922/25 1978/6 1979/25 1980/3 1984/12 1986/15 1987/8  sentence [1] 1990/12  separate [2] 1931/20 1962/10  separator [5] 1873/7 1873/16 1895/13 1895/16 1896/1  September [3] 1992/1 1993/4 1993/24  Sepulvado [19] 1867/4 1867/12 1912/19 1918/1 1918/5 1918/9 1918/16 1944/21 1946/1 1947/12 1958/7 1958/12 1959/14 1960/12 1961/3 1961/13 1970/2 1976/5 1991/10  sequence [3] 1845/16 1884/23 1885/7  series [3] 1900/4 1920/2 1947/15  serious [2] 1888/10 1889/11  serve [1] 1986/15  service [5] 1889/15 1890/25 1939/3 1986/13 1986/15  Services [2] 1820/7 1820/12  SESSION [2] 1815/14 1822/1  set [8] 1838/16 1911/13 1952/23 1978/19</p>
<b>S</b>	<p>S-E-P-U-L-V-A-D-O [1] 1918/6  s/Jodi [1] 1997/24  safe [11] 1841/8 1841/11 1841/12 1850/24 1851/2 1928/19 1962/25 1963/1 1970/18 1996/25 1997/5  safety [1] 1971/19  safety [37] 1848/7 1848/12 1861/4 1861/13 1864/24 1865/5 1888/4 1901/15 1901/19 1901/24 1936/15 1938/14 1944/12 1961/25 1962/3 1962/5 1962/5 1962/7 1962/7 1962/11 1962/12 1962/14 1962/19 1962/22 1970/16 1970/17 1970/23 1970/24 1970/25 1972/21 1973/22 1974/2 1974/7 1974/9 1974/9 1974/11 1975/13  safety-critical [1] 1944/12  safety-related [2] 1961/25 1962/3  said [52] 1822/20 1822/24 1826/3 1826/17 1830/19 1834/6 1834/14 1839/2 1840/9 1842/20 1844/1 1845/4 1848/22 1853/15 1862/17 1869/15 1869/18 1869/25 1872/1 1872/11 1888/4 1890/4 1890/8 1892/25 1895/23 1896/9 1896/13 1898/3 1899/18 1905/10 1907/13 1907/15 1907/16 1907/23</p>	

<p><b>S</b></p> <p>set... [4] 1985/9 1989/6 1989/6 1994/9</p> <p>sets [1] 1865/25</p> <p>setting [5] 1952/5 1957/15 1957/17 1978/15 1990/14</p> <p>seven [2] 1848/8 1850/1</p> <p>several [4] 1899/8 1909/10 1929/13 1964/7</p> <p>severe [2] 1882/19 1883/2</p> <p>shack [30] 1830/2 1830/8 1831/3 1834/15 1835/23 1836/18 1837/14 1838/8 1838/10 1838/12 1838/18 1838/23 1838/24 1839/23 1840/18 1859/10 1885/16 1900/18 1925/21 1930/8 1930/23 1932/21 1935/15 1936/11 1936/15 1936/21 1938/4 1938/17 1942/2 1942/5</p> <p>shallower [2] 1882/8 1985/11</p> <p>share [5] 1979/19 1985/15 1985/21 1985/24 1986/8</p> <p>shared [2] 1979/16 1984/11</p> <p>sharing [1] 1986/12</p> <p>SHARON [1] 1817/24</p> <p>Shaw [1] 1816/12</p> <p>she [8] 1852/21 1860/19 1860/25 1861/3 1876/5 1890/19 1903/11 1917/5</p> <p>shear [10] 1830/11 1872/3 1885/5 1886/25 1898/12 1898/12 1898/14 1898/21 1934/25 1935/1</p> <p>sheared [3] 1872/4 1885/9 1885/10</p> <p>shearing [3] 1886/10 1886/12 1886/15</p> <p>shift [4] 1883/8 1884/2 1955/2 1971/21</p> <p>shine [1] 1857/18</p> <p>ship [1] 1929/15</p> <p>shipyard [7] 1890/20 1890/21 1891/4 1903/21 1904/5 1940/21 1940/23</p> <p>shoe [1] 1875/23</p> <p>shoes [1] 1846/25</p> <p>shoot [1] 1875/19</p> <p>shooting [2] 1844/25 1845/6</p> <p>shore [2] 1823/2 1932/2</p> <p>short [1] 1882/17</p> <p>short-circuit [1] 1882/17</p> <p>shorter [1] 1947/14</p> <p>shortly [2] 1957/9 1977/18</p> <p>shot [1] 1995/4</p> <p>should [27] 1840/20 1843/9 1843/12 1853/1 1858/4 1882/11 1915/1 1918/18 1944/3 1944/10 1948/25 1949/7 1949/10 1949/16 1949/21 1949/23 1950/13 1950/14 1951/10 1957/10 1965/21 1967/10 1978/15 1980/3 1981/16 1988/6 1988/19</p> <p>shouldn't [4] 1853/4 1853/7 1949/7 1951/6</p> <p>show [11] 1841/20 1841/22 1850/4 1856/5 1857/11 1867/18 1869/17 1870/17 1876/7 1877/13 1937/2</p> <p>showed [4] 1835/22 1849/21 1849/22 1908/14</p> <p>shown [6] 1830/2 1851/17 1901/4 1905/9 1908/18 1990/9</p> <p>shows [3] 1838/17 1931/8 1977/24</p> <p>shut [26] 1830/11 1830/11 1831/13 1831/15 1843/23 1843/23 1845/2 1845/7 1845/14 1845/16 1845/18 1845/22 1845/22 1846/12 1846/20 1853/2 1853/9 1856/7 1856/14 1857/5 1858/1 1858/4 1883/15 1883/17 1948/11 1948/12</p> <p>shut-in [1] 1845/16</p> <p>SHUTLER [1] 1817/24</p> <p>shutting [5] 1843/19 1845/4 1852/19 1853/12 1881/20</p> <p>side [14] 1835/25 1852/2 1852/4 1866/19 1896/19 1896/25 1897/2 1897/8 1897/19 1907/9 1964/21 1969/18 1983/24 1985/1</p>	<p>sight [2] 1836/10 1837/19</p> <p>sights [1] 1873/14</p> <p>sign [1] 1864/16</p> <p>signed [2] 1864/11 1977/9</p> <p>significantly [2] 1892/2 1949/20</p> <p>signs [2] 1833/25 1859/15</p> <p>Simcox [5] 1820/18 1820/20 1997/17 1997/24 1997/24</p> <p>similar [4] 1838/21 1865/2 1900/8 1903/21</p> <p>Similarly [1] 1838/3</p> <p>simple [1] 1904/25</p> <p>simply [1] 1836/15</p> <p>Sims [7] 1965/4 1965/4 1965/6 1965/17 1966/2 1968/2 1984/17</p> <p>simulate [2] 1904/19 1905/1</p> <p>simulated [4] 1899/14 1899/15 1899/22 1900/2</p> <p>simulations [2] 1899/25 1900/1</p> <p>simulator [5] 1900/16 1900/16 1900/18 1904/15 1904/17</p> <p>simulators [1] 1904/15</p> <p>since [7] 1825/16 1835/11 1922/4 1924/13 1940/21 1953/4 1964/4</p> <p>SINCLAIR [1] 1818/9</p> <p>single [3] 1902/17 1902/21 1973/15</p> <p>sir [157] 1823/25 1827/16 1829/22 1829/25 1830/9 1833/18 1835/10 1835/19 1836/20 1836/23 1839/6 1839/25 1840/5 1842/2 1842/7 1847/6 1847/20 1847/24 1848/13 1849/25 1850/3 1850/9 1850/16 1850/25 1851/16 1851/22 1854/8 1854/12 1856/10 1859/25 1860/14 1860/19 1860/24 1861/2 1861/18 1862/16 1863/3 1864/10 1865/1 1865/6 1865/13 1865/17 1865/20 1865/21 1865/24 1866/2 1868/15 1868/16 1875/2 1876/22 1876/25 1877/11 1880/12 1880/18 1881/9 1881/12 1882/4 1882/13 1883/13 1884/1 1884/8 1886/4 1886/5 1887/6 1887/12 1891/12 1892/13 1892/17 1894/1 1900/20 1901/7 1901/12 1905/4 1915/11 1919/14 1919/17 1920/1 1920/11 1920/25 1921/9 1921/14 1922/17 1923/18 1924/9 1924/12 1924/16 1925/5 1925/23 1926/1 1926/15 1926/18 1926/22 1927/1 1927/9 1927/22 1928/25 1930/10 1930/14 1930/17 1930/19 1933/2 1933/10 1934/6 1934/12 1934/17 1935/3 1935/6 1935/9 1935/18 1935/24 1936/4 1936/8 1936/13 1936/22 1937/15 1937/25 1938/5 1938/12 1938/19 1939/18 1940/3 1940/13 1940/16 1940/19 1941/10 1941/17 1941/20 1942/1 1942/19 1942/22 1943/4 1943/12 1944/16 1944/20 1945/2 1945/10 1945/20 1945/23 1946/2 1947/1 1947/20 1947/24 1948/25 1949/13 1950/6 1951/3 1951/15 1952/19 1953/23 1954/5 1954/14 1954/23 1955/16 1956/8 1957/13 1957/20 1957/23</p> <p>sit [3] 1846/24 1863/1 1935/16</p> <p>site [43] 1832/6 1849/1 1850/18 1861/24 1864/16 1919/4 1919/6 1919/9 1919/12 1919/18 1920/13 1920/23 1921/4 1921/7 1921/10 1921/10 1921/25 1922/9 1922/12 1941/24 1943/24 1945/11 1948/21 1950/10 1950/23 1951/22 1952/24 1953/12 1958/17 1958/25 1959/2 1959/4 1961/15 1967/23 1969/8 1970/8 1974/8 1975/19 1982/10 1985/1 1987/5 1991/12 1996/20</p> <p>sitting [1] 1938/16</p> <p>situation [18] 1832/20 1832/23 1835/17 1852/24 1853/5 1858/8 1858/9 1882/19 1884/9 1894/14 1894/21 1897/1 1897/22 1898/17 1900/3 1902/23 1910/23 1911/7</p> <p>situations [4] 1883/14 1900/13 1902/1</p>	<p>1964/16</p> <p>six [6] 1883/9 1883/21 1889/9 1922/4 1938/5 1941/22</p> <p>size [2] 1904/4 1976/20</p> <p>skills [1] 1843/7</p> <p>skipped [1] 1914/21</p> <p>skipping [3] 1870/22 1870/25 1991/22</p> <p>sleeping [2] 1910/18 1910/19</p> <p>sleeve [1] 1985/12</p> <p>Slidell [1] 1816/23</p> <p>sliding [1] 1989/10</p> <p>slightly [1] 1936/7</p> <p>slips [1] 1901/21</p> <p>so [105] 1823/12 1823/15 1826/8 1827/11 1831/11 1834/7 1837/5 1837/8 1839/14 1842/7 1846/12 1847/12 1847/17 1850/1 1852/15 1857/1 1857/25 1858/12 1859/2 1864/7 1870/11 1871/20 1872/25 1873/1 1874/23 1876/10 1879/10 1880/21 1885/14 1885/14 1889/21 1889/21 1892/19 1898/11 1898/17 1906/5 1906/5 1907/3 1908/1 1908/15 1909/13 1911/13 1911/25 1914/5 1915/4 1916/5 1916/9 1916/16 1919/11 1920/23 1922/19 1925/2 1927/6 1928/6 1929/8 1929/25 1931/1 1931/8 1934/7 1937/22 1939/24 1944/18 1946/12 1946/23 1947/25 1948/1 1948/1 1949/4 1949/5 1952/5 1952/9 1952/23 1953/9 1955/6 1955/25 1956/9 1957/21 1959/4 1961/4 1961/9 1961/22 1962/20 1963/9 1964/7 1966/21 1967/10 1973/6 1975/15 1976/15 1977/17 1977/24 1978/24 1980/16 1981/17 1982/4 1985/22 1986/9 1987/22 1988/3 1994/4 1995/4 1996/3 1996/6 1996/15 1997/11</p> <p>software [1] 1820/24</p> <p>sole [2] 1858/23 1859/2</p> <p>solid [2] 1988/10 1988/12</p> <p>some [73] 1822/21 1823/14 1823/17 1823/22 1825/5 1825/7 1825/8 1828/3 1831/17 1831/22 1836/5 1845/21 1847/11 1855/14 1855/17 1855/21 1862/13 1863/7 1868/24 1869/8 1874/3 1876/7 1878/25 1879/6 1880/3 1880/4 1888/23 1889/23 1900/23 1906/13 1907/17 1914/18 1924/17 1924/23 1925/14 1928/5 1930/11 1940/7 1940/8 1950/11 1956/6 1957/1 1959/23 1960/1 1961/19 1961/22 1961/23 1961/23 1963/6 1963/7 1963/8 1963/21 1964/16 1965/3 1969/6 1969/22 1970/9 1971/24 1974/5 1976/5 1976/7 1977/19 1978/24 1979/24 1981/16 1983/21 1986/24 1990/21 1991/25 1992/21 1993/17 1994/1 1994/9</p> <p>somebody [12] 1834/10 1888/1 1897/24 1898/18 1900/17 1938/19 1953/5 1953/7 1953/18 1969/19 1994/13 1996/20</p> <p>someone [6] 1857/10 1857/18 1859/5 1859/9 1874/16 1956/13</p> <p>something [38] 1824/6 1824/20 1827/17 1832/18 1833/9 1837/20 1841/7 1842/20 1844/2 1857/16 1862/1 1862/23 1863/17 1863/24 1869/13 1869/16 1869/24 1870/4 1882/15 1889/23 1891/10 1893/22 1894/22 1900/16 1903/1 1920/19 1923/2 1938/20 1945/21 1948/14 1949/25 1950/9 1952/16 1957/2 1964/13 1964/14 1965/20 1981/5</p> <p>sometimes [10] 1939/4 1940/14 1942/4 1949/19 1953/10 1956/25 1969/22 1981/24 1984/8 1994/13</p> <p>somewhat [1] 1840/13</p> <p>somewhere [3] 1949/24 1960/18 1977/5</p> <p>soon [4] 1853/2 1906/12 1913/15 1945/2</p> <p>sorry [24] 1826/10 1842/17 1843/11 1850/14 1858/12 1863/18 1864/19 1875/25 1876/15</p>
---	---	--

<p><b>S</b></p> <p>sorry... [15] 1887/6 1899/19 1904/1 1914/21 1915/1 1917/25 1931/15 1944/21 1944/23 1960/18 1973/11 1973/12 1978/4 1985/20 1987/24</p> <p>sort [5] 1830/23 1831/22 1834/17 1836/5 1844/6</p> <p>sorts [2] 1841/10 1960/17</p> <p>sound [4] 1832/3 1832/5 1850/8 1874/9</p> <p>sounds [6] 1824/16 1824/20 1850/9 1873/14 1902/22 1917/19</p> <p>source [2] 1931/21 1936/25</p> <p>sources [1] 1878/9</p> <p>space [1] 1936/18</p> <p>spacer [3] 1893/10 1893/13 1893/20</p> <p>spades [2] 1991/10 1991/16</p> <p>speak [3] 1889/21 1895/3 1922/19</p> <p>speaking [1] 1837/6</p> <p>special [4] 1849/7 1849/7 1890/11 1906/7</p> <p>specialize [1] 1921/22</p> <p>specialty [1] 1849/16</p> <p>specific [4] 1894/8 1899/2 1946/22 1972/9</p> <p>specifically [6] 1837/2 1862/25 1882/4 1899/13 1908/22 1969/10</p> <p>specs [1] 1962/15</p> <p>speed [2] 1859/15 1923/3</p> <p>spelling [1] 1918/4</p> <p>spend [1] 1930/22</p> <p>spent [3] 1900/23 1924/13 1958/20</p> <p>Sperry [12] 1836/1 1837/2 1858/16 1858/23 1859/5 1860/8 1860/19 1876/7 1931/16 1931/23 1932/1 1939/13</p> <p>Sperry-Sun [9] 1836/1 1858/16 1858/23 1859/5 1860/8 1860/19 1931/23 1932/1 1939/13</p> <p>SPILL [1] 1815/4</p> <p>SPIRO [1] 1818/4</p> <p>spots [1] 1910/10</p> <p>spreadsheet [5] 1992/24 1993/8 1994/17 1995/5 1996/18</p> <p>spreadsheets [1] 1993/15</p> <p>spring [3] 1988/21 1989/3 1990/22</p> <p>spring-type [1] 1990/22</p> <p>springs [3] 1988/13 1988/14 1988/25</p> <p>SPS [1] 1906/7</p> <p>spud [1] 1941/24</p> <p>spud-in [1] 1941/24</p> <p>square [2] 1925/12 1926/8</p> <p>squeeze [2] 1824/4 1824/19</p> <p>stable [3] 1856/15 1856/22 1857/4</p> <p>stack [14] 1866/9 1868/19 1869/3 1926/25 1927/2 1935/4 1935/5 1948/4 1948/6 1948/12 1949/25 1950/14 1950/17 1951/12</p> <p>stacked [1] 1934/4</p> <p>stacks [1] 1990/11</p> <p>stage [1] 1882/12</p> <p>stairs [3] 1937/20 1937/21 1937/22</p> <p>stairways [1] 1901/21</p> <p>stand [3] 1927/25 1930/21 1978/11</p> <p>standardized [2] 1902/18 1945/18</p> <p>standing [1] 1891/25</p> <p>standpoint [2] 1868/4 1889/4</p> <p>stands [2] 1903/25 1923/20</p> <p>starboard [4] 1896/17 1896/19 1896/25 1897/2</p> <p>start [9] 1822/18 1852/21 1865/4 1880/9 1901/16 1902/6 1941/24 1951/10 1970/23</p> <p>started [4] 1885/2 1918/15 1918/25 1946/19</p> <p>starts [3] 1888/25 1950/17 1950/18</p> <p>state [8] 1818/7 1818/11 1818/15 1853/25 1893/18 1913/5 1918/3 1954/5</p> <p>stated [3] 1882/22 1912/4 1943/20</p>	<p>statement [4] 1833/21 1853/4 1867/10 1944/15</p> <p>statements [1] 1969/3</p> <p>STATES [12] 1815/1 1815/10 1815/15 1817/11 1817/15 1817/21 1818/2 1903/6 1947/8 1947/13 1960/11 1997/18</p> <p>static [2] 1835/24 1858/5</p> <p>station [8] 1818/5 1910/2 1910/5 1910/20 1910/24 1941/1 1941/10 1941/12</p> <p>station-keeping [1] 1941/1</p> <p>stationary [1] 1886/13</p> <p>status [2] 1845/25 1846/2</p> <p>stay [2] 1941/14 1941/25</p> <p>staying [1] 1889/6</p> <p>stays [1] 1942/18</p> <p>Steering [1] 1918/11</p> <p>stenography [1] 1820/24</p> <p>step [10] 1858/3 1860/16 1862/4 1866/3 1866/3 1946/10 1946/10 1946/14 1946/14 1976/10</p> <p>step-by-step [1] 1946/10</p> <p>Stephanie [3] 1916/21 1917/11 1917/23</p> <p>STEPHEN [1] 1815/23</p> <p>steps [4] 1865/25 1894/16 1900/5 1957/1</p> <p>Sterbcow [8] 1816/5 1816/6 1827/7 1829/14 1883/9 1887/19 1913/10 1914/25</p> <p>Sterbcow's [4] 1822/20 1825/22 1842/20 1844/1</p> <p>STERNBERG [1] 1820/12</p> <p>Steve [9] 1888/1 1889/15 1889/16 1905/5 1905/11 1905/17 1905/20 1906/21 1906/23</p> <p>STEVEN [2] 1817/17 1819/9</p> <p>Sticking [1] 1948/18</p> <p>still [5] 1823/10 1871/10 1911/15 1980/9 1985/9</p> <p>stipulate [1] 1960/11</p> <p>stipulated [1] 1996/21</p> <p>Stone [1] 1819/22</p> <p>stop [15] 1862/3 1862/6 1865/4 1869/6 1893/17 1952/22 1970/18 1973/2 1974/12 1974/12 1974/14 1974/17 1989/5 1989/7 1989/10</p> <p>STRANGE [1] 1818/8</p> <p>stream [1] 1938/7</p> <p>Street [19] 1815/20 1816/3 1816/6 1816/10 1816/13 1816/22 1817/3 1817/9 1818/12 1818/16 1818/19 1819/6 1819/10 1819/17 1819/23 1820/5 1820/9 1820/16 1820/19</p> <p>strength [2] 1952/2 1953/20</p> <p>stressed [1] 1889/17</p> <p>stressing [1] 1906/13</p> <p>stretch [2] 1951/14 1951/15</p> <p>strike [1] 1981/18</p> <p>string [4] 1886/10 1886/14 1957/17 1988/12</p> <p>stripping [2] 1846/7 1846/9</p> <p>strokes [6] 1946/15 1947/19 1948/1 1948/3 1948/4 1948/8</p> <p>stuck [5] 1898/20 1988/18 1990/24 1991/2 1991/3</p> <p>studied [1] 1928/20</p> <p>stuff [4] 1871/1 1939/21 1953/10 1981/25</p> <p>stump [1] 1928/1</p> <p>subcontractors [2] 1939/8 1971/8</p> <p>subject [5] 1884/2 1916/7 1963/15 1974/24 1977/8</p> <p>subjects [2] 1880/6 1883/8</p> <p>submit [2] 1913/15 1914/6</p> <p>submitted [2] 1916/9 1916/24</p> <p>subsea [8] 1891/8 1892/25 1933/19 1936/2 1936/14 1936/23 1990/8 1990/14</p> <p>substitute [1] 1920/23</p> <p>subsurface [2] 1936/1 1979/6</p> <p>success [1] 1870/8</p>	<p>successful [6] 1822/25 1861/23 1870/2 1948/23 1950/25 1951/3</p> <p>such [3] 1833/25 1899/4 1968/8</p> <p>sufficient [2] 1826/20 1978/16</p> <p>suggest [2] 1844/18 1845/6</p> <p>suggested [1] 1868/12</p> <p>suggestion [1] 1868/10</p> <p>suggestions [2] 1956/3 1980/18</p> <p>Suite [14] 1815/20 1816/6 1816/10 1816/16 1816/19 1818/19 1819/6 1819/10 1819/17 1819/20 1820/5 1820/9 1820/12 1820/16</p> <p>suits [1] 1991/17</p> <p>SULLIVAN [1] 1817/23</p> <p>summarize [1] 1968/14</p> <p>summary [2] 1978/3 1978/7</p> <p>Sun [9] 1836/1 1858/16 1858/23 1859/5 1860/8 1860/19 1931/23 1932/1 1939/13</p> <p>superintendent [1] 1963/19</p> <p>supervisor [3] 1888/1 1889/9 1905/7</p> <p>supervisors [1] 1872/17</p> <p>supervisory [2] 1855/11 1855/12</p> <p>supplied [1] 1931/16</p> <p>supplies [2] 1927/6 1927/7</p> <p>supply [1] 1897/13</p> <p>support [3] 1836/14 1889/24 1897/23</p> <p>suppose [2] 1823/23 1870/9</p> <p>supposed [4] 1823/12 1834/10 1847/12 1859/8</p> <p>sure [38] 1827/1 1827/5 1839/13 1841/12 1846/8 1851/25 1854/18 1857/21 1858/10 1859/2 1865/9 1866/7 1868/12 1869/15 1871/17 1874/8 1878/13 1883/20 1896/7 1897/2 1898/3 1902/5 1907/13 1913/25 1915/24 1921/15 1924/4 1946/17 1948/6 1952/1 1952/8 1961/9 1971/19 1972/25 1981/4 1981/23 1982/4 1991/11</p> <p>surface [4] 1833/24 1868/7 1957/15 1985/9</p> <p>surprised [2] 1981/18 1981/19</p> <p>surrounding [3] 1892/20 1901/18 1901/25</p> <p>survey [1] 1906/7</p> <p>survivor [1] 1895/18</p> <p>suspect [1] 1963/6</p> <p>suspected [2] 1844/19 1856/8</p> <p>suspicion [1] 1843/20</p> <p>sustain [7] 1824/22 1845/11 1893/1 1896/5 1899/9 1911/15 1911/16</p> <p>Sustained [5] 1827/24 1832/1 1844/15 1911/10 1911/10</p> <p>Sutherland [1] 1819/8</p> <p>SWACO [1] 1939/11</p> <p>swam [1] 1912/10</p> <p>swap [2] 1892/6 1929/14</p> <p>swear [1] 1917/23</p> <p>switch [2] 1891/16 1891/23</p> <p>Switching [1] 1861/19</p> <p>swivel [2] 1928/2 1988/11</p> <p>sworn [2] 1822/13 1918/2</p> <p>sync [1] 1914/23</p> <p>synthetic [1] 1949/2</p> <p>system [22] 1830/16 1830/18 1830/19 1830/20 1833/24 1838/14 1872/9 1872/15 1892/11 1894/6 1902/8 1905/22 1906/1 1933/8 1935/17 1936/9 1936/12 1974/12 1995/24 1995/25 1996/2 1996/2</p> <p>systems [1] 1936/15</p> <p><b>T</b></p> <p>table [17] 1836/10 1839/16 1857/15 1925/9 1925/11 1927/11 1927/17 1928/1 1928/12 1928/14 1928/22 1929/5 1929/9 1929/15 1929/22 1960/22 1971/11</p> <p>take [29] 1845/17 1860/16 1863/19 1878/25 1880/20 1881/10 1881/13 1882/15 1888/22</p>
--	---	--



<p><b>T</b></p> <p>take... [20] 1893/17 1894/16 1910/4 1912/20 1913/18 1915/25 1917/19 1920/24 1933/11 1933/11 1934/20 1938/24 1941/22 1952/6 1952/6 1952/7 1962/14 1971/1 1974/22 1987/1</p> <p>take-away [1] 1881/13</p> <p>taken [6] 1825/8 1826/2 1890/25 1926/6 1932/25 1993/20</p> <p>takes [3] 1852/1 1859/9 1965/21</p> <p>taking [3] 1822/11 1868/17 1918/11</p> <p>talk [19] 1841/1 1860/1 1865/5 1867/16 1881/18 1894/2 1922/18 1924/17 1945/13 1956/21 1958/14 1964/13 1970/19 1970/20 1970/21 1974/16 1975/2 1975/3 1975/4</p> <p>talked [21] 1830/15 1831/16 1831/17 1832/13 1833/5 1836/4 1841/14 1854/6 1856/19 1863/14 1870/10 1873/2 1874/19 1875/11 1893/24 1898/2 1899/13 1917/4 1922/21 1974/14 1994/11</p> <p>talking [21] 1824/21 1830/14 1867/2 1868/22 1874/14 1881/19 1884/6 1889/14 1889/15 1900/19 1900/23 1905/10 1937/16 1941/4 1943/6 1947/21 1951/8 1951/16 1951/21 1955/3 1962/4</p> <p>talks [2] 1833/16 1859/20</p> <p>tamper [1] 1935/21</p> <p>tank [4] 1841/10 1950/15 1950/18 1950/19</p> <p>tanks [2] 1838/3 1940/7</p> <p>TANNER [1] 1820/15</p> <p>task [4] 1865/4 1944/17 1946/22 1972/9</p> <p>task-specific [1] 1946/22</p> <p>tasks [1] 1849/7</p> <p>taught [1] 1844/10</p> <p>team [21] 1849/14 1849/15 1909/24 1921/1 1921/18 1945/12 1963/24 1964/5 1964/22 1965/11 1965/12 1965/14 1967/14 1967/23 1968/6 1969/5 1969/5 1971/4 1984/25 1986/9 1997/2</p> <p>Teamwork [1] 1921/21</p> <p>technical [3] 1863/23 1942/11 1953/10</p> <p>teed [1] 1889/18</p> <p>tell [30] 1841/8 1841/10 1845/18 1884/6 1890/15 1895/18 1896/15 1901/3 1905/13 1914/3 1930/25 1937/10 1948/9 1949/18 1953/6 1954/24 1962/24 1966/5 1970/15 1971/24 1972/3 1974/11 1976/21 1982/15 1982/20 1987/3 1987/19 1992/17 1993/10 1993/13</p> <p>telling [3] 1861/20 1929/12 1978/19</p> <p>tells [4] 1938/20 1976/19 1983/20 1993/11</p> <p>temperature [4] 1873/25 1874/7 1977/22 1979/12</p> <p>temporary [5] 1951/24 1955/11 1956/14 1956/23 1979/24</p> <p>ten [3] 1865/25 1883/9 1883/22</p> <p>tend [1] 1882/8</p> <p>tension [5] 1885/23 1885/25 1886/2 1886/13 1886/17</p> <p>term [14] 1830/17 1862/17 1862/20 1862/25 1863/3 1863/5 1863/11 1891/20 1907/4 1907/8 1907/17 1945/9 1952/17 1953/2</p> <p>terminology [1] 1862/22</p> <p>terms [14] 1834/18 1839/11 1848/7 1848/11 1852/19 1862/14 1865/3 1876/3 1879/4 1879/4 1879/14 1881/19 1900/23 1901/15</p> <p>test [94] 1829/9 1831/16 1831/23 1832/4 1832/7 1843/1 1855/6 1855/7 1861/19 1861/23 1862/2 1862/11 1863/14 1863/15 1864/25 1865/16 1865/23 1866/6 1866/18 1866/21 1866/23 1866/25 1867/3 1867/9 1868/3 1868/5 1868/11 1868/20 1868/22</p>	<p>1869/3 1869/11 1869/22 1870/2 1870/8 1875/13 1875/13 1875/18 1875/22 1877/4 1877/5 1877/9 1877/14 1877/22 1893/4 1893/15 1893/16 1893/19 1899/6 1899/6 1902/10 1902/12 1902/13 1902/20 1934/15 1934/24 1943/21 1944/2 1944/2 1944/4 1944/5 1944/5 1944/6 1944/10 1944/11 1944/12 1944/13 1945/17 1945/19 1945/25 1946/1 1946/5 1946/14 1947/17 1948/24 1949/12 1950/25 1951/3 1952/2 1952/10 1952/25 1953/8 1953/21 1956/5 1956/10 1956/14 1957/14 1957/18 1957/19 1957/20 1957/22 1958/13 1978/9 1981/15 1981/20</p> <p>tested [1] 1894/23</p> <p>testified [7] 1822/13 1845/10 1887/25 1889/5 1918/2 1940/20 1943/13</p> <p>testifying [3] 1841/15 1842/19 1943/20</p> <p>testimony [13] 1824/12 1831/19 1834/6 1834/13 1847/21 1869/20 1870/17 1899/2 1907/11 1913/11 1913/13 1961/4 1961/8</p> <p>testing [3] 1854/16 1944/1 1952/4</p> <p>tests [17] 1826/6 1875/4 1875/17 1875/21 1877/20 1877/25 1899/3 1902/18 1944/3 1944/20 1945/23 1946/10 1947/16 1952/12 1952/15 1956/23 1957/2</p> <p>Texas [8] 1816/17 1817/7 1819/10 1819/21 1820/5 1820/10 1820/13 1820/17</p> <p>than [12] 1852/7 1853/17 1854/3 1882/8 1889/6 1894/11 1899/12 1923/17 1947/14 1949/20 1949/23 1951/11</p> <p>thank [37] 1822/10 1830/13 1847/2 1847/4 1853/8 1855/25 1868/16 1872/2 1879/20 1879/21 1887/12 1903/2 1912/15 1912/16 1914/15 1916/2 1916/3 1916/18 1917/2 1917/9 1917/11 1918/19 1919/14 1947/7 1950/20 1951/14 1953/22 1957/25 1958/5 1958/9 1960/13 1961/1 1961/11 1961/11 1965/22 1967/17 1986/22</p> <p>thanks [2] 1925/3 1938/9</p> <p>that [889]</p> <p>that's [147] 1823/2 1823/19 1823/24 1825/1 1825/4 1827/7 1830/16 1831/6 1833/9 1833/21 1835/25 1836/23 1841/3 1841/18 1844/24 1846/16 1846/18 1847/17 1848/9 1848/21 1849/3 1849/9 1853/21 1854/4 1854/21 1855/5 1855/21 1857/24 1858/22 1861/11 1862/12 1862/19 1864/14 1865/2 1865/6 1866/13 1867/7 1867/10 1868/16 1869/10 1870/9 1871/25 1872/2 1873/12 1874/8 1875/9 1875/25 1876/3 1877/7 1879/22 1880/18 1882/22 1883/6 1885/3 1885/12 1886/1 1886/18 1887/8 1887/13 1890/21 1893/22 1894/7 1894/12 1895/8 1895/22 1896/14 1896/25 1898/10 1898/16 1900/13 1901/9 1901/23 1902/8 1902/8 1902/15 1903/1 1904/3 1904/19 1905/8 1907/19 1915/8 1916/15 1920/8 1920/14 1920/22 1921/3 1921/6 1921/22 1922/15 1923/11 1923/12 1923/13 1923/19 1923/24 1925/23 1926/20 1927/1 1927/4 1932/4 1932/16 1933/9 1933/13 1933/15 1935/10 1935/11 1935/14 1935/24 1936/17 1936/24 1937/1 1937/11 1937/15 1940/6 1940/23 1941/3 1941/7 1941/17 1942/14 1942/25 1943/10 1943/11 1944/17 1944/22 1945/3 1945/5 1949/6 1950/25 1951/4 1952/9 1952/14 1953/7 1953/9 1953/22 1954/10 1955/9 1955/18 1956/12 1956/17 1961/17 1970/11 1971/3 1977/19 1978/19 1981/23 1983/5 1988/11 1991/23</p> <p>their [21] 1843/7 1844/3 1846/25 1848/11 1858/19 1859/2 1861/22 1861/24 1894/23 1895/24 1913/1 1914/9 1933/20 1939/3</p>	<p>1943/11 1963/8 1968/25 1989/20 1992/19 1992/25 1997/2</p> <p>them [48] 1843/5 1843/6 1862/2 1862/6 1862/10 1880/24 1880/25 1881/1 1894/23 1917/21 1919/1 1919/4 1919/7 1927/3 1929/13 1929/14 1931/5 1931/24 1931/25 1932/8 1944/3 1944/7 1944/8 1944/9 1946/17 1948/22 1950/24 1951/2 1953/19 1956/18 1956/18 1956/18 1959/2 1961/15 1961/22 1968/19 1968/22 1971/17 1974/16 1987/4 1988/11 1988/15 1989/21 1992/22 1992/24 1993/17 1994/18 1994/22</p> <p>then [90] 1828/15 1840/8 1843/23 1849/4 1849/23 1850/6 1851/19 1852/3 1854/13 1858/8 1859/20 1860/1 1865/15 1865/22 1866/11 1868/7 1869/8 1869/19 1870/17 1871/5 1871/9 1873/15 1877/4 1878/23 1878/25 1879/8 1880/5 1880/6 1886/16 1889/22 1891/15 1891/23 1892/7 1895/24 1896/22 1900/4 1902/11 1904/4 1905/20 1905/23 1906/16 1909/3 1911/6 1919/1 1919/3 1919/6 1923/1 1929/13 1935/2 1937/19 1938/20 1945/16 1946/21 1948/13 1948/15 1949/6 1949/23 1950/17 1951/6 1952/25 1956/4 1959/7 1959/8 1962/18 1968/1 1969/21 1970/4 1970/19 1972/23 1974/9 1974/18 1975/22 1975/25 1977/10 1978/3 1978/15 1983/6 1983/9 1983/14 1983/22 1983/23 1984/7 1985/15 1989/8 1993/12 1993/12 1993/20 1994/17 1995/16 1995/17</p> <p>theoretically [1] 1896/11</p> <p>there [163] 1822/20 1823/9 1823/10 1823/11 1824/18 1830/5 1830/8 1830/17 1831/22 1832/9 1832/19 1836/5 1837/1 1837/1 1837/5 1837/15 1839/5 1844/13 1849/2 1849/5 1849/6 1849/24 1850/5 1852/2 1855/1 1855/1 1855/23 1856/24 1857/3 1857/11 1857/18 1859/14 1861/9 1862/5 1865/25 1866/18 1867/3 1868/23 1872/5 1873/13 1874/2 1874/14 1875/15 1877/2 1877/10 1879/11 1880/22 1882/21 1883/22 1884/17 1885/8 1885/17 1885/20 1888/6 1888/7 1888/8 1888/10 1890/1 1890/11 1890/14 1891/22 1892/15 1893/9 1893/12 1893/20 1894/8 1894/10 1897/6 1898/17 1899/2 1899/4 1899/17 1900/1 1900/14 1906/10 1908/22 1909/25 1913/19 1914/18 1915/25 1920/21 1920/24 1921/4 1922/24 1924/14 1925/4 1925/6 1925/10 1925/13 1925/17 1925/21 1925/22 1926/8 1926/11 1928/14 1929/5 1930/22 1930/25 1931/1 1931/2 1931/8 1931/11 1931/12 1931/14 1933/3 1935/2 1936/5 1936/6 1937/6 1937/9 1939/9 1939/24 1940/1 1940/2 1940/8 1940/9 1942/4 1942/7 1943/5 1943/7 1946/16 1951/18 1951/19 1952/17 1954/11 1956/19 1957/16 1961/18 1962/20 1963/6 1963/6 1966/2 1967/3 1969/14 1969/22 1970/4 1970/14 1971/4 1971/8 1971/20 1973/17 1974/18 1977/18 1978/8 1979/6 1979/19 1981/11 1981/20 1983/1 1987/9 1988/6 1988/8 1990/4 1990/23 1990/25 1992/17 1992/18 1994/13 1994/24 1995/11 1995/17 1995/21 1996/12</p> <p>there's [30] 1827/4 1830/8 1835/25 1880/21 1885/15 1885/18 1889/25 1892/19 1894/22 1897/12 1897/14 1927/4 1930/11 1931/10 1936/18 1943/5 1960/20 1967/3 1969/3 1970/13 1971/20 1972/9 1974/7 1976/15 1986/24 1988/15 1990/4 1995/2 1995/5 1995/11</p> <p>thereabouts [1] 1971/2</p> <p>these [47] 1826/2 1828/3 1828/22 1843/2</p>
--	---	--

<p><b>T</b></p> <p>these... [43] 1848/18 1848/22 1848/23  1849/11 1852/14 1877/20 1880/19 1931/4  1931/11 1932/7 1936/15 1937/22 1955/3  1956/20 1957/11 1960/4 1965/4 1970/12  1970/13 1971/5 1971/7 1971/14 1971/24  1971/25 1973/3 1973/15 1975/16 1975/20  1981/2 1981/23 1981/25 1982/4 1983/24  1989/11 1990/9 1990/22 1992/11 1992/11  1992/16 1993/15 1994/10 1995/3 1996/1</p> <p>they [162] 1823/6 1823/10 1823/12 1829/4  1829/22 1829/25 1832/8 1834/25 1835/1  1835/2 1842/8 1843/3 1843/3 1843/9 1843/12  1843/17 1843/21 1843/25 1844/2 1844/9  1844/9 1844/18 1844/18 1844/20 1845/14  1845/18 1845/23 1845/24 1846/14 1848/17  1849/21 1859/3 1860/13 1861/24 1862/1  1862/5 1862/9 1862/12 1877/13 1877/13  1877/17 1879/4 1879/12 1880/15 1881/7  1881/8 1883/15 1883/17 1891/14 1893/16  1894/17 1894/19 1894/20 1894/23 1894/24  1897/3 1897/7 1898/14 1898/16 1898/20  1898/22 1898/22 1900/5 1900/10 1900/24  1904/14 1904/20 1909/23 1914/21 1915/14  1920/17 1924/4 1927/2 1927/3 1929/12  1929/12 1929/14 1929/14 1929/15 1929/25  1930/15 1930/16 1930/18 1931/12 1931/13  1931/22 1932/6 1936/3 1938/2 1938/3 1939/4  1939/4 1939/24 1940/6 1940/6 1940/7 1940/9  1940/10 1940/12 1940/14 1940/17 1941/10  1943/16 1946/5 1946/10 1948/23 1950/24  1956/17 1956/19 1961/21 1962/11 1966/5  1967/10 1968/23 1970/18 1971/8 1971/9  1971/12 1971/15 1971/19 1972/1 1972/4  1973/1 1974/2 1974/13 1974/15 1975/2  1975/13 1975/25 1976/15 1976/16 1986/9  1987/6 1987/11 1988/24 1989/17 1989/18  1989/20 1990/7 1990/13 1990/21 1991/2  1992/17 1992/19 1992/21 1992/22 1992/25  1993/11 1993/12 1993/12 1993/12 1993/13  1993/13 1993/17 1993/25 1994/1 1994/4  1994/21 1994/21 1995/24 1995/24 1995/25</p> <p>they'd [9] 1939/5 1942/5 1966/6 1969/21  1969/22 1993/14 1994/17 1994/19 1994/19</p> <p>they'll [1] 1992/23</p> <p>they're [16] 1827/20 1842/9 1842/9 1899/25  1900/4 1933/25 1934/3 1936/2 1939/8 1940/8  1944/3 1958/3 1991/3 1992/16 1992/17  1992/18</p> <p>they've [1] 1898/9</p> <p>thing [19] 1853/1 1857/25 1870/21 1874/13  1883/6 1883/7 1901/21 1915/25 1917/18  1917/21 1925/2 1931/1 1931/19 1932/5  1939/13 1939/21 1940/15 1948/7 1953/11</p> <p>things [24] 1834/7 1843/15 1843/19 1843/22  1844/6 1887/20 1904/18 1906/13 1921/23  1921/23 1924/25 1931/5 1931/10 1936/20  1938/11 1942/6 1942/9 1968/20 1970/11  1979/10 1982/4 1988/15 1992/22 1996/1</p> <p>think [72] 1822/19 1823/12 1825/22 1826/3  1826/17 1827/7 1829/13 1830/23 1831/17  1832/3 1832/8 1834/4 1834/13 1842/24  1843/2 1843/4 1846/22 1847/24 1848/22  1853/15 1862/21 1863/13 1870/21 1871/10  1881/10 1888/9 1889/23 1889/25 1894/4  1896/9 1896/13 1896/24 1899/9 1899/13  1900/7 1900/15 1901/16 1902/6 1904/25  1906/5 1906/5 1906/21 1908/8 1908/9 1911/2  1911/2 1913/20 1913/23 1915/6 1923/13  1929/13 1931/17 1931/19 1942/12 1946/22  1947/15 1955/23 1957/24 1960/23 1968/22  1971/22 1971/25 1972/1 1972/1 1972/5</p>	<p>1972/9 1972/11 1973/3 1973/8 1991/10  1992/5 1996/25</p> <p>thinking [2] 1840/1 1879/4</p> <p>thinks [1] 1915/3</p> <p>third [11] 1818/12 1921/19 1932/13 1935/20  1969/13 1969/20 1969/23 1974/8 1974/13  1981/12 1984/12</p> <p>third-parties [1] 1969/20</p> <p>third-party [5] 1921/19 1932/13 1969/13  1974/13 1984/12</p> <p>this [218]</p> <p>Thornhill [2] 1816/21 1816/22</p> <p>those [75] 1828/16 1828/25 1829/2 1841/10  1842/7 1844/10 1848/19 1850/17 1851/11  1851/21 1860/2 1874/13 1879/1 1879/11  1881/2 1881/5 1881/8 1881/14 1881/16  1883/14 1883/21 1892/22 1894/17 1899/1  1901/4 1901/17 1901/18 1902/6 1902/22  1904/13 1906/13 1913/9 1913/25 1914/2  1914/10 1914/14 1916/16 1917/8 1927/1  1930/16 1932/9 1932/12 1935/1 1941/5  1947/6 1948/4 1951/7 1951/7 1957/24  1958/19 1958/20 1962/10 1962/17 1968/21  1971/1 1972/11 1972/20 1973/20 1973/21  1974/5 1974/11 1975/11 1976/8 1977/5  1984/1 1984/25 1987/19 1988/14 1988/15  1988/19 1989/6 1990/23 1993/21 1994/6  1996/23</p> <p>though [5] 1824/21 1863/4 1892/8 1900/15  1957/1</p> <p>thought [11] 1830/19 1835/14 1846/14  1889/18 1895/6 1895/19 1912/8 1943/19  1964/12 1964/13 1986/4</p> <p>three [14] 1831/25 1850/17 1860/2 1880/19  1919/1 1919/2 1928/16 1928/17 1928/24  1929/5 1929/21 1949/17 1961/23 1980/4</p> <p>three-year [2] 1928/24 1929/21</p> <p>through [42] 1825/5 1827/8 1830/1 1842/8  1843/6 1847/14 1850/18 1850/20 1870/12  1870/20 1888/25 1892/3 1900/4 1921/1  1926/12 1926/16 1927/17 1928/4 1928/5  1928/5 1928/7 1930/16 1950/1 1953/14  1956/20 1959/3 1959/8 1959/14 1960/2  1960/4 1961/13 1961/22 1962/3 1962/24  1968/13 1970/6 1979/9 1981/2 1986/3  1990/10 1991/3 1993/15</p> <p>throughout [3] 1858/17 1919/24 1982/9</p> <p>Thunder [2] 1923/9 1923/16</p> <p>Tiano [1] 1888/17</p> <p>Tiber [1] 1848/1</p> <p>time [91] 1824/7 1824/7 1835/7 1835/9  1835/10 1835/13 1838/12 1842/13 1846/5  1847/25 1848/8 1848/16 1849/11 1850/9  1850/17 1858/11 1860/20 1865/19 1868/23  1871/3 1871/24 1873/11 1873/15 1877/12  1878/6 1878/14 1879/5 1884/14 1888/11  1888/11 1888/22 1890/18 1891/5 1892/9  1892/10 1892/21 1898/8 1899/5 1900/23  1900/25 1902/17 1905/25 1906/2 1906/7  1906/22 1907/5 1909/15 1920/3 1924/10  1927/16 1928/24 1929/14 1930/22 1930/24  1938/24 1943/6 1943/15 1950/19 1952/4  1952/5 1952/5 1952/9 1952/23 1954/22  1956/2 1956/6 1956/16 1956/24 1956/25  1958/16 1959/21 1959/21 1962/23 1966/11  1966/25 1970/4 1974/25 1974/25 1975/1  1975/7 1976/4 1977/15 1980/18 1981/16  1983/21 1986/3 1987/1 1987/12 1990/2  1992/23 1996/25</p> <p>times [21] 1825/17 1826/22 1827/10 1831/25  1834/10 1839/7 1850/22 1859/6 1879/13  1909/9 1921/5 1929/13 1942/18 1964/22  1968/20 1973/15 1983/22 1988/15 1994/11</p>	<p>1995/2 1996/6</p> <p>tired [1] 1944/23</p> <p>title [1] 1966/19</p> <p>today [19] 1847/21 1848/14 1849/21 1856/20  1859/13 1861/7 1862/13 1863/1 1865/3  1870/10 1873/2 1873/19 1917/5 1960/24  1961/4 1986/18 1991/25 1997/9 1997/11</p> <p>together [3] 1909/23 1921/20 1962/11</p> <p>told [15] 1827/7 1829/14 1832/18 1844/24  1867/15 1869/5 1869/11 1871/15 1871/18  1880/9 1885/13 1902/16 1905/4 1964/12  1990/21</p> <p>tolerances [1] 1882/8</p> <p>Tolles [1] 1819/12</p> <p>TOM [1] 1816/22</p> <p>tomorrow [8] 1913/23 1914/1 1914/23  1915/2 1915/20 1917/18 1961/5 1997/12</p> <p>too [15] 1849/9 1875/10 1876/8 1879/1  1899/9 1909/23 1939/3 1940/6 1940/11  1958/8 1958/8 1958/8 1958/8 1967/18 1968/4</p> <p>took [10] 1826/6 1850/19 1863/20 1892/13  1893/17 1902/22 1912/23 1930/21 1946/11  1970/7</p> <p>tool [3] 1857/6 1898/13 1898/20</p> <p>toolpusher [23] 1825/2 1825/2 1828/24  1840/16 1840/17 1851/19 1851/20 1859/4  1861/16 1862/7 1865/11 1865/18 1865/20  1865/21 1867/18 1867/20 1867/24 1872/8  1900/1 1943/17 1946/21 1973/9 1975/1</p> <p>toolpusher's [5] 1851/9 1873/8 1910/13  1932/14 1933/18</p> <p>toolpushers [11] 1862/9 1888/19 1895/2  1946/8 1946/17 1969/12 1969/19 1974/8  1984/12 1992/14 1994/15</p> <p>tools [5] 1823/9 1849/7 1876/10 1927/17  1970/21</p> <p>top [27] 1823/20 1859/14 1866/9 1889/5  1927/20 1927/23 1927/25 1928/1 1928/2  1928/3 1928/4 1928/8 1928/9 1928/12  1930/18 1933/25 1934/18 1934/23 1937/10  1937/11 1941/15 1941/15 1968/2 1979/13  1979/14 1988/14 1996/12</p> <p>top-drive [3] 1927/20 1927/23 1928/12</p> <p>topic [8] 1864/5 1868/18 1870/11 1874/21  1887/23 1970/4 1975/2 1997/6</p> <p>topics [4] 1870/11 1875/12 1898/2 1975/6</p> <p>torn [1] 1990/10</p> <p>torque [2] 1928/3 1931/6</p> <p>Torts [2] 1817/12 1817/22</p> <p>total [1] 1938/25</p> <p>totaling [1] 1995/7</p> <p>totally [1] 1836/8</p> <p>totals [1] 1858/20</p> <p>touch [1] 1935/7</p> <p>touched [1] 1947/15</p> <p>tough [2] 1846/25 1847/1</p> <p>tour [9] 1828/4 1828/5 1839/11 1840/17  1871/11 1873/9 1921/7 1974/23 1992/13</p> <p>towards [1] 1897/4</p> <p>tower [2] 1840/21 1840/25</p> <p>town [4] 1969/18 1969/20 1984/16 1992/23</p> <p>track [1] 1849/12</p> <p>tracked [1] 1996/16</p> <p>tracking [8] 1876/6 1876/7 1891/12 1994/5  1994/9 1995/22 1995/24 1995/25</p> <p>tracks [1] 1993/19</p> <p>traded [1] 1889/6</p> <p>trained [4] 1843/4 1872/11 1900/4 1959/4</p> <p>training [44] 1825/6 1825/7 1825/8 1843/7  1844/3 1844/9 1845/20 1846/19 1855/9  1855/11 1855/11 1855/12 1855/12 1855/19  1874/20 1875/1 1875/4 1875/11 1898/24  1899/2 1899/4 1899/12 1900/6 1900/7</p>
---	---	--

<p><b>T</b></p> <p>training... [19] 1900/10 1902/4 1958/25 1959/1 1959/8 1959/15 1959/21 1959/23 1959/24 1959/25 1961/14 1961/16 1961/19 1961/19 1961/21 1961/24 1961/25 1962/4 1962/6</p> <p>trainings [1] 1960/1</p> <p>transcript [8] 1815/14 1914/12 1914/16 1914/19 1914/20 1915/3 1985/23 1997/20</p> <p>transcription [1] 1820/24</p> <p>transition [1] 1935/22</p> <p>transmitted [1] 1932/2</p> <p>Transocean [97] 1819/5 1819/6 1819/7 1819/8 1819/9 1819/10 1819/12 1819/12 1819/13 1819/16 1819/16 1819/17 1819/19 1819/20 1819/21 1823/24 1825/6 1825/11 1826/3 1826/4 1826/11 1828/9 1828/14 1829/17 1829/18 1831/13 1833/2 1834/10 1834/14 1836/25 1837/12 1842/13 1845/21 1848/15 1850/23 1851/7 1851/23 1853/18 1860/5 1860/10 1861/22 1868/10 1868/12 1872/20 1873/3 1873/6 1873/19 1873/23 1877/1 1877/24 1878/5 1878/21 1878/21 1880/4 1880/13 1883/15 1895/15 1895/23 1897/11 1901/15 1904/16 1905/25 1912/11 1914/17 1915/12 1919/19 1920/7 1921/19 1923/17 1924/7 1924/10 1928/20 1935/19 1935/20 1935/22 1938/22 1939/1 1939/2 1939/7 1939/8 1939/25 1939/25 1940/17 1942/13 1943/2 1958/1 1963/19 1966/21 1967/6 1969/22 1971/20 1974/8 1974/12 1996/4 1996/16 1996/17 1997/1</p> <p>Transocean's [15] 1870/6 1880/10 1895/9 1929/8 1931/22 1942/15 1967/4 1967/14 1968/16 1969/5 1979/16 1985/15 1985/25 1986/4 1995/22</p> <p>trap's [1] 1837/24</p> <p>trapped [1] 1949/4</p> <p>traps [1] 1837/11</p> <p>tread [1] 1834/4</p> <p>trend [3] 1856/16 1856/22 1857/4</p> <p>TREX [18] 1826/1 1833/5 1833/15 1854/9 1856/3 1874/23 1884/12 1888/14 1905/9 1908/15 1910/5 1924/21 1930/3 1933/12 1935/25 1980/6 1989/22 1992/9</p> <p>TREX-05618 [1] 1888/14</p> <p>TREX-1453 [2] 1833/5 1833/15</p> <p>TREX-1454 [2] 1826/1 1856/3</p> <p>TREX-1527 [1] 1884/12</p> <p>TREX-22347 [1] 1874/23</p> <p>TREX-2793 [1] 1989/22</p> <p>TREX-44018 [1] 1992/9</p> <p>TREX-4603 [1] 1910/5</p> <p>TREX-48101 [1] 1933/12</p> <p>TREX-48109 [1] 1930/3</p> <p>TREX-48110 [1] 1935/25</p> <p>TREX-48116 [1] 1924/21</p> <p>TREX-52652 [1] 1854/9</p> <p>TREX-5618 [1] 1905/9</p> <p>TREX-836 [1] 1980/6</p> <p>trial [5] 1815/14 1913/6 1954/15 1957/3 1989/1</p> <p>triangle [2] 1859/21 1860/12</p> <p>tried [3] 1925/3 1981/2 1994/1</p> <p>trip [9] 1838/3 1841/10 1899/15 1899/18 1899/18 1899/19 1950/15 1950/18 1950/19</p> <p>TRITON [1] 1815/8</p> <p>trouble [1] 1887/5</p> <p>true [16] 1834/11 1863/12 1883/14 1890/21 1921/22 1923/24 1933/21 1936/14 1940/6 1942/25 1943/9 1944/15 1970/11 1971/3 1986/12 1997/19</p>	<p>truly [1] 1965/23</p> <p>truth [1] 1845/19</p> <p>try [18] 1844/10 1846/13 1875/7 1881/5 1881/8 1882/18 1884/12 1900/12 1920/15 1950/11 1951/1 1961/6 1972/5 1972/5 1974/13 1976/14 1981/3 1981/4</p> <p>trying [9] 1830/24 1870/11 1871/1 1896/11 1896/15 1905/23 1947/21 1961/2 1964/15</p> <p>tubes [1] 1932/8</p> <p>turn [10] 1841/13 1854/9 1856/1 1856/2 1864/7 1951/14 1955/21 1962/12 1978/1 1980/6</p> <p>turned [2] 1863/23 1974/14</p> <p>turning [1] 1852/14</p> <p>turns [2] 1928/10 1962/18</p> <p>tvd [3] 1978/17 1978/21 1978/23</p> <p>twice [2] 1838/11 1919/15</p> <p>two [26] 1825/15 1834/14 1845/16 1888/24 1896/16 1920/19 1921/4 1928/16 1928/17 1928/24 1929/5 1929/21 1930/12 1933/3 1939/24 1939/24 1949/17 1949/19 1952/16 1959/25 1961/23 1962/10 1980/4 1989/9 1992/18 1994/11</p> <p>two-button [1] 1845/16</p> <p>two-page [1] 1888/24</p> <p>two-year [1] 1920/19</p> <p>type [15] 1836/13 1837/6 1867/6 1889/23 1892/5 1897/12 1901/21 1923/16 1923/18 1939/13 1988/19 1988/24 1989/11 1990/19 1990/22</p> <p>types [6] 1894/17 1936/19 1938/1 1988/6 1988/9 1988/21</p> <p>typical [1] 1861/21</p> <p>typically [6] 1831/1 1845/23 1857/5 1857/10 1875/20 1919/21</p>	<p>1948/3 1953/13 1953/16 1990/3 1997/12</p> <p>unusual [3] 1979/19 1980/22 1980/25</p> <p>up [96] 1822/7 1826/14 1835/20 1838/6 1845/6 1849/24 1850/18 1851/6 1851/13 1854/8 1857/5 1864/7 1869/9 1869/12 1869/23 1871/12 1876/3 1878/7 1878/15 1880/21 1881/22 1882/24 1884/12 1884/20 1886/6 1887/5 1888/11 1888/14 1892/2 1893/17 1894/3 1898/22 1902/11 1902/11 1906/8 1915/25 1922/23 1923/3 1924/20 1925/15 1927/25 1928/3 1928/7 1928/13 1928/21 1929/5 1929/8 1930/3 1930/15 1931/1 1931/2 1931/11 1932/9 1932/22 1933/13 1933/19 1934/10 1934/23 1935/4 1937/4 1937/19 1938/7 1940/15 1946/10 1948/4 1950/1 1952/23 1957/3 1958/12 1959/11 1960/20 1960/21 1962/18 1963/3 1966/14 1967/10 1967/12 1968/8 1969/24 1971/17 1972/7 1973/24 1976/12 1976/23 1978/3 1978/19 1980/1 1984/18 1988/6 1988/18 1989/10 1989/22 1992/9 1992/24 1994/9 1994/23</p> <p>upcoming [7] 1879/9 1879/15 1906/12 1956/1 1970/20 1971/10 1980/17</p> <p>update [4] 1957/8 1983/18 1985/8 1993/15</p> <p>updated [2] 1985/6 1985/7</p> <p>upgrades [1] 1890/23</p> <p>upon [7] 1843/19 1913/16 1947/15 1953/14 1953/15 1954/8 1964/24</p> <p>upper [4] 1838/17 1841/24 1842/3 1866/22</p> <p>upset [3] 1890/6 1905/17 1905/20</p> <p>us [41] 1829/4 1835/1 1836/5 1836/13 1864/7 1867/15 1869/11 1870/10 1871/15 1874/3 1875/6 1875/7 1885/13 1896/15 1901/3 1902/16 1912/12 1914/1 1918/13 1920/17 1929/25 1930/25 1961/21 1962/24 1964/10 1966/5 1968/15 1970/15 1971/24 1974/11 1974/21 1976/16 1982/15 1982/20 1987/3 1987/12 1987/19 1990/5 1992/10 1992/17 1992/22</p> <p>use [17] 1826/19 1836/8 1876/8 1877/22 1881/23 1889/16 1895/12 1896/9 1897/2 1925/3 1928/13 1976/19 1976/20 1976/22 1990/8 1991/3 1991/4</p> <p>used [20] 1830/17 1857/20 1862/25 1863/3 1884/4 1886/23 1895/16 1896/1 1905/22 1913/12 1915/13 1916/8 1916/13 1928/9 1931/22 1937/24 1945/20 1946/3 1946/5 1970/11</p> <p>using [5] 1820/24 1883/16 1897/12 1897/19 1997/2</p> <p>usually [3] 1862/22 1931/12 1994/20</p> <p>utmost [1] 1826/21</p> <p>UWILD [4] 1891/2 1903/20 1903/20 1903/25</p>
	<p><b>U</b></p> <p>U.S [5] 1817/11 1817/15 1817/21 1818/2 1916/4</p> <p>uncommon [5] 1823/18 1823/19 1824/1 1824/3 1824/5</p> <p>under [8] 1827/17 1844/3 1844/10 1874/4 1883/2 1886/13 1889/17 1941/12</p> <p>underbalance [1] 1953/13</p> <p>underbalanced [1] 1943/22</p> <p>UNDERHILL [4] 1817/12 1916/4 1947/13 1996/21</p> <p>underneath [1] 1926/6</p> <p>understand [16] 1831/12 1832/9 1832/19 1839/19 1839/22 1840/9 1858/10 1858/23 1875/8 1880/23 1890/8 1896/7 1899/16 1902/5 1902/6 1950/7</p> <p>understanding [14] 1833/11 1839/10 1843/9 1843/12 1845/13 1858/22 1870/5 1870/6 1875/17 1885/22 1916/12 1916/16 1936/5 1997/21</p> <p>understood [8] 1840/12 1847/21 1863/10 1895/21 1897/21 1898/3 1972/25 1987/4</p> <p>underwater [3] 1903/22 1903/24 1904/10</p> <p>underway [4] 1839/20 1908/23 1909/2 1909/3</p> <p>Unfortunately [2] 1967/18 1986/18</p> <p>unique [1] 1961/18</p> <p>unit [2] 1837/9 1859/5</p> <p>UNITED [12] 1815/1 1815/10 1815/15 1817/11 1817/15 1817/21 1818/2 1903/6 1947/8 1947/13 1960/10 1997/18</p> <p>units [1] 1990/9</p> <p>unlatch [2] 1934/9 1935/2</p> <p>unless [3] 1898/8 1898/14 1938/19</p> <p>unsuccessful [2] 1948/23 1950/25</p> <p>until [14] 1844/20 1849/24 1870/6 1878/7 1878/15 1915/2 1915/20 1919/4 1929/25</p>	<p><b>V</b></p> <p>vague [1] 1907/17</p> <p>valid [2] 1920/12 1920/20</p> <p>value [5] 1842/21 1843/2 1843/4 1952/13 1952/14</p> <p>valves [2] 1894/12 1904/21</p> <p>variable [2] 1885/22 1885/24</p> <p>variety [2] 1961/15 1969/14</p> <p>various [8] 1826/6 1837/22 1933/22 1959/15 1961/14 1970/11 1971/7 1973/15</p> <p>vary [3] 1949/19 1951/7 1951/7</p> <p>vast [1] 1901/9</p> <p>Vastar [3] 1919/5 1919/6 1964/21</p> <p>versa [2] 1836/22 1964/14</p> <p>verse [2] 1888/25 1898/25</p> <p>version [1] 1835/23</p> <p>versions [2] 1902/20 1902/22</p>

<p><b>V</b></p> <p>versus [4] 1868/6 1873/7 1895/13 1962/5 vertically [1] 1933/25</p> <p>very [35] 1827/13 1831/16 1835/22 1838/11 1838/20 1842/9 1844/20 1848/7 1848/10 1849/12 1849/15 1880/3 1880/5 1880/20 1882/10 1887/12 1894/22 1903/12 1904/25 1906/12 1914/14 1914/24 1917/15 1922/10 1934/7 1934/7 1947/7 1948/16 1953/22 1956/25 1957/25 1963/1 1965/2 1968/2 1968/7</p> <p>vessel [20] 1888/11 1889/9 1897/12 1897/23 1897/24 1924/14 1924/15 1926/6 1926/16 1937/9 1939/19 1940/5 1941/5 1941/8 1941/14 1941/21 1941/25 1942/2 1942/18 1942/21</p> <p>vetted [1] 1914/5</p> <p>vice [2] 1836/22 1964/14</p> <p>video [3] 1914/12 1914/21 1915/4</p> <p>Vidrine [9] 1864/12 1922/1 1922/2 1922/3 1922/10 1946/4 1961/20 1968/10 1984/22</p> <p>view [6] 1838/18 1849/10 1855/24 1861/24 1875/7 1932/20</p> <p>viewed [1] 1836/15</p> <p>views [1] 1861/22</p> <p>vigilance [5] 1827/8 1842/25 1843/15 1943/23 1944/8</p> <p>Virginia [2] 1816/10 1816/10</p> <p>virtually [2] 1828/20 1897/6</p> <p>visual [1] 1836/6</p> <p>vital [2] 1942/20 1942/22</p> <p>volume [8] 1858/20 1859/17 1947/24 1948/1 1948/19 1949/11 1949/16 1951/8</p> <p>volumes [3] 1858/25 1947/22 1951/7</p> <p>VON [1] 1820/12</p>	<p>1946/13 1947/25 1948/2 1948/4 1948/5 1948/11 1949/1 1949/2 1949/5 1949/8 1951/4</p> <p>Watts [2] 1816/15 1816/15</p> <p>wave [1] 1941/13</p> <p>way [23] 1838/1 1840/11 1868/1 1891/2 1891/11 1893/4 1893/6 1897/9 1897/15 1898/11 1898/18 1901/13 1928/7 1934/3 1934/23 1935/5 1935/21 1947/14 1948/12 1979/19 1988/3 1994/24 1995/22</p> <p>we [274]</p> <p>we'd [13] 1901/5 1946/16 1948/4 1948/7 1960/11 1964/13 1964/15 1968/20 1969/17 1970/19 1970/20 1970/22 1994/17</p> <p>we'll [12] 1863/19 1869/20 1913/15 1914/6 1915/8 1915/23 1915/25 1917/17 1935/1 1961/9 1976/16 1997/11</p> <p>we're [16] 1834/12 1855/14 1857/25 1858/11 1863/24 1874/14 1875/22 1894/14 1911/3 1946/15 1946/15 1957/17 1958/12 1960/4 1975/15 1991/11</p> <p>we've [23] 1831/24 1833/5 1834/4 1838/22 1839/13 1875/10 1875/11 1908/9 1916/5 1930/7 1930/20 1930/21 1947/12 1961/8 1962/4 1962/22 1970/2 1970/3 1971/24 1975/16 1989/3 1991/10 1991/16</p> <p>Weatherford [1] 1939/13</p> <p>week [4] 1922/2 1955/1 1974/17 1974/22</p> <p>weekly [4] 1894/11 1969/15 1973/17 1973/20</p> <p>weight [5] 1859/17 1877/17 1886/14 1931/5 1978/14</p> <p>weights [1] 1976/22</p> <p>welcome [1] 1917/12</p> <p>weld [1] 1988/15</p> <p>welded [1] 1988/14</p> <p>well [264]</p> <p>well's [7] 1921/1 1963/24 1964/4 1964/22 1967/23 1969/5 1991/12</p> <p>well-control [1] 1825/13</p> <p>wellbore [4] 1826/19 1826/21 1833/20 1834/12</p> <p>wellhead [5] 1926/21 1934/8 1941/15 1990/13 1990/24</p> <p>wellheads [1] 1989/17</p> <p>wells [24] 1828/3 1828/22 1828/22 1828/25 1829/2 1847/23 1848/12 1848/18 1848/22 1848/23 1882/7 1882/8 1900/23 1900/24 1901/4 1901/9 1924/2 1924/2 1944/1 1945/12 1966/6 1979/21 1984/25 1990/21</p> <p>went [16] 1830/1 1850/18 1878/4 1885/7 1887/9 1888/9 1894/13 1898/24 1906/23 1918/23 1919/1 1919/3 1922/20 1929/15 1959/1 1987/10</p> <p>were [181] 1823/6 1823/9 1823/10 1823/12 1824/24 1826/11 1829/4 1830/2 1830/14 1835/2 1837/1 1837/2 1837/2 1837/5 1838/3 1838/12 1839/15 1839/19 1840/9 1843/3 1843/3 1843/17 1843/21 1843/25 1844/2 1845/25 1846/3 1848/10 1848/13 1848/14 1848/17 1848/18 1850/5 1850/11 1850/22 1850/24 1851/1 1851/8 1851/11 1851/15 1851/17 1852/11 1858/19 1862/13 1868/18 1869/1 1869/22 1870/13 1871/23 1874/4 1878/1 1878/1 1883/11 1883/17 1883/22 1883/22 1887/20 1888/7 1888/8 1888/10 1888/10 1890/14 1890/19 1891/5 1892/6 1893/3 1893/16 1894/8 1894/17 1894/19 1896/11 1896/15 1899/14 1900/1 1900/15 1900/24 1901/5 1903/19 1904/11 1904/13 1904/14 1905/6 1905/9 1906/6 1906/6 1906/9 1906/13 1907/2 1908/18 1909/11 1909/25 1911/6 1911/14 1912/4 1912/5 1912/6 1912/9 1919/18 1920/23 1923/3 1926/17 1929/12</p>	<p>1929/14 1929/23 1930/22 1930/22 1930/25 1931/24 1932/7 1932/8 1937/16 1939/17 1940/9 1940/10 1940/17 1942/5 1942/10 1943/7 1945/17 1946/18 1946/23 1954/7 1954/7 1954/11 1954/11 1954/12 1954/21 1955/2 1959/8 1959/16 1965/12 1968/14 1968/21 1968/22 1968/23 1969/13 1969/14 1969/14 1970/3 1970/23 1971/4 1971/8 1971/10 1973/3 1973/17 1973/17 1973/20 1974/2 1974/15 1975/3 1975/4 1975/7 1975/11 1975/13 1976/5 1979/24 1981/18 1981/19 1986/2 1986/5 1987/7 1987/8 1987/9 1987/11 1987/19 1987/20 1987/23 1987/24 1988/5 1988/19 1988/24 1991/13 1994/4 1995/8 1995/21 1995/24 1995/25 1996/1 1996/6 1996/22 1997/14</p> <p>weren't [6] 1894/17 1908/21 1951/18 1954/9 1954/22 1994/1</p> <p>Westlake [1] 1932/3</p> <p>what [193]</p> <p>what's [9] 1836/12 1840/21 1841/5 1908/25 1978/13 1982/2 1982/3 1991/7 1993/16</p> <p>whatever [7] 1893/17 1921/15 1944/2 1951/4 1961/24 1992/18 1993/14</p> <p>Whatever's [1] 1941/13</p> <p>whatsoever [1] 1912/3</p> <p>when [79] 1826/2 1830/1 1830/14 1832/13 1834/12 1835/12 1837/24 1840/17 1840/23 1843/15 1844/12 1844/18 1844/24 1845/14 1846/23 1850/22 1852/11 1856/24 1865/4 1870/13 1875/12 1876/5 1878/4 1881/18 1883/22 1886/13 1891/14 1891/16 1892/8 1895/4 1897/12 1898/18 1900/3 1908/4 1908/22 1908/23 1909/1 1909/1 1912/9 1922/13 1922/23 1922/24 1923/1 1923/5 1923/5 1923/7 1924/2 1927/25 1930/22 1930/25 1938/10 1942/5 1942/9 1942/9 1943/1 1943/5 1943/16 1943/20 1943/20 1945/17 1947/16 1948/1 1948/5 1948/10 1949/4 1949/6 1949/15 1950/9 1955/5 1955/9 1957/17 1957/21 1958/24 1961/7 1977/3 1985/14 1990/10 1992/19 1993/13</p> <p>when's [2] 1855/1 1855/19</p> <p>whenever [3] 1929/15 1942/9 1962/14</p> <p>where [51] 1827/11 1839/16 1842/9 1849/22 1852/15 1857/6 1859/14 1863/8 1863/23 1866/8 1868/6 1883/1 1884/10 1884/22 1886/10 1892/5 1893/4 1894/21 1897/1 1897/22 1898/12 1899/2 1899/13 1899/23 1900/1 1900/24 1902/3 1902/23 1904/19 1907/18 1910/1 1910/8 1910/12 1910/13 1918/18 1922/23 1923/3 1924/16 1924/25 1925/3 1925/16 1926/9 1926/11 1926/20 1934/18 1937/16 1946/13 1948/5 1988/17 1991/3 1993/19</p> <p>WHEREUPON [5] 1822/12 1863/20 1912/23 1918/1 1997/14</p> <p>wherever [1] 1948/3</p> <p>whether [23] 1827/21 1829/9 1831/22 1861/22 1862/13 1881/13 1885/15 1886/1 1898/11 1898/13 1898/19 1898/19 1898/20 1939/15 1940/24 1944/2 1948/22 1950/24 1953/1 1962/24 1982/23 1992/17 1994/9</p> <p>which [34] 1833/21 1835/17 1836/9 1840/10 1845/24 1848/3 1856/15 1856/21 1857/3 1857/12 1864/20 1865/7 1865/22 1867/2 1874/19 1885/10 1889/5 1890/5 1895/25 1895/25 1897/6 1899/13 1910/2 1913/13 1931/6 1933/22 1954/11 1954/12 1969/15 1970/8 1978/2 1980/23 1982/12 1988/13</p> <p>while [28] 1839/11 1861/10 1865/16 1865/23 1876/3 1883/11 1888/2 1904/11 1906/6 1909/11 1916/13 1921/5 1921/11 1932/7</p>
<p><b>W</b></p> <p>wait [9] 1852/24 1853/4 1853/7 1913/18 1916/19 1918/16 1918/16 1929/25 1952/23</p> <p>waited [1] 1953/9</p> <p>waiting [5] 1892/21 1910/11 1929/12 1952/17 1985/9</p> <p>waiver [1] 1920/15</p> <p>walk [2] 1934/19 1937/22</p> <p>Walker [2] 1816/9 1848/3</p> <p>walking [2] 1857/14 1960/24</p> <p>WALTER [1] 1816/12</p> <p>Walther [1] 1819/22</p> <p>Walz [1] 1984/24</p> <p>want [50] 1822/18 1827/1 1835/24 1841/13 1843/6 1851/4 1852/21 1856/11 1863/4 1863/11 1867/18 1869/17 1869/19 1876/20 1879/1 1881/22 1881/23 1882/18 1883/8 1885/15 1887/19 1889/16 1896/7 1896/9 1896/18 1898/2 1902/5 1907/3 1914/3 1914/22 1915/17 1915/20 1920/2 1924/17 1930/7 1938/20 1942/11 1952/1 1952/8 1953/8 1953/12 1953/15 1958/12 1960/20 1963/8 1969/6 1980/1 1991/17 1993/13 1993/13</p> <p>wanted [8] 1854/7 1898/25 1907/1 1949/15 1952/25 1955/25 1964/14 1980/16</p> <p>wants [3] 1915/2 1915/4 1967/9</p> <p>was [342]</p> <p>Washington [4] 1817/20 1817/25 1818/6 1819/4</p> <p>wasn't [10] 1852/12 1890/17 1892/14 1904/7 1928/19 1945/25 1951/19 1980/25 1983/13 1994/20</p> <p>watch [3] 1836/12 1922/19 1931/2</p> <p>watching [3] 1837/10 1938/18 1950/19</p> <p>water [15] 1848/3 1882/4 1882/7 1882/9</p>	<p>1967/23 1969/5 1991/12</p> <p>well-control [1] 1825/13</p> <p>wellbore [4] 1826/19 1826/21 1833/20 1834/12</p> <p>wellhead [5] 1926/21 1934/8 1941/15 1990/13 1990/24</p> <p>wellheads [1] 1989/17</p> <p>wells [24] 1828/3 1828/22 1828/22 1828/25 1829/2 1847/23 1848/12 1848/18 1848/22 1848/23 1882/7 1882/8 1900/23 1900/24 1901/4 1901/9 1924/2 1924/2 1944/1 1945/12 1966/6 1979/21 1984/25 1990/21</p> <p>went [16] 1830/1 1850/18 1878/4 1885/7 1887/9 1888/9 1894/13 1898/24 1906/23 1918/23 1919/1 1919/3 1922/20 1929/15 1959/1 1987/10</p> <p>were [181] 1823/6 1823/9 1823/10 1823/12 1824/24 1826/11 1829/4 1830/2 1830/14 1835/2 1837/1 1837/2 1837/2 1837/5 1838/3 1838/12 1839/15 1839/19 1840/9 1843/3 1843/3 1843/17 1843/21 1843/25 1844/2 1845/25 1846/3 1848/10 1848/13 1848/14 1848/17 1848/18 1850/5 1850/11 1850/22 1850/24 1851/1 1851/8 1851/11 1851/15 1851/17 1852/11 1858/19 1862/13 1868/18 1869/1 1869/22 1870/13 1871/23 1874/4 1878/1 1878/1 1883/11 1883/17 1883/22 1883/22 1887/20 1888/7 1888/8 1888/10 1888/10 1890/14 1890/19 1891/5 1892/6 1893/3 1893/16 1894/8 1894/17 1894/19 1896/11 1896/15 1899/14 1900/1 1900/15 1900/24 1901/5 1903/19 1904/11 1904/13 1904/14 1905/6 1905/9 1906/6 1906/6 1906/9 1906/13 1907/2 1908/18 1909/11 1909/25 1911/6 1911/14 1912/4 1912/5 1912/6 1912/9 1919/18 1920/23 1923/3 1926/17 1929/12</p>	<p>1929/14 1929/23 1930/22 1930/22 1930/25 1931/24 1932/7 1932/8 1937/16 1939/17 1940/9 1940/10 1940/17 1942/5 1942/10 1943/7 1945/17 1946/18 1946/23 1954/7 1954/7 1954/11 1954/11 1954/12 1954/21 1955/2 1959/8 1959/16 1965/12 1968/14 1968/21 1968/22 1968/23 1969/13 1969/14 1969/14 1970/3 1970/23 1971/4 1971/8 1971/10 1973/3 1973/17 1973/17 1973/20 1974/2 1974/15 1975/3 1975/4 1975/7 1975/11 1975/13 1976/5 1979/24 1981/18 1981/19 1986/2 1986/5 1987/7 1987/8 1987/9 1987/11 1987/19 1987/20 1987/23 1987/24 1988/5 1988/19 1988/24 1991/13 1994/4 1995/8 1995/21 1995/24 1995/25 1996/1 1996/6 1996/22 1997/14</p> <p>weren't [6] 1894/17 1908/21 1951/18 1954/9 1954/22 1994/1</p> <p>Westlake [1] 1932/3</p> <p>what [193]</p> <p>what's [9] 1836/12 1840/21 1841/5 1908/25 1978/13 1982/2 1982/3 1991/7 1993/16</p> <p>whatever [7] 1893/17 1921/15 1944/2 1951/4 1961/24 1992/18 1993/14</p> <p>Whatever's [1] 1941/13</p> <p>whatsoever [1] 1912/3</p> <p>when [79] 1826/2 1830/1 1830/14 1832/13 1834/12 1835/12 1837/24 1840/17 1840/23 1843/15 1844/12 1844/18 1844/24 1845/14 1846/23 1850/22 1852/11 1856/24 1865/4 1870/13 1875/12 1876/5 1878/4 1881/18 1883/22 1886/13 1891/14 1891/16 1892/8 1895/4 1897/12 1898/18 1900/3 1908/4 1908/22 1908/23 1909/1 1909/1 1912/9 1922/13 1922/23 1922/24 1923/1 1923/5 1923/5 1923/7 1924/2 1927/25 1930/22 1930/25 1938/10 1942/5 1942/9 1942/9 1943/1 1943/5 1943/16 1943/20 1943/20 1945/17 1947/16 1948/1 1948/5 1948/10 1949/4 1949/6 1949/15 1950/9 1955/5 1955/9 1957/17 1957/21 1958/24 1961/7 1977/3 1985/14 1990/10 1992/19 1993/13</p> <p>when's [2] 1855/1 1855/19</p> <p>whenever [3] 1929/15 1942/9 1962/14</p> <p>where [51] 1827/11 1839/16 1842/9 1849/22 1852/15 1857/6 1859/14 1863/8 1863/23 1866/8 1868/6 1883/1 1884/10 1884/22 1886/10 1892/5 1893/4 1894/21 1897/1 1897/22 1898/12 1899/2 1899/13 1899/23 1900/1 1900/24 1902/3 1902/23 1904/19 1907/18 1910/1 1910/8 1910/12 1910/13 1918/18 1922/23 1923/3 1924/16 1924/25 1925/3 1925/16 1926/9 1926/11 1926/20 1934/18 1937/16 1946/13 1948/5 1988/17 1991/3 1993/19</p> <p>WHEREUPON [5] 1822/12 1863/20 1912/23 1918/1 1997/14</p> <p>wherever [1] 1948/3</p> <p>whether [23] 1827/21 1829/9 1831/22 1861/22 1862/13 1881/13 1885/15 1886/1 1898/11 1898/13 1898/19 1898/19 1898/20 1939/15 1940/24 1944/2 1948/22 1950/24 1953/1 1962/24 1982/23 1992/17 1994/9</p> <p>which [34] 1833/21 1835/17 1836/9 1840/10 1845/24 1848/3 1856/15 1856/21 1857/3 1857/12 1864/20 1865/7 1865/22 1867/2 1874/19 1885/10 1889/5 1890/5 1895/25 1895/25 1897/6 1899/13 1910/2 1913/13 1931/6 1933/22 1954/11 1954/12 1969/15 1970/8 1978/2 1980/23 1982/12 1988/13</p> <p>while [28] 1839/11 1861/10 1865/16 1865/23 1876/3 1883/11 1888/2 1904/11 1906/6 1909/11 1916/13 1921/5 1921/11 1932/7</p>

<p><b>W</b></p> <p>while... [14] 1935/17 1937/24 1939/15 1940/24 1941/1 1941/8 1941/16 1941/21 1942/2 1954/7 1955/1 1959/16 1983/1 1994/4 white [1] 1929/4 Whiteley [1] 1818/15 who [35] 1823/4 1842/11 1849/1 1852/9 1860/17 1862/25 1868/12 1871/17 1905/5 1907/23 1908/6 1908/8 1909/16 1912/18 1929/1 1935/20 1945/6 1954/18 1963/18 1963/23 1966/16 1966/18 1968/16 1971/8 1973/3 1973/6 1974/14 1982/12 1982/15 1984/11 1985/3 1989/14 1989/16 1992/4 1996/20 who's [3] 1822/7 1863/3 1984/2 whoever [2] 1892/8 1977/14 whoever's [1] 1992/12 whole [5] 1919/24 1946/24 1950/19 1973/10 1979/6 whom [2] 1907/18 1996/21 whose [2] 1827/14 1827/15 why [12] 1827/7 1831/21 1840/12 1855/24 1875/13 1890/8 1949/14 1981/1 1981/22 1981/23 1992/16 1993/16 why's [2] 1855/1 1855/19 will [32] 1833/23 1835/13 1853/10 1883/18 1912/18 1914/11 1916/14 1948/10 1951/7 1951/7 1951/12 1956/6 1957/2 1957/8 1957/14 1961/6 1962/20 1963/6 1972/2 1972/2 1972/3 1976/21 1978/9 1981/15 1983/22 1985/8 1985/11 1986/18 1988/16 1992/12 1992/13 1992/13 Williams [8] 1816/18 1816/19 1914/12 1914/17 1918/9 1925/14 1947/14 1960/13 Williams' [1] 1915/3 Williamson [2] 1817/5 1817/6 Willis [2] 1860/17 1860/22 Wilson [6] 1919/2 1957/5 1984/2 1984/3 1984/3 1984/5 wind [5] 1896/10 1896/17 1896/20 1897/5 1897/6 window [2] 1920/18 1920/18 windows [2] 1930/11 1930/16 winds [1] 1941/13 WINFIELD [1] 1818/9 Winslow [2] 1966/14 1966/16 wirelining [2] 1975/4 1975/5 withhold [1] 1986/3 within [3] 1844/3 1873/23 1889/19 without [7] 1828/21 1913/9 1917/8 1928/21 1942/23 1961/13 1970/6 witness [11] 1824/12 1834/6 1839/2 1854/19 1887/15 1912/18 1913/1 1917/24 1930/21 1958/3 1997/11 witness's [1] 1824/17 Wittmann [2] 1819/22 1819/23 WOC [1] 1952/17 women [1] 1848/10 won't [8] 1888/25 1898/24 1960/6 1960/8 1962/3 1962/23 1968/13 1979/9 Wong [3] 1992/5 1992/7 1992/8 wording [1] 1895/14 words [6] 1869/15 1889/17 1891/10 1901/19 1952/20 1966/24 work [29] 1863/6 1878/5 1878/14 1898/19 1906/10 1918/13 1918/24 1919/3 1920/13 1921/12 1921/20 1924/24 1934/23 1940/4 1940/6 1940/14 1941/5 1955/7 1959/1 1964/3 1964/17 1965/21 1965/24 1968/9 1968/21 1971/19 1981/2 1982/8 1997/5 worked [29] 1825/2 1835/7 1860/19 1883/24 1894/6 1909/23 1916/5 1918/25 1919/4</p>	<p>1919/5 1919/6 1919/9 1919/23 1921/14 1921/18 1921/18 1922/3 1954/24 1955/1 1963/7 1963/25 1964/4 1964/6 1964/7 1982/6 1982/11 1982/13 1982/18 1990/16 working [14] 1849/1 1849/10 1892/1 1922/6 1929/22 1940/10 1940/10 1940/21 1965/19 1966/1 1966/3 1968/19 1983/2 1992/13 works [2] 1921/7 1927/24 worry [1] 1938/11 would [239] wouldn't [20] 1823/25 1824/5 1846/12 1857/16 1891/10 1892/17 1892/22 1896/9 1898/16 1909/23 1920/17 1920/17 1942/4 1943/25 1945/1 1953/11 1953/12 1953/15 1987/21 1991/8 Wright [1] 1815/18 writes [2] 1965/8 1976/12 written [3] 1866/25 1867/3 1945/18 written-out [1] 1945/18 wrong [5] 1826/18 1862/1 1862/3 1894/22 1973/12</p>	<p>1934/24 1938/10 1938/11 1943/15 1947/15 1949/4 1950/8 1950/22 1951/9 1952/5 1979/21 you-all [2] 1848/6 1903/9 YOUNG [1] 1818/5 your [190] Your Honor [1] 1917/4 yourself [5] 1846/25 1897/22 1945/22 1957/6 1962/25</p>
	<p><b>Y</b></p> <p>yeah [40] 1835/9 1837/13 1841/1 1844/5 1850/14 1865/9 1867/13 1870/17 1870/19 1870/23 1874/10 1874/15 1875/5 1878/1 1881/17 1883/17 1887/10 1890/3 1890/7 1892/13 1895/2 1897/10 1897/18 1899/25 1901/2 1904/1 1904/22 1905/6 1907/19 1911/2 1918/22 1939/12 1944/20 1947/5 1950/13 1951/9 1951/12 1953/18 1958/22 1979/13 year [7] 1838/13 1920/19 1928/24 1929/21 1961/23 1963/15 1965/20 years [40] 1823/15 1825/15 1828/2 1838/10 1845/21 1848/8 1871/25 1874/1 1889/3 1889/12 1904/13 1919/1 1919/2 1919/13 1919/20 1924/7 1924/13 1928/16 1928/17 1929/5 1934/17 1945/22 1945/24 1952/17 1958/17 1958/19 1958/20 1958/22 1959/7 1959/7 1959/25 1961/23 1961/23 1964/3 1964/5 1964/7 1964/21 1977/24 1982/25 1996/21 years' [1] 1919/11 yellow [1] 1882/7 yes [350] yesterday [2] 1847/21 1914/13 yet [3] 1955/24 1980/16 1980/24 yield [1] 1950/1 Yoakum [1] 1817/6 you [1019] you'd [10] 1825/23 1888/2 1892/11 1892/11 1937/20 1943/24 1947/18 1947/25 1966/11 1970/23 you'll [6] 1858/11 1865/4 1956/25 1983/21 1983/23 1983/24 you're [54] 1825/19 1827/11 1829/12 1830/20 1830/24 1840/17 1841/9 1841/10 1849/13 1858/7 1865/5 1866/25 1867/2 1867/5 1869/11 1873/3 1880/20 1880/24 1881/19 1884/6 1890/16 1893/12 1895/1 1899/23 1900/19 1909/1 1909/1 1912/16 1917/12 1919/15 1924/14 1925/15 1925/16 1928/6 1935/12 1937/24 1938/10 1938/16 1947/21 1947/21 1947/22 1948/9 1948/13 1949/5 1949/24 1951/8 1955/3 1955/3 1955/9 1960/16 1972/19 1983/25 1983/25 1984/1 you've [40] 1825/8 1825/13 1825/15 1826/2 1828/4 1831/17 1836/4 1848/14 1853/15 1854/6 1856/19 1856/20 1857/2 1858/14 1865/2 1869/18 1870/10 1871/15 1872/11 1873/2 1873/19 1880/9 1885/13 1889/5 1891/20 1896/1 1934/8 1934/14 1934/23</p>	<p><b>Z</b></p> <p>zero [1] 1893/21</p>