

South Dakota Public Utilities Commission

EL18-026 - In the Matter of the Application by Prevailing Wind Park, LLC for a Permit of a Wind Energy Facility in Bon Homme County, Charles Mix County and Hutchinson County, South Dakota, for the Prevailing Wind Park Project - Evidentiary Hearing

Wednesday, October 10, 2018

Room 413, State Capitol, Pierre, SD

Please Print

Name

Representing

Reece Almond

Hubbards & Schoenfelder

Chris Howell

Prevailing Wind

Sherman Fuerniss

Self and family

Paul Schoenfelder

Self

BRIDGET CANTY

PREVAILING WIND

Melissa Hubman

Intervenor

Lisa Schoenfelder

Intervenor

Lori Fuerniss

Scott Creech

s power

Kelli pozour

Self

Lisa Agimonti

Prevailing Wind Park

Wendy Smith

Prevailing Wind Park

Doreen Clark

Intervenor

Karen Jenke

Self

Dustin Brandt

Self

Elizabeth Brandt

Self

Jess Cheney

s power

John Homan

Self

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THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA

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IN THE MATTER OF THE APPLICATION  
BY PREVAILING WIND PARK, LLC FOR  
A PERMIT OF A WIND ENERGY FACILITY  
IN BON HOMME COUNTY, CHARLES MIX  
COUNTY, AND HUTCHINSON COUNTY,  
SOUTH DAKOTA, FOR THE PREVAILING  
WIND PARK PROJECT

EL18-026

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Transcript of Hearing  
October 10, 2018  
8:30 a.m.

Volume II, Pages 332-643

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BEFORE THE PUBLIC UTILITIES COMMISSION,  
KRISTIE FIEGEN, CHAIRWOMAN  
GARY HANSON, VICE CHAIRMAN  
CHRIS NELSON, COMMISSIONER

COMMISSION STAFF  
Adam de Hueck  
Karen Cremer  
Greg Rislov

A P P E A R A N C E S

Mollie Smith and Lisa Agrimonti,  
appearing on behalf of Prevailing Wind Park;  
  
Reece Almond,  
appearing on behalf of Intervenor Gregg Hubner,  
Marsha Hubner, Paul Schoenfelder, and Lisa Schoenfelder;  
  
Sherman Fuerniss,  
appearing pro se;  
  
Karen Jenkins,  
appearing pro se;  
  
Kelli Pazour,  
appearing pro se;  
  
Kristen Edwards and Amanda Reiss,  
appearing on behalf of Staff.

Reported By Cheri McComsey Wittler, RPR, CRR  
Precision Reporting, 213 S. Main, Onida, South Dakota

1	<u>I N D E X</u>	
2	APPLICANT'S WITNESSES	PAGE
3	AARON ANDERSON	
4	Direct Examination by Ms. Smith	40
	Cross-Examination by Mr. Almond	43
5	Cross-Examination by Mr. Fuerniss	50
	Cross-Examination by Ms. Jenkins	52
6	Cross-Examination by Ms. Pazour	52
	Cross-Examination by Ms. Reiss	54
7	Commission Questions	58
	Recross-Examination by Mr. Almond	80
8	Recross-Examination by Mr. Fuerniss	81
	Recross-Examination by Ms. Jenkins	82
9	Recross-Examination by Ms. Reiss	85
10	DR. MARK ROBERTS	
11	Direct Examination by Ms. Agrimonti	87
	Cross-Examination by Mr. Almond	95
12	Cross-Examination by Mr. Fuerniss	144
	Cross-Examination by Ms. Reiss	150
13	Commission Questions	153
	Redirect Examination by Ms. Agrimonti	169
14	Recross-Examination by Mr. Almond	177
	Recross-Examination by Mr. Fuerniss	182
15	KAREN PETERS	
16	Direct Examination by Ms. Smith	185
17	Cross-Examination by Mr. Almond	188
	Cross-Examination by Mr. Fuerniss	198
18	Cross-Examination by Ms. Pazour	199
	Cross-Examination by Ms. Reiss	201
19	Commission Questions	201
20	PETER PAWLOWSKI	
21	Direct Examination by Ms. Agrimonti	203
	Cross-Examination by Mr. Almond	211
22	Cross-Examination by Mr. Fuerniss	237
	Cross-Examination by Ms. Jenkins	240
23	Cross-Examination by Ms. Edwards	240
	Commission Questions	253
24	Recross-Examination by Mr. Almond	282
	Recross-Examination by Mr. Fuerniss	285
25	Recross-Examination by Ms. Edwards	287

1	<u>I N D E X (Continued)</u>	
2	APPLICANT'S WITNESSES	PAGE
3	MICHAEL MAROUS	
4	Direct Examination by Ms. Agrimonti	289
	Commission Questions	293
5	Cross-Examination by Mr. Fuerniss	305
	Cross-Examination by Ms. Jenkins	306
6	Cross-Examination by Ms. Edwards	307
7	DANIEL PARDO	
8	Direct Examination by Ms. Smith	309
	Cross-Examination by Mr. Fuerniss	313
9	Commission Questions	314
	Recross-Examination by Mr. Fuerniss	316
10	DR. JEFFREY ELLENBOGEN	
11	Direct Examination by Ms. Agrimonti	318
12	Cross-Examination by Mr. Almond	351
	Cross-Examination by Mr. Fuerniss	370
13	Cross-Examination by Ms. Pazour	371
	Cross-Examination by Ms. Edwards	371
14	Commission Questions	374
	Recross-Examination by Mr. Almond	379
15	Recross-Examination by Mr. Fuerniss	380
	Recross-Examination by Ms. Pazour	383
16	Recross-Examination by Ms. Edwards	384
	Commission Questions	386
17	Recross-Examination by Mr. Almond	388
18	DUSTIN BRANDT	
19	Direct Examination by Ms. Smith	392
	Cross-Examination by Ms. Reiss	399
20	Cross-Examination by Mr. Almond	407
	Cross-Examination by Mr. Fuerniss	416
21	Cross-Examination by Ms. Jenkins	417
	Cross-Examination by Ms. Pazour	418
22	Commission Questions	419
	Redirect Examination by Ms. Smith	425
23	Recross-Examination by Mr. Almond	425
	Recross-Examination by Mr. Fuerniss	427
24		
25		

1	<u>I N D E X (Continued)</u>	
2	APPLICANT'S WITNESSES	PAGE
3	BRIDGET CANTY	
4	Direct Examination by Ms. Smith	429
	Cross-Examination by Mr. Almond	433
5	Cross-Examination by Mr. Fuerniss	437
	Cross-Examination by Ms. Edwards	438
6	Commission Questions	445
	Redirect Examination by Ms. Smith	468
7	Recross-Examination by Ms. Jenkins	469
	Recross-Examination by Ms. Pazour	469
8	Recross-Examination by Ms. Edwards	471
9	CHRIS HOWELL	
10	Direct Examination by Ms. Smith	473
	Cross-Examination by Mr. Almond	477
11	Cross-Examination by Mr. Fuerniss	504
	Cross-Examination by Ms. Edwards	509
12	Commission Questions	511
	Redirect Examination by Ms. Smith	514
13	Recross-Examination by Mr. Almond	518
14	SCOTT CREECH	
15	Direct Examination by Ms. Agrimonti	522
	Cross-Examination by Mr. Almond	529
16	Cross-Examination by Mr. Fuerniss	550
	Cross-Examination by Ms. Reiss	553
17	Commission Questions	561
	Redirect Examination by Ms. Agrimonti	569
18	INTERVENOR'S WITNESS	PAGE
19	SHERMAN FUERNISS	
20	Direct Testimony by Mr. Fuerniss	571
21	Cross-Examination by Mr. Almond	583
	Cross-Examination by Ms. Pazour	589
22	Cross-Examination by Ms. Reiss	589
	Commission Questions	592
23		
24		
25		

1	<u>I N D E X (Continued)</u>	
2	INTERVENOR'S WITNESS	PAGE
3	KELLI PAZOUR	
4	Direct Testimony by Ms. Pazour	596
	Cross-Examination by Mr. Almond	602
5	Cross-Examination by Mr. Fuerniss	609
	Cross-Examination by Ms. Reiss	610
6	Commission Questions	611
7	INTERVENOR'S WITNESSES	PAGE
8	KAREN JENKINS	
9	Direct Testimony by Ms. Jenkins	614
	Cross-Examination by Ms. Agrimonti	633
10	Cross-Examination by Mr. Almond	636
	Commission Questions	638
11	INTERVENORS' WITNESSES	PAGE
12	MIKE SOUKUP	
13	Direct Examination by Mr. Almond	663
14	Cross-Examination by Mr. Fuerniss	690
	Cross-Examination by Ms. Reiss	692
15	KEITH MUSHITZ	
16	Direct Examination by Mr. Almond	695
17	Cross-Examination by Ms. Agrimonti	703
	Cross-Examination by Mr. Fuerniss	704
18	Cross-Examination by Ms. Jenkins	707
	Cross-Examination by Ms. Pazour	707
19	Cross-Examination by Ms. Reiss	708
	Commission Questions	709
20	Redirect Examination by Mr. Almond	710
	Recross-Examination by Mr. Fuerniss	711
21	Recross-Examination by Ms. Pazour	712
22		
23		
24		
25		

1	<u>I N D E X (Continued)</u>	
2	STAFF'S WITNESS	PAGE
3	DAVID HESSLER	
4	Direct Examination by Ms. Edwards	713
	Cross-Examination by Ms. Smith	724
5	Cross-Examination by Mr. Almond	731
	Cross-Examination by Mr. Fuerniss	758
6	Cross-Examination by Ms. Jenkins	759
	Commission Questions	765
7	Redirect Examination by Ms. Edwards	782
	Recross-Examination by Mr. Almond	784
8	Recross-Examination by Mr. Fuerniss	786
	Recross-Examination by Ms. Jenkins	788
9	Recross-Examination by Ms. Pazour	790
10	INTERVENORS' WITNESSES	PAGE
11	RICHARD JAMES	
12	Direct Examination by Mr. Almond	792
	Cross-Examination by Ms. Smith	819
13	Cross-Examination by Ms. Edwards	837
	Commission Questions	842
14	Redirect Examination by Mr. Almond	869
	Recross-Examination by Ms. Edwards	871
15	Recross-Examination by Ms. Smith	880
16	JERRY PUNCH	
17	Direct Examination by Mr. Almond	881
	Cross-Examination by Ms. Smith	896
18	Cross-Examination by Mr. Fuerniss	916
	Commission Questions	916
19	PAUL SCHOENFELDER	
20	Direct Examination by Mr. Almond	921
21	Cross-Examination by Ms. Agrimonti	935
	Cross-Examination by Mr. Fuerniss	936
22	Cross-Examination by Ms. Jenkins	937
	Commission Questions	941
23	Recross-Examination by Mr. Jenkins	951
24		
25		

1	<u>I N D E X (Continued)</u>	
2	INTERVENORS' WITNESSES	PAGE
3	GREGG HUBNER	
4	Direct Examination by Mr. Almond	952
	Cross-Examination by Ms. Agrimonti	973
5	Cross-Examination by Ms. Jenkins	979
	Cross-Examination by Ms. Reiss	979
6	Commission Questions	981
7	JEROME POWERS	
8	Direct Examination by Mr. Almond	1008
	Cross-Examination by Ms. Smith	1016
9	Cross-Examination by Mr. Fuerniss	1019
	Cross-Examination by Ms. Pazour	1021
10	Cross-Examination by Ms. Reiss	1023
	Commission Questions	1023
11	Recross-Examination by Ms. Smith	1029
12	KEVIN ANDERSH	
13	Direct Examination by Mr. Almond	1032
	Cross-Examination by Ms. Agrimonti	1037
14	Cross-Examination by Mr. Fuerniss	1038
	Cross-Examination by Ms. Reiss	1041
15	Commission Questions	1042
16	SCOTT RUETER	
17	Direct Examination by Mr. Almond	1045
	Cross-Examination by Ms. Agrimonti	1054
18	Cross-Examination by Ms. Reiss	1057
	Commission Questions	1060
19	Recross-Examination by Ms. Pazour	1069
20	VICKI MAY	
21	Direct Examination by Mr. Almond	1070
	Cross-Examination by Ms. Agrimonti	1084
22	Cross-Examination by Ms. Reiss	1087
	Commission Questions	1089
23		
24		
25		



I N D E X (Continued)

## STAFF'S WITNESS PAGE

## DARREN KEARNEY

Direct Examination by Ms. Edwards	1100
Cross-Examination by Mr. Almond	1104
Cross-Examination by Mr. Fuerniss	1110
Cross-Examination by Ms. Pazour	1110
Commission Questions	1112
Redirect Examination by Ms. Edwards	1129
Recross-Examination by Mr. Almond	1133
Cross-Examination by Mr. Fuerniss	1133
Cross-Examination by Ms. Jenkins	1134

## APPLICANT'S REBUTTAL WITNESS PAGE

## PETER PAWLOWSKI

Direct Examination by Ms. Agrimonti	1138
Cross-Examination by Mr. Almond	1144
Cross-Examination by Mr. Fuerniss	1145
Cross-Examination by Ms. Pazour	1147
Cross-Examination by Ms. Edwards	1149
Commission Questions	1154

1	<u>I N D E X (Continued)</u>				
2	APPLICANT'S EXHIBITS	M	O	R	
3	A1	Application	19	26	26
	A2	Anderson Direct	19	26	26
4	A2-1	Ex. 1 Anderson CV	19	26	26
	A3	Anderson Rebuttal	19	26	26
5	A3-1	Ex. 1 Results of Updated	19	26	26
		Shadow Flicker Analysis			
6	A3-2	Ex. 2 Updated Shadow Flicker	19	26	26
		Analysis			
7	A4	Roberts Supplemental Direct	19	26	26
	A4-1	Ex. 1 Statement of	19	26	26
8		Qualifications			
	A4-2	Ex. 2 Australian Nat'l Health	19	26	26
9		and Medical Research Council			
10		(2010) - Wind Turbines and			
		Health - A Rapid Review of			
11		the Evidence			
11	A4-2a	Ex. 2a Australian National	19	26	26
12		Health and Medical Research			
13		Council (2014) - Review of			
		Addt'l Evidence for NHMRC			
14		Information Paper - Evidence			
		on Wind Farms and Human			
15		Health - Final Report			
15	A4-2b	Ex. 2b Australian National	19	26	26
16		Health and Medical Research			
		Council (2015) - NHMRC			
17		Statement: Evidence on Wind			
		Farms and Human Health			
17	A4-2c	Ex. 2c Australian National	19	26	26
18		Health and Medical Research			
		Council (2015) - Systematic			
19		Review of the Human Health			
		Effects of Wind Farms			
20	A4-3	Ex. 3 French National Agency	19	26	26
21		for Food Safety, Environment			
		and Labor 100 ("ANSES") (2017)			
22		ANSES Opinion regarding the			
		Expert Appraisal on the			
23		"Assessment of the Health			
		Effects of Low-Frequency			
		Sounds and Infrasonds from			
		Wind Farms"			
24	A4-4	Ex. 4 Wisconsin Wind Siting	19	26	26
25		Council (2014) - Wind Turbine			
		Siting - Health and Wind			
		Siting Policy Update			

1	<u>I N D E X (Continued)</u>				
2	APPLICANT'S EXHIBITS		M	O	R
3	A4-5	Ex. 5 Rand and Hoen (2017) -	19	26	26
4		Thirty Years of N. American			
5		Wind Energy Acceptance			
6		Research - What Have We			
7		Learned? Energy Analysis and			
8		Environmental Impacts Div.,			
9		Lawrence Berkeley Nat'l Lab.,			
10		Electricity Markets and			
11		Policy Group			
12	A4-6	Ex. 6 Public Service Comm. of	19	26	26
13		WI (2015) - Review of Studies			
14		and Literature Relating to			
15		Wind Turbines and Human			
16		Health - Prepared for the WI			
17		State Legislature			
18	A4-7	Ex. 7 MA Departments of	19	26	26
19		Environmental Protection and			
20		Public Health (2012) - Wind			
21		Turbine Health Impact Study -			
22		Report of the Independent			
23		Expert Panel			
24	A4-8	Ex. 8 Letter, Kim	19	26	26
25		Malsam-Rysdon, Secretary of			
26		Health, SD Department of			
27		Health (Oct. 13, 2017)			
28	A5	Roberts Rebuttal	19	26	26
29	A5-1	Ex. 1 Ministry for the	19	26	26
30		Environment, Climate and			
31		Energy of the Federal State			
32		of Baden-Wuerttemberg,			
33		Germany (2016)- Low-frequency			
34		Noise Incl. Infrasound from			
35		Wind Turbines and Other			
36		Sources - LUBW Landesanstalt			
37		Fur Umwelt, Messungen and			
38		Naturschutz Baden-Wuerttemberg			
39	A5-2	Ex. 2 Akira Shimada and Mimi	19	26	26
40		Nameki (2017) Evaluation of			
41		Wind Turbine Noise in Japan -			
42		Ministry of the Environment			
43		of Japan			
44	A5-3	Ex. 3 Danish Energy Agency	19	26	26
45		(2009) - Wind Turbines in			
46		Denmark			

1	<u>I N D E X (Continued)</u>				
2	APPLICANT'S EXHIBITS	M	O	R	
3	A5-4	Ex. 4 Frits van den Berg,	19	26	26
4		Public Health Service			
5		Amsterdam, and Irene van Kamp,			
6		National Institute for Public			
7		Health and the Environment			
8		(2017) - Health Effects			
9		Related to Wind Turbine Sound-			
10		Swiss Federal Office for the			
11		Environment			
12	A5-5	Ex. 5 Stephen Chiles (2010) -	19	26	26
13		A New Wind Farm Noise Standard			
14		for New Zealand, NZS 6808:2010			
15		Proceedings of 20th			
16		International Congress on			
17		Acoustics, ICA 2010			
18	A5-6	Ex. 6 Eja Pedersen, Hogskolan i	19	26	26
19		Halmstad (2003) - Noise			
20		Annoyance from Wind Turbines -			
21		A Review - Swedish			
22		Environmental Protection			
23		Agency			
24	A5-7	Ex. 7 Hitomi Kimura, Yoshinori	19	26	26
25		Momose, Hiroya Deguchi, and			
26		Nameki, Mimi (2016) -			
27		Investigation, Prediction, and			
28		Evaluation of Wind Turbine			
29		Noise in Japan - Ministry of			
30		the Environment of Japan			
31	A5-8	Ex. 8 C. Yan, K. Fu and W. Xu-	19	26	26
32		On Cuba, Diplomats, Ultrasound			
33		and Intermodulation Distortion			
34		University of Michigan Tech			
35		Report - March 1, 2018			
36	A5-9	Ex. 9 Crichton, F., Et Al.	19	26	26
37		(2014) The Link Between Health			
38		Complaints and Wind Turbines -			
39		Support for the Nocebo			
40		Expectations Hypothesis -			
41		Frontiers in Public Health			
42		2:220			
43	A5-10	Ex. 10 Enck, P., Et Al. "New	19	26	26
44		Insights into the Placebo and			
45		Nocebo Responses," Neuron			
46		(July 31, 2008) - Vol. 59,			
47		No. 2, pp. 195-206			

1	<u>I N D E X (Continued)</u>				
2	APPLICANT'S EXHIBITS	M	O	R	
3	A5-11	Ex. 11 Colloca, L.(2017) -	19	26	26
4		Nocebo Effects Can Make You			
5		Feed Pain - Negative			
6		Expectancies Derived From			
7		Features of Commercial Drugs			
8		Elicit Nocebo Effects -			
9		Science, 358(6359):44			
10	A6	Pawlowski Supplemental Direct	19	26	26
11	A6-1	Ex. 1 Resume	19	26	26
12	A6-2	Ex. 2 Example of a Federal	19	26	26
13		Aviation Administration (FAA)			
14		Determination of No Hazard for			
15		a Project Turbine Location			
16	A6-3	Ex. 3 Damon Direct	19	26	26
17	A7	Pawlowski Rebuttal	19	26	26
18	A8	Thorstad Direct	19	1173	1173
19	A9	Howell Direct	19	26	26
20	A9-1	Ex. 1 Curriculum Vitae	19	26	26
21	A10	Howell Rebuttal	19	474	475
22	A10-1	Ex. 1 Memorandum Regarding	19	474	475
23		Updated Modeling Results -			
24		Prevailing Wind Park			
25	A10-2	Ex. 2 Updated Sound Study	19	474	475
	A11	Pardo Supplemental Direct	19	26	26
	A11-1	Ex. 1 Statement of	19	26	26
		Qualifications			
	A11-2	Ex. 2 Decommissioning Cost	19	26	26
		Analysis			
	A12	Canty Direct	19	26	26
	A12-1	Ex. 1 Resume	19	26	26
	A13	Canty Supplemental Direct	19	26	26
	A13-1	Ex. 1 NTIA Correspondence	19	26	26
		regarding the Project, dated			
		June 7, 2018			
	A14	Canty Rebuttal	19	26	26
	A14-1	Ex. 1 Burns & McDonnell Memo,	19	26	26
		Potential House Field Review			
	A14-2	Ex. 2 Revised Layout	19	26	26
	A15	MaRous Supplemental Direct	19	26	26
	A15-1	Ex. 1 Statement of	19	26	26
		Qualifications & Aug. 10, '18			
		Market Impact Analysis			

1	<u>I N D E X (Continued)</u>				
2	APPLICANT'S EXHIBITS	M	O	R	
3	A15-2	Ex. 2 Brian Guerin,	19	26	26
4		Jason Moore, Jamie Stata, and			
5		Scott Bradfield (2012) -			
6		Impact of Industrial Wind			
7		Turbines on Residential			
8		Property Assessment in Ontario			
9		2012 Assessment Base Year			
10		Study - Municipal Property			
11		Assessment Corporation			
12	A15-3	Ex. 3 Jason Moore, Jamie Stata	19	26	26
13		and Scott Bradfield (2016) -			
14		Impact of Industrial Wind			
15		Turbines on Residential			
16		Property Assessment in Ontario			
17		2016 Assessment Base Year			
18		Study - Municipal Property			
19		Assessment Corporation			
20	A15-4	Ex. 4 Corey Lang and James	19	26	26
21		Opaluch (2013)- Effects of			
22		Wind Turbines on Property			
23		Values in Rhode Island -			
24		Environmental and Natural			
25		Resource Economics,			
26		University of Rhode Island			
27	A15-5	Ex. 5 Richard J. Vyn and Ryan	19	26	26
28		M. McCullough (2013) - The			
29		Effects of Wind Turbines on			
30		Property Values in Ontario -			
31		Does Public Perception Match			
32		Empirical Evidence?			
33		University of Guelph, Canada			
34	A15-6	Ex. 6 Carol Atkinson-Palombo	19	26	26
35		and Ben Hoen (2014) -			
36		Relationship Between Wind			
37		Turbines and Residential			
38		Property Values in Mass. -			
39		University of Connecticut and			
40		Lawrence Berkeley Nat'l Lab			
41	A15-7	Lawrence Surrebuttall	19	26	26
42	A16R	Revised MaRous Rebuttall	19	26	26
43	A17	Creech Rebuttall	19	26	26
44	A17-1	Ex. 1 Resume	19	26	26
45	A18	Ellenbogen Rebuttall	19	26	26
46	A18-1	Ex. 1 Statement of	19	26	26
47		Qualifications			

1	<u>I N D E X (Continued)</u>				
2	APPLICANT'S EXHIBITS	M	O	R	
3	A19 Applicant's Disclosure of Lay	19	26	26	
	Witnesses				
4	A20-1 Applicant's Responses to	19	26	26	
	Staff's Fifth Set of DRs				
5	A20-2 Applicant's Responses to	19	26	26	
	Staff's Sixth Set of DRs				
6	A21-1 Applicant's Responses to	19	26	26	
	Intervenors Gregg Hubner,				
7	Marsha Hubner, Paul				
8	Schoenfelder, and Lisa				
	Schoenfelder's First Set of				
	DRs				
9	A21-2 Applicant's Responses to	19	26	26	
	Intervenors Gregg Hubner,				
10	Marsha Hubner, Paul				
11	Schoenfelder, and Lisa				
	Schoenfelder's Second Set of				
	DRs				
12	A22-1 Intervenors Gregg Hubner,	19	26	26	
	Marsha Hubner, Paul				
13	Schoenfelder, and Lisa				
14	Schoenfelder's Responses to				
	Applicant's First Set of Data				
	Requests				
15	A22-2 Intervenors Gregg Hubner,	19	26	26	
	Marsha Hubner, Paul				
16	Schoenfelder, and Lisa				
17	Schoenfelder's Responses to				
	Applicant's Second Set of Data				
	Requests				
18	A22-3 Intervenors Gregg Hubner,	19	26	26	
	Marsha Hubner, Paul				
19	Schoenfelder, and Lisa				
20	Schoenfelder's Responses to				
	Applicant's Third Set of Data				
	Requests				
21	A23 Intervenor Sherman Fuerniss's	19	26	26	
	Responses to Applicant's First				
22	Set of Data Requests				
	A24 Intervenor Kelli Pazour's	19	26	26	
23	Responses to Applicant's First				
	Set of Data Requests				
24	A25 Intervenor Karen Jenkins's	19	26	26	
	Responses to Applicant's First				
25	Set of Data Requests				

I N D E X (Continued)

2	APPLICANT'S EXHIBITS	M	O	R
3	A27 Intervenor Fuerniss	19	26	26
4	Responses to Staff's Second			
5	Set of Data Requests			
6	A28 Intervenor Gregg Hubner,	19	26	26
7	Marsha Hubner, Paul			
8	Schoenfelder, and Lisa			
9	Schoenfelder's Responses to			
10	Staff's Second Set of Data			
11	Requests			
12	A29 Figure 10	19	26	26
13	A30 Applicant's Supplemental	19	26	26
14	Responses to Staff's Data			
15	Requests			
16	A31 Applicant's Updated	19	26	26
17	Responses to Intervenor DR			
18	A32 Permit Conditions Jointly	19	26	26
19	Proposed by Applicant and			
20	Staff			
21	A33 Applicant's Proposed	19	26	26
22	Conditions			
23	A34 Safety Manual Confidential	527	527	528
24	A35 Operating Manual	527	527	528
25	Confidential			
26	A36 Williams v. Invenergy, LLC,	986	986	986
27	2016 WL 1275990 (D. Oregon,			
28	April 28, 2016)			
29	A37 Ownership Structure of	1143	1143	1143
30	Prevailing Wind Park, LLC			
31	A38 Turbine Number Key	1141	1141	1141
32	A39 Michaud et al., Effects of	1174	1174	1174
33	Wind Turbine Noise on Self-			
34	Reported and Objective			
35	Measure of Sleep (2016)			
36	A40 Hearing and Vibrotactile	1174	1174	1174
37	Thresholds Table			
38	A41 Rueter v. Osceola Windpower	1056	1056	1056
39	LLC, Case No. 16-2088			
40	(Iowa Ct. App, Nov. 8, 2017			
41	A42 Distance from Each	1155	1155	1155
42	Residence to the Nearest			
43	Wind Turbine, Modeled			
44	Shadow Flicker and			
45	Sound Pressure Levels			



1	<u>I N D E X (Continued)</u>				
2	STAFF'S EXHIBITS		M	O	R
3	S1	Kearney Prefiled Testimony and Exhibits (Partial Confidential)	19	28	28
4	S3	Hessler Prefiled Testimony and Exhibit	19	28	28
5	S4	Additional Data Requests	19	28	28
6	S5	Additional Data Requests	19	28	28
7	INTERVENORS' EXHIBITS		M	O	R
8	I-1	Prefiled Testimony of James	19	797	797
9	I-1a	Ex. 1 Bio Materials	19	797	797
10	I-1b	Ex. 2 Noise - Wind Farms	19	797	797
11	I-1c	Ex. 3 A Possible Criterion for Wind Farms	19	797	797
12	I-1d	Ex. 4 A Theory to Explain Some Physiological Effects of the Infrasonic Emissions at Some Wind Farm Sites	19	797	797
13	I-1e	Ex. 5 Summary of Wind Turbine Blade Pass Frequency & Effects	19	797	797
14	I-1f	Ex. 6 Shirley Wind Study Infrasonic Graphs	19	797	797
15	I-2	Prefiled Testimony of Punch	19	1175	1176
16	I-2a	Ex. 1 Curriculum Vitae	19	1175	1176
17	I-2b	Ex. 2 Wind Turbine Noise and Human Health: A Four-Decade History of Evidence that Wind Turbines Pose Risks	19	1175	1176
18	I-4	Google Maps View of Vicki May's Residence and Turbines	19	29	29
19	I-6	Five videos taken by Vicki May on 9/25/18 around her residence (Exhibits 1-6a through 1-6e)	19	1175	1176
20	I-6a	May Video 1	19	1175	1176
21	I-6b	Vicki May Video 2	19	1175	1176
22	I-6c	Vicki May Video 3	19	1175	1176
23	I-6d	Vicki May Video 4	19	1175	1176
24	I-6e	Vicki May Video 5	19	1175	1176
25	I-8	Google Maps View of Scott Rueter's Former Residence (1341 Yew Ave., Harris, IA) and Turbines	19	29	29

1	<u>I N D E X (Continued)</u>				
2	INTERVENORS' EXHIBITS	M	O	R	
3	I-10	Video of Malfunctioning Turbine	19	1175	1176
4		on Scott Rueter's Property			
5		(Section 21, Fairview Township,			
6		Osceola County, Iowa) taken on			
7		June 5, 2017			
8	I-11	Google Maps View of Sherm and	19	29	29
9		Lori Fuerniss Residence			
10	I-12	Photo of Malfunctioned/Burnt	19	1175	1176
11		Turbine on Scott Rueter's			
12		Property			
13	I-13	Google Maps View of Kevin	19	29	29
14		Andersh's Residence			
15	I-14	Bon Homme Co. Zoning Ordinance	19	29	29
16	I-15	GE Publication - Ice Shedding	19	532	532
17		and Ice Throw Risk & Mitigation			
18	I-16	Lease Payment Calculations and	19	29	29
19		Land Use Area - Provided to			
20		Gregg Hubner to Entice Him to			
21		Sign Up for the Project			
22	I-17	Wind Energy Lease and Wind	19	29	29
23		Easement Agreement - Blank Form			
24	I-18	sPower Brochure	19	29	29
25	I-21	Google Earth - Beethoven & PWP	19	29	29
	I-22	8/22/18 Letter from Charles Mix	19	29	29
		Co. Along with Affidavit of			
		Peter Pawlowski			
	I-23	PUC Draft Model Ordinance	19	674	674
	I-26	Applicant's Responses to	19	29	29
		Intervenors' First Set of DRs			
	I-27	Applicant's Responses to	19	29	29
		Intervenors' Second Set of DRs			
	I-28	Applicant's Responses to	19	29	29
		Intervenors' Third Set of DRs			
	I-29	Applicant's Responses to	19	29	29
		Intervenors' Fourth Set of DRs			
	I-30	PUC Staff's Responses to	19	29	29
		Intervenors' First Set of DRs			
	I-31	WHO Night Noise Guidelines for	19	29	29
		Europe (2009)			
	I-32	Guidelines for Community Noise	19	29	29
		(1999)			
	I-33	The Environment and Disease -	19	29	29
		Association or Causation?			
	I-34	Intervenors' Responses to	19	29	29
		Staff's Second Set of DRs			

1	<u>I N D E X (Continued)</u>				
2	INTERVENORS' EXHIBITS		M	O	R
3	I-35	Wind Turbines - Is There A			
4		Human Health Risk?			
5	I-36	12/12/24 Team Report from	749	749	749
6		Wis. PSC Infrasound Study at			
7		Shirley Wind			
8	I-37	Hessler Publication - Wind	756	756	756
9		Turbine Noise - Recommended			
10		Design Goals			
11	I-38	List of Landowners with	966	966	966
12		Turbines			
13	FUERNISS'S EXHIBITS		M	O	R
14	Sherm 1	Dr. Visit 1	19	31	31
15	Sherm 2	Dr. Visit 2	19	31	31
16	Sherm 3	PV Map 4-2018 Red on Green 1	19	31	31
17	Sherm 4	PV Map 4-2018 Red on Green 2	19	31	31
18	Sherm 12	Staff's First Set of Data	19	31	31
19		Requests to Sherman Fuerniss			
20	Sherm 13	Staff's Second Set of Data	19	31	31
21		Requests to Sherman Fuerniss			
22	Sherm 14	Applicant's First Set of	19	31	31
23		Data Requests to Intervenor			
24		Sherman Fuerniss			
25	JENKINS'S EXHIBITS		M	O	R
26	KJ4	SD GF&P's Siting Guidelines	19	34	34
27		for Wind Power Projects in			
28		South Dakota			
29	KJ5	Responses to Applicant's	19	34	34
30		First Set of Data Requests			
31		to Intervenor			
32	KJ6	Amended Response to Staff's	19	34	34
33		First Set of Data Requests			
34		to Intervenor			
35	KJ15	Response to Staff's First	19	34	34
36		Set of Data Requests to			
37		Intervenor			

1           The following transcript of proceedings was  
2 held in the above-entitled matter at the South Dakota  
3 State Capitol Building, 500 East Capitol Avenue, Pierre,  
4 South Dakota, on the 10th day of October, 2018,  
5 commencing at 8:30 a.m.

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1 MR. DE HUECK: Good morning, everyone. My name  
2 is Adam de Hueck. I am the Hearing Examiner for  
3 EL18-026, in the matter of Prevailing Wind Park, LLC for  
4 a wind energy permit.

5 We are on day two, and we're in the middle of  
6 Prevailing Wind's direct case. Dr. Ellenbogen, you may  
7 take the stand again, and we'll pick up where we left  
8 off, which is cross-examination.

9 And, Dr. Ellenbogen, I'll remind you you're  
10 still under oath this morning from yesterday.

11 And, Mr. Almond, you may proceed with your  
12 cross-examination.

13 CROSS-EXAMINATION

14 BY MR. ALMOND:

15 Q. Good morning, Doctor.

16 A. Good morning.

17 Q. I believe you have your Rebuttal Testimony in front  
18 of you, and that's Exhibit A-18, just so if you need to  
19 reference it during this cross-examination it's readily  
20 available to you.

21 But first I want to talk about talking about this  
22 misattribution discussion that you talked about during  
23 your direct exam with Ms. Agrimonti. If you would just  
24 briefly summarize that misattribution theory that you  
25 have.

1 A. Do you mean in general or specific to that person?

2 Q. No. In general. Yes. In general.

3 A. Yeah. Thank you for that opportunity to clarify.

4 So the concept of misattribution is this. I have a  
5 concern, a medical problem and a symptom. And what I do  
6 with that symptom is I seek out understanding about what  
7 that symptom is and, therefore, can get at the root  
8 cause, and by getting at the root cause I can, therefore,  
9 get at the root treatment or intervention.

10 Misattribution is when one takes -- ignores common  
11 frequent or dangerous problems and instead puts the  
12 causal relationship to something that is either unlikely  
13 or not at all capable of causing that problem.

14 As a consequence of that, they focus on that second  
15 thing and miss out on the opportunity to engage with  
16 their care providers appropriately so that the  
17 appropriate diagnosis can be evaluated and ultimately  
18 treated.

19 Q. And as that applies to this proceeding, it's your  
20 opinion that -- or at least with respect to the four  
21 individuals you performed independent medical evaluations  
22 on, your opinion was that those four individuals,  
23 although they were explaining about health effects that  
24 they believed were caused by wind turbines, they were  
25 misattributing those health effects to wind turbines when

1 in reality they were caused by something else?

2 A. Yes.

3 Q. Are you familiar with the term IME, independent  
4 medical examination?

5 A. Yes.

6 Q. Okay. So if I refer to it as an IME, I just -- so  
7 you performed four IMEs. When were those performed?

8 A. Several years ago. I think it was 2014.

9 Q. And those four people I believe in your testimony  
10 you said started a lawsuit against a wind farm owner?

11 A. I don't recall the details of the lawsuit. I do  
12 recall that the company asked me to come and evaluate  
13 them because of the nature of their complaints.

14 Q. But there was a pending lawsuit?

15 A. I don't know.

16 Q. I thought I read in your testimony you referenced it  
17 was a lawsuit.

18 A. I presume it was. I don't know why there would be  
19 lawyers involved at all, but I didn't get into what their  
20 lawsuit was. I hadn't read it. They asked me to come  
21 out and evaluate these four people.

22 Q. Okay. And also in your Rebuttal Testimony I believe  
23 you referenced that shortly after the evaluations that  
24 the matter settled.

25 A. I was told that it was settled. I don't know the

1 details of that settlement.

2 Q. Okay. So the owner of a wind farm hired you to come  
3 perform IMEs on four individuals; correct?

4 A. Correct.

5 Q. And the reason for that was to essentially discredit  
6 their health complaints and the cause thereof; right?

7 A. No.

8 Q. So explain where I'm wrong.

9 A. Actually the company approached me and said we don't  
10 know what's happening here, and we would like you to come  
11 make -- the "I" for IME is independent -- an independent  
12 medical evaluation. And that's what I did.

13 Q. And before you performed that independent medical  
14 evaluation did you have discussions with those lawyers  
15 about your general opinions on whether or not wind  
16 turbines cause negative health effects?

17 A. Not to my recollection, no.

18 Q. Because I do quite a bit of defense litigation, and  
19 I've hired my fair share of doctors to perform IMEs. Do  
20 you think you would have been hired if those attorneys  
21 would have believed that you would have given an adverse  
22 opinion to them?

23 A. I really couldn't speculate on the hiring process.

24 Q. Okay. But based off of your review of those four  
25 individuals, you believe that -- maybe I'll ask you this.



1           Based off your review of those four individuals, you  
2 believe that every individual who has claimed they're  
3 experiencing negative health effects caused by wind  
4 turbines is just misattributing the cause of those health  
5 effects?

6       A.    No.

7       Q.    So some individuals when they're complaining about  
8 the cause of negative health effects and they attribute  
9 it to wind farms are accurate?

10      A.    In infrequent cases I suppose that's possible. I  
11 have not encountered one.

12      Q.    Have you ever provided any testimony adverse to a  
13 wind company?

14      A.    Can you help me understand what you mean by that?

15      Q.    You're testifying here in this proceeding. I assume  
16 you've testified in other proceedings, whether in  
17 litigation, public, you know, commission proceedings like  
18 this.

19           Have you ever offered testimony that's adverse to a  
20 wind company?

21      A.    I think every time I've offered testimony that is  
22 independent, and I let the triers of fact decide whether  
23 it's adverse or not. I have not received sort of  
24 judgment as to whether my independent opinion is adverse  
25 or not.

1 Q. And speaking of you -- you're offering an  
2 independent opinion here today or in this matter?

3 A. Yes.

4 Q. How much is sPower getting charged for your  
5 testimony today?

6 A. It's an hourly rate.

7 Q. How much did you say?

8 A. 500.

9 Q. \$500 an hour?

10 A. Yes, sir.

11 Q. And in your direct you referenced a Massachusetts  
12 study that you were part of; correct?

13 A. Yes.

14 Q. And that's to your right, I believe. The binder  
15 right -- A4-7. Is that the Massachusetts study?

16 A. Yes.

17 Q. Okay. So that's there if you need to reference that  
18 at any point.

19 A. Thank you.

20 Q. Other than that Massachusetts study, have you  
21 published any papers on whether noise generated from wind  
22 turbines cause a sleep disturbance?

23 A. No.

24 Q. What about more generally have you published any  
25 paper study on whether wind turbines can cause adverse

1 health effects?

2 A. No.

3 Q. So now I want to talk about the Massachusetts study.  
4 Was that peer reviewed?

5 A. It was not.

6 Q. And am I correct in saying that that study was  
7 commissioned to determine the potential impact of wind  
8 turbines on human health?

9 A. Yes.

10 Q. And that the study was done based upon a review of  
11 the literature that existed at the time; correct?

12 A. Correct.

13 Q. So the panel didn't conduct any experiments?

14 A. That's correct.

15 Q. And didn't conduct any field tests?

16 A. Correct.

17 Q. Did it collect any new data from individuals living  
18 around wind farms?

19 A. We were solicited by the Department of Environmental  
20 Protection and Department of Public Health from the  
21 Commonwealth of Massachusetts to both evaluate the  
22 existing literature and to receive verbal and written  
23 comments by people who had concern.

24 So in that sense we collected new data, but it was  
25 not formalized.

1 Q. And did the panel interview any individuals that  
2 were claiming to experience negative health effects?

3 A. No.

4 Q. So as far as the material that the panel actually  
5 analyzed, that study didn't consider any turbines as  
6 large as those being proposed for this project, did it?

7 A. I don't recall the size. It would have been the  
8 size of turbines, I guess, at the time of the publication  
9 of 2012.

10 Q. If you could turn to page 9 of A4-7, please.

11 If you go to the bottom of that page -- first, is  
12 that page 2 of the report?

13 A. Yes. 2. Yes, sir.

14 Q. I need to make sure we're on the same page. We had  
15 an issue with that yesterday so.

16 A. Thank you.

17 Q. If you go to the bottom there the very last sentence  
18 there, it talks about the report and the focus being on  
19 land-based installations. And if you continue reading on  
20 to page 10, it looks like the largest turbine that was  
21 considered for purposes of this report would have been  
22 3 megawatts.

23 Is that how you read that sentence?

24 A. Yes.

25 Q. And the turbines that are being proposed for this

1 project are 3.8 megawatts. Are you aware of that?

2 A. I am not.

3 Q. Okay. Do you think the size of the turbine -- are  
4 you able to provide any opinion on whether or not the  
5 size of the turbine generates more or less noise?

6 A. I am not.

7 Q. Okay. If a larger turbine is going to generate more  
8 noise --

9 A. I think I just said I'm not.

10 Q. If a turbine's going to generate more noise, is  
11 there a greater potential that it will impact human  
12 health?

13 A. Yes.

14 Q. Would you agree that the noise generated by turbines  
15 can cause sleep disruption?

16 A. I think I'd like to have a fuller response than a  
17 yes/no, if I may.

18 Q. And Ms. Agrimonti can redirect you. She'll have the  
19 opportunity to ask you further clarifying questions or if  
20 you wanted to expand.

21 But you'd agree that wind turbine noise can cause  
22 sleep disturbance; right?

23 A. Yes.

24 Q. And if it's loud enough, it's going to disturb your  
25 sleep.

1 A. Yes.

2 Q. And in your Rebuttal Testimony I think I read --  
3 feel free to check, but provided it's under 50 dBA, your  
4 opinion is that wind turbine noise will not cause sleep  
5 disturbance?

6 A. My opinion here -- and maybe you can direct me to  
7 that specific line.

8 My opinion here is that the levels that we're  
9 discussing today are unlikely, very unlikely, to cause  
10 any sleep disturbance.

11 Q. And what levels are we discussing today?

12 A. Less than 45 dBA, I believe.

13 Q. So is it your opinion that noise less than 45 dBA  
14 will not cause sleep disturbance?

15 A. Yes.

16 Q. Turn to page 10 of your Rebuttal Testimony for me,  
17 please, line 284. Are you there?

18 A. Yes.

19 Q. Your testimony states, "But the levels of the  
20 project below 50 dBA are well within my expectation that  
21 sleep will not be disturbed."

22 That's where I was getting the 50 dBA. Is it your  
23 opinion that anything less than 50 dBA will not cause  
24 sleep disruption?

25 A. It probably would be best stated at 45, but I

1     probably -- if I were just left to my own independent of  
2     this project, the opinion that I would render is we know  
3     that up to 46 dBA is -- does not cause sleep disturbance,  
4     and what level above that is unknown.

5     Q.    Are you able to point me to any peer-reviewed  
6     studies that have said noise levels at 50 dBA will not  
7     cause sleep disruption?

8     A.    No.

9     Q.    How about at 45 dBA?  Are you able to point to a  
10    peer-reviewed study that says noise levels at dBA will  
11    not cause sleep disruption?

12    A.    Yes.

13    Q.    And what peer-reviewed study is that?

14    A.    That would be the study by David Michaud and Health  
15    Canada, 2016.

16    Q.    Did you cite that study in your Rebuttal Testimony?

17    A.    I don't recall whether I did or did not.  I probably  
18    did.

19    Q.    You certainly didn't attach it to your testimony,  
20    did you?

21    A.    I don't recall attaching a study to my testimony,  
22    no.

23    Q.    Who impaneled this Massachusetts panel?

24    A.    It was the Commissioners for the Department of  
25    Public Health and the Department of Environmental

1 Protection from the Commonwealth of Massachusetts.

2 Q. It was the State of Massachusetts that --  
3 effectively?

4 A. Yes.

5 Q. Those entities of the State of Massachusetts?

6 A. Yes.

7 Q. So I guess the obvious question is the State of  
8 Massachusetts impanels these experts to study this issue.  
9 What are the noise restrictions in the state of  
10 Massachusetts?

11 A. I don't know.

12 Q. Okay. Stepping away from the Massachusetts study,  
13 in your Rebuttal Testimony you reference other studies  
14 support the conclusions drawn in the Massachusetts study,  
15 but you didn't name them.

16 What other studies are you referring to?

17 A. The Massachusetts study was extensive, and there  
18 were many different findings. Can you point to one of  
19 the findings that you're referring to? I can try to --

20 For example, if we were talking about sleep, I would  
21 reference that paper by David Michaud that I just  
22 mentioned.

23 Q. And, to be fair, I found where you reference that  
24 study on page 6 of your report. It looks like you  
25 dropped a footnote in there, the David Michaud -- I'll



1 let you pronounce it.

2 A. Michaud. I could be wrong too. It's French  
3 Canadian.

4 Q. And that's M-I-C-H-A-U-D.

5 A. Thanks for letting me off the hook for that one.

6 Q. So these other studies that support your opinion  
7 that wind turbines or noise generated from wind turbines  
8 will not cause an interference or will not cause sleep  
9 disruption, do you know what the parameters were for the  
10 wind farms that were being analyzed in those studies in  
11 terms of noise regulations?

12 A. I'm not sure I understand the question. What were  
13 the regulations surrounding the context of each of those  
14 studies?

15 Q. Yeah.

16 A. Oh. I couldn't possibly name the regulation of  
17 dozens of different studies that have looked at this.  
18 But what I was looking for was what sound pressure levels  
19 were the people being exposed to, what findings were  
20 being reported and -- for the quality of that  
21 investigation.

22 Q. Isn't it true that sound levels above 40 dBA you  
23 find increasing complaints of annoyance and sleep  
24 disruption?

25 A. There are some studies that report increasing

1 annoyance at levels above 40 dBA. To my recollection,  
2 most, if not all of those, have been demonstrated to be  
3 compounded by either the sight or the attitude toward the  
4 turbine, that the annoyance is a broader annoyance than  
5 the dBA level, per se.

6 Q. And sleep disruption, are you aware of studies that  
7 indicate that as the sound levels get above 40 dBA you  
8 start finding increased complaints of sleep disruption?

9 A. No. In the Health Canada Study that I'm mentioning  
10 there was not an increase in the subjective reporting of  
11 sleep disturbance as the dBA got higher level, nor was  
12 there objective evidence of sleep disturbance at the  
13 higher level.

14 Q. All right. You sat on this Massachusetts panel, and  
15 you guys reviewed a lot of literature out there; correct?

16 A. Yes.

17 Q. And the question is are you aware of literature that  
18 says after 40 dBA -- or above 40 dBA you start finding  
19 increases in complaints of sleep disruption?

20 MS. AGRIMONTI: Objection. Asked and answered.

21 MR. ALMOND: He didn't answer the question.

22 MR. DE HUECK: Specific to complaints. Go ahead  
23 and answer.

24 A. Well, what I would say is that at the time that this  
25 panel was investigating the literature there were some

1 studies, and we reviewed them, that as sound pressure  
2 levels got higher that the complaints became higher for  
3 annoyance.

4 When we sort of dug into them we found that most of  
5 those had to do with either the sight or the attitude,  
6 meaning the feeling that one has toward wind and that it  
7 was related to the dBA level but that dBA level was  
8 better explained by people's feelings about wind turbines  
9 over all.

10 And then in follow-up to that, the more recent, much  
11 larger, more rigorous study from Health Canada of over  
12 1,000 people studying both subjective and objective  
13 measures of sleep showed no relationship at all over  
14 40 dBA and up until their level of 46 dBA --

15 (Discussion off the record.)

16 A. 46 dBA showed no effect on sleep both objectively  
17 and subjectively.

18 Q. And again you referred to annoyance.

19 The question was about sleep disturbance, and the  
20 only question you studied about sleep disturbance was  
21 Health Canada.

22 So the question is are you aware of literature aside  
23 from Health Canada in the scientific community that  
24 indicates complaints of sleep disturbances increased  
25 above 40 dBA?

1 MS. AGRIMONTI: The witness answered this at the  
2 beginning of the questioning. I don't know if we need to  
3 go back in the transcript but --

4 MR. DE HUECK: Yep. Sustained. I agree he did  
5 answer the question.

6 MR. ALMOND: May we go back in the transcript  
7 and see if he answered the question.

8 (Reporter reads back the last answer.)

9 MR. DE HUECK: I believe the question's been  
10 answered.

11 CHAIRWOMAN FIEGEN: Mr. de Hueck, could he  
12 repeat the question so I can understand if it was  
13 answered?

14 MR. DE HUECK: You bet.

15 Q. The question is I know you referenced the Health  
16 Canada Study, but I'm wondering if you're aware of any  
17 scientific studies that suggest that the complaints of  
18 sleep disturbance increases at sound levels above 45 dBA?

19 CHAIRWOMAN FIEGEN: I personally don't -- I  
20 think he answered the Massachusetts question.

21 MR. DE HUECK: Go ahead and try again.

22 A. Yes.

23 Q. You are aware of some studies?

24 A. I'm going to say yes again.

25 Q. Now if I understand your opinions, it's that wind

1 turbines do not have a direct and negative effect on  
2 human health. Is that a fair summary of your opinion?

3 A. I would say -- I would qualify that to say at the  
4 levels that we're discussing here. I mean, if --

5 Q. And would you agree that there are experts in the  
6 subject matter that disagree with your opinion?

7 A. Yes.

8 Q. Why don't you turn to Exhibit A4-4 for me, please.  
9 And it might be in the binder that's opened up there on  
10 the desk.

11 A. Yeah.

12 Q. And this was an exhibit that your colleague  
13 Dr. Roberts attached to his testimony, and it's a  
14 Wisconsin Wind Siting Council document.

15 Have you reviewed that document?

16 A. I have not.

17 Q. So this was a study conducted in Wisconsin that  
18 was -- if you look at the first page there, when was that  
19 conducted? I think if you go to page 1 of the exhibit,  
20 it will tell you the date.

21 A. It says here October 2014.

22 Q. So it was printed after the Massachusetts study;  
23 right?

24 A. Yes.

25 Q. And the benefit of your guys' findings in the

1 Massachusetts study when they -- when the Wisconsin Wind  
2 Siting Council drafted this document; right?

3 A. I don't know if they read the Massachusetts study or  
4 not, but they would have had access to it, sure.

5 Q. Can you just flip quickly to page 59 of this exhibit  
6 for me. Well, actually first go to 58.

7 Are you on page 58?

8 A. Yes.

9 Q. You see the section heading 3.4, Majority Survey  
10 Conclusions and the Minority Response?

11 A. Yes.

12 Q. You're familiar with how these panels and studies  
13 work. Is it fair to say that this section here is  
14 talking about what the majority all kind of concluded and  
15 if the minority had any differing views, they could  
16 insert that either in this section or the following  
17 section?

18 A. It's really hard to speculate on a document I've  
19 never read before, but I'll take your word for it.

20 Q. Okay. Let's go to the end of that Section 3.4,  
21 which is on page 59.

22 Are you on page 59?

23 A. Yes.

24 Q. And the last paragraph there, the last sentence  
25 actually of that Section 3.4, following along as I read

1 it.

2 "In their final conclusion the council minority and  
3 many subject experts disagree with the council majority  
4 and believe there is sufficient data to infer that wind  
5 turbines have a direct and negative effect on human  
6 health, based on their survey of applicable literature."

7 So you disagree with that conclusion of the minority  
8 and the many experts referenced in there; correct?

9 A. I strongly disagree with them.

10 Q. Okay. And then go under 3.5, the minority's  
11 conclusion. That first paragraph there, follow along  
12 while I read that.

13 "The overwhelming empirical evidence from the  
14 peer-reviewed literature surveyed by the council shows  
15 that when certain people are near operating wind turbines  
16 they become ill, but when the turbines stop their  
17 conditions subside. Regardless of the reasons why, the  
18 law regulating the siting of turbines must protect the  
19 human rights and well-being of those living nearby and  
20 provide protection for innocent populations who are  
21 harmed by wind turbines sited too close to their homes  
22 even if the mechanism of harm is not fully understood."

23 Do you agree with the positions of that paragraph?

24 A. I would phrase my position differently, and I would  
25 take offense to the idea that regardless of the reason

1     why. I think the reason why is everything here.

2             For example, if the reason why someone is having  
3     difficulty around a wind turbine is because they read  
4     inappropriate or misinformed literature about serious  
5     health effects, I would say that the cause would be the  
6     literature, not the wind turbine, and that would not, in  
7     turn, be cause to turn the turbines off. It would be  
8     cause to have more appropriate science to --

9     Q. So we're back to the -- are you back to relying on  
10    the claim that all these people that are complaining  
11    around the nation, around the world are just  
12    misattributing their complaints to something else?

13    A. I would agree with everything there except the  
14    "just" part. I think it's a very serious problem.

15             MR. ALMOND: No further questions.

16             MR. DE HUECK: Mr. Fuerniss.

17                             CROSS-EXAMINATION

18    BY MR. FUERNISS:

19    Q. Just one question, Doctor. How many years  
20    experience do you have living within two years of an  
21    operational wind farm?

22    A. None.

23             MR. DE HUECK: Ms. Jenkins.

24             MS. JENKINS: No questions.

25             MR. DE HUECK: Ms. Pazour.



CROSS-EXAMINATION

BY MS. PAZOUR:

Q. Have you ever done any studies with children?

A. I mean, I've done clinical studies with children.  
Do you mean published literature on wind turbines?

Q. Yes.

A. No.

MS. PAZOUR: Thank you.

MR. DE HUECK: Commission questions.

Oh, jeez. Starting the morning off.

Staff.

MS. EDWARDS: That's all right.

CROSS-EXAMINATION

BY MS. EDWARDS:

Q. Dr. Ellenbogen, yesterday you gave an exhaustive  
list of things that can cause vertigo; correct?

A. Yes. I wouldn't call it exhaustive. There's a much  
longer list, but it was just kind of giving a flavor in  
categories, yes.

Q. Can stress cause vertigo?

A. Anxiety is a known cause of vertigo. The mechanism  
is felt to be related to hyperventilation that occurs in  
the change in carbon dioxide and pH of the blood, and  
that can lead to a sense of lightheadedness and possibly  
vertigo.

1 Q. Thank you.

2 A. Yes.

3 Q. Would you agree that there have been circumstances  
4 where the generally accepted opinion turned out to be  
5 dangerously wrong?

6 A. With regard to wind turbines or ever in general?

7 Q. Medical studies in general.

8 A. Sure. Many times.

9 Q. So how can we be sure that this so-called wind  
10 turbine syndrome isn't the next opioid crisis or tobacco  
11 revelation?

12 A. With respect to that question, I deal a lot with  
13 people who have emphysema, lung cancer, who die in the  
14 streets -- I'm a firefighter -- from opioid overdose. To  
15 relate that to a very quiet noise coming from a wind  
16 turbine is very hard to hear and take seriously.

17 This is a very quiet sound coming from an instrument  
18 quite far away. And the idea that it would somehow  
19 relate to a serious health crisis of the kind that you've  
20 spoken of is -- to me is really not possible.

21 Q. So your opinion is this is not and could not be a  
22 serious health crisis?

23 A. Yes.

24 Q. Thank you.

25 Yesterday you also elaborated on an individual from

1 your independent study that you determined suffered from  
2 alcoholism; correct?

3 A. Yes.

4 Q. In your written testimony you stated that he had a  
5 substantial alcohol problem; right?

6 A. I don't remember the exact language. I could look  
7 back to it.

8 Q. How would you characterize a substantial alcohol  
9 problem?

10 A. I think for the purposes of that case, which I think  
11 is why you're bringing it up, the relevant issue isn't  
12 whether it's abuse or a problem. It's merely a quantity  
13 of consumption.

14 Alcohol in very mild quantity is not known to cause  
15 any problem, but at very serious blood alcohol  
16 concentrations chronically is known to be toxic to  
17 nerves. And he was well within that range for a long  
18 period of time.

19 Q. What's that range?

20 A. I think he was drinking a case of beer a day or so,  
21 if I recall correctly. I don't know what the kind of  
22 lower bound of that is, but I know he's crossed it  
23 substantially.

24 Q. Okay. Were you able to discern from your evaluation  
25 of that gentleman which came first, the drinking or the

1 wind turbines?

2 A. Oh, the drinking was a decades-long problem, I  
3 believe.

4 Q. Okay. Are you familiar with Mr. Steven Cooper?

5 A. No, ma'am.

6 Q. You haven't read any of his studies?

7 A. That name is not familiar to me at all.

8 Q. Okay. So would you disagree that there's a possible  
9 pathway for humans to detect low frequent infrasound?

10 A. I'm sorry. I got distracted for a second. Could  
11 you repeat the question?

12 Q. I should probably phrase it better as well. Double  
13 negatives there.

14 Is there a possible pathway for humans to detect low  
15 frequency infrasound?

16 A. Yes.

17 Q. And if a person could detect low frequency sound,  
18 could that disrupt their sleep?

19 A. Yes.

20 MS. EDWARDS: I have no further questions.  
21 Thank you, Doctor.

22 MR. DE HUECK: Commission questions. And I'll  
23 start down at the end with Chair Fiegen.

24 We'll start with Chris.

25 COMMISSIONER NELSON: Good morning. Thanks for

1 being here.

2 In your written testimony you talk just briefly  
3 about infrasound, and it appears that as part of the  
4 Massachusetts study you went through and looked at  
5 literature and really couldn't find any evidence that  
6 infrasound caused any difficulties; is that correct?

7 THE WITNESS: Yes.

8 COMMISSIONER NELSON: So my question is, as a  
9 physician, have you had any personal experience treating  
10 anybody that claimed infrasound causation?

11 THE WITNESS: I personally have never in my  
12 entire career had someone come to me and say I have  
13 concerns about infrasound exposure, no.

14 COMMISSIONER NELSON: And so then going back to  
15 Ms. Edwards's question, could infrasound create health  
16 issues? I mean, you answered in the affirmative. So how  
17 and at what levels could that occur?

18 THE WITNESS: I'm grateful for the chance to  
19 qualify my answer because the mechanism would have to be  
20 that it would be of extraordinary energy. And we call it  
21 infrasound, but actually if --

22 It's infrasound because we usually don't hear  
23 it. But if you had sound pressure levels exceeding 110,  
24 140 decibels in the very low frequency range, even the  
25 infrasound, you will begin to feel it. It will have

1 pain. You will even potentially hear it, but it would be  
2 extraordinary.

3 Like some of the veterans that I deal with who  
4 have had blast injuries, that kind of thing. Those are  
5 sound pressure waves, but those are of extraordinary  
6 energy.

7 COMMISSIONER NELSON: Well, so my question was  
8 going to be can you quantify extraordinary energy?

9 THE WITNESS: There are actually really known  
10 curves that I would use as a threshold for perception at  
11 all, and that would be at levels -- orders of magnitude  
12 more than the wind turbines that we're discussing today.

13 COMMISSIONER NELSON: And you're talking about  
14 charts that relate specifically to infrasound?

15 THE WITNESS: Yes, sir.

16 COMMISSIONER NELSON: And I'm assuming that none  
17 of those have been attached to your testimony; correct?

18 THE WITNESS: They have not, but I could -- I  
19 could bring them to everyone's attention.

20 COMMISSIONER NELSON: I think that's all the  
21 questions I've got for now.

22 Thank you.

23 MR. DE HUECK: Chairman Fiegen.

24 CHAIRWOMAN FIEGEN: Welcome to South Dakota  
25 where it snows, rains. Maybe we'll have sunshine by the

1 end of the week.

2 THE WITNESS: I sent my daughter a picture. She  
3 can't believe it. She was in sunny Maryland this  
4 morning.

5 CHAIRWOMAN FIEGEN: So when I read your  
6 testimony -- you only submitted Rebuttal Testimony;  
7 correct?

8 THE WITNESS: Yes, ma'am.

9 CHAIRWOMAN FIEGEN: And it is 13 pages or  
10 whatever. I was surprised on page 10 when you were  
11 cross-examined on page 10 about the dBA of 50.

12 Did you -- did you personally write all of this  
13 testimony all by yourself?

14 THE WITNESS: I did.

15 CHAIRWOMAN FIEGEN: Okay.

16 THE WITNESS: I probably should have used 46 in  
17 that number.

18 CHAIRWOMAN FIEGEN: Okay. All right. Thank  
19 you.

20 COMMISSIONER HANSON: Good morning.

21 THE WITNESS: Good morning, sir.

22 COMMISSIONER HANSON: Excuse me.

23 Do I understand you correctly that, for  
24 instance, a child with -- well, adults too with ADHD, ADD  
25 is not likely to be affected by noise or flicker or --

1     anymore than anyone else would?

2             THE WITNESS: I don't have any reason to believe  
3     that they would be anymore affected than the general  
4     population, no.

5             COMMISSIONER HANSON: Have you ever worked with  
6     kids or adults, anyone with those challenges?

7             THE WITNESS: Both personally and  
8     professionally, yes.

9             COMMISSIONER HANSON: Okay. And you don't think  
10    that they would be anymore affected than anyone else?

11            THE WITNESS: Can you tell me what you mean by  
12    affected? Like will they notice it more or --

13            COMMISSIONER HANSON: Will it cause them to be  
14    more hyperactive? Will it cause them to have more  
15    challenges in behavioral settings, things of that nature?

16            THE WITNESS: I think at the levels that we're  
17    talking about for this project, I would say no.

18            COMMISSIONER HANSON: Okay. All right. That's  
19    the only question I had.

20            Thank you.

21            MR. DE HUECK: I had a quick question.

22            What was the word you used? Misattribution?

23            THE WITNESS: Yes, sir.

24            MR. DE HUECK: Is it the same thing as  
25    misself-diagnosing?



1 THE WITNESS: That sounds about right. I've  
2 never used that, either of those -- that sounds correct,  
3 yes.

4 May I qualify just one?

5 MR. DE HUECK: Yeah.

6 THE WITNESS: It's self-diagnosing, but it's  
7 also getting that information from other people. It  
8 could be the internet. It could be going to a  
9 professional who has been aware of the literature or  
10 something.

11 So it doesn't have to be self, but it is a --  
12 attributing the problem to the wrong cause basically and  
13 could be by the self.

14 MR. DE HUECK: Any redirect?

15 MS. AGRIMONTI: No.

16 MR. DE HUECK: Cross-examination based on  
17 Commission questions.

18 RECROSS-EXAMINATION

19 BY MR. ALMOND:

20 Q. I want to follow up on what Commission Nelson was  
21 asking you about.

22 You testified that extraordinary energy levels you  
23 might find adverse health effects in people; right?

24 A. Yes.

25 Q. Isn't it true that there are peer-reviewed

1 publications that indicate that infrasound at low energy  
2 levels can elicit physiological responses in the inner  
3 ear?

4 A. The only literature that I'm aware of is by  
5 Alex Salt on studies on guinea pigs, and he has reported  
6 that in peer-reviewed literature, yes.

7 Q. Well, we're certainly not going to experiment on  
8 humans, are we, when it comes to dangerous health  
9 effects?

10 A. I hope not.

11 MR. ALMOND: No further questions.

12 MR. DE HUECK: Mr. Fuerniss.

13 RECROSS-EXAMINATION

14 BY MR. FUERNISS:

15 Q. Again, following up on Commissioner Nelson's  
16 comments on infrasound, I have in front of me a reference  
17 to a Bowdler in 2015, The Sixth International Conference  
18 on Wind Turbine Noise in Glasgow. The idea that low  
19 frequency noise rather than infrasound could be the cause  
20 of complaints of excessive wind farm noise. And he  
21 states that this is worthy of serious consideration.

22 And he's also stating that some sensitized  
23 individuals' hearing will become sensitized to the point  
24 where they can actually hear the low frequency noises to  
25 as much as 12 decibels below what most people would hear.

1           Would you take that into consideration?

2       A.    I'd love to be able to evaluate that data about  
3       sensitization. I would like to offer some context to  
4       that.

5           The sound pressure levels -- the energy that I'm  
6       talking about and the document that I'll produce in  
7       reference to this low frequency curves of perception,  
8       they're extraordinarily high for a very wide range of the  
9       low frequency and so-called infrasound frequencies.

10          So even if someone were to become more sensitized --  
11       remember we're talking about energy on the vertical axis  
12       and frequency on the horizontal axis. So a sensitive  
13       person more sensitive to slightly lower frequencies like  
14       12 hertz, they're sliding along on the horizontal axis,  
15       but the vertical axis is still so high for all of that,  
16       way out of the range of the things that we're talking  
17       about, in the 100 plus decibel range, that even if they  
18       became more sensitized to 12 hertz, meaning of frequency  
19       that's lower, they would still be way out of range of the  
20       kinds of energy that we're talking about here today.

21       Q.    What kind of sound pressure level would you be  
22       expecting in, say, a distance of 3 kilometers from the  
23       source when it comes to the low frequency?

24       A.    Of wind turbines?

25       Q.    Yes.

1 A. I think that you're having the company's acoustician  
2 who's going to elaborate in great detail about this  
3 particular project.

4 Q. Okay.

5 A. What I can say is that in general -- and I believe  
6 I'm not stepping on his toes to say that he'll answer  
7 this in a very similar way -- there is a relationship, a  
8 known relationship, between energy levels in the very low  
9 frequency ranges, the low frequency in infrasound, to the  
10 dBA level.

11 There is a fixed relationship between them that one  
12 doesn't go without the other. In the same way that the  
13 left front wheel of my car doesn't roll without the right  
14 rear. They go together. They're coupled. And that  
15 ranges, I believe, about 15 or maybe up to 20 or so dB.

16 So the wind -- you know that the dBA level -- you  
17 know that the infrasound level is just a bit higher than  
18 that and not more, and it's still way out of range for  
19 the perception or concern for human health.

20 MR. FUERNISS: Okay. Thank you.

21 MR. DE HUECK: Ms. Jenkins.

22 MS. JENKINS: No questions.

23 MR. DE HUECK: Ms. Pazour.

24

25

RECROSS-EXAMINATION

BY MS. PAZOUR:

Q. I've got a couple for you.

Like with children, do they hear differently than adults?

A. They do.

Q. They do.

The other question I had for you is with a child with a hearing loss can that differate [sic] their hearing too?

A. Someone who had hearing loss would certainly have different hearing. Maybe I'm not understanding your question.

Q. Would it affect that ear more?

A. Would sound affect --

Q. Yes.

A. I think -- with a person who had hearing loss?

Q. Yes.

A. I would expect that sound would affect that ear less.

Q. Less or more?

A. A person with hearing loss --

Q. Yeah.

A. -- would have less hearing.

Q. The one that's good, would it affect that one --

1 A. Oh, I see.

2 No. I think that the normal ear would hear  
3 normally. I think that their brain may very thoughtfully  
4 adapt to that circumstance, but I don't think that they  
5 would hear at different sound pressure levels.

6 I think the thing that they would be different about  
7 is their local -- perception of localization and all the  
8 context that happens when sound hits one ear and then the  
9 other with different timing, things like that. But I  
10 don't think there would be any difference for sound  
11 pressure level or frequencies.

12 Q. What about sound waves?

13 A. Sound waves are the things that make up frequencies  
14 and pressure levels, and I think those would be the  
15 same.

16 Q. Okay.

17 MR. DE HUECK: Commissioner Nelson.

18 Staff, did you have any questions based on  
19 Commissioner questions?

20 MS. EDWARDS: Just briefly to follow up that  
21 last question.

22 RECROSS-EXAMINATION

23 BY MS. EDWARDS:

24 Q. What if the individual had one of those Baha hearing  
25 devices? Would it change how it affects that person?

1 A. I'm not familiar with the Baha hearing device. Is  
2 it like an amplifying --

3 Q. A bone adhering aid.

4 A. For people with hearing loss or --

5 Q. Correct.

6 A. And so the question is what about that?

7 Q. Could it affect that person differently?

8 A. Well, any device that a person puts on, if they were  
9 to -- if they dial up the gain, then sure. You know, if  
10 I have an over-the-counter or, for that matter,  
11 description hearing aid and I tune it to go higher, its  
12 purpose is to amplify sounds. So I get to kind of dial  
13 in or out so that I can hear things correctly.

14 Now someone who has a hearing aid or a device should  
15 specifically be tuning it to the dBA -- they typically  
16 tune to the frequencies of human voice. So, if anything,  
17 I think that they would probably have less perception of  
18 infrasound if that was part of the question. But they  
19 potentially could have more of dBA if they've tuned it up  
20 too much.

21 The goal of a hearing aid is to get one back to  
22 normal hearing. So if it's tuned correctly, I would  
23 think it would be no different at all, other than they  
24 would have a device-assisted hearing. If they were to  
25 tune it way up, then they would have more gain.

1 Q. So if I understand you correctly, they could address  
2 the problem by tuning differently if there was a problem?

3 A. Yes.

4 Q. Thank you.

5 Are there any medical conditions that could make a  
6 person more susceptible to infrasound at a lower level  
7 than the general population?

8 A. Not that I'm aware of, no.

9 MS. EDWARDS: Thank you. No further questions.

10 COMMISSIONER NELSON: Forgive me for asking a  
11 question from my position of very rudimentary  
12 understanding of all of this.

13 Relating back to the question that elicited your  
14 response about the test involving guinea pigs, we  
15 understand that animals, dogs, hear different frequencies  
16 than humans do. So how do we have any comfort that  
17 studies with guinea pigs would be analogous to what's  
18 actually happening with humans?

19 THE WITNESS: I actually don't have confidence  
20 that that study is relevant for this panel for two  
21 reasons. One, because of the animal comparison, and also  
22 because it was not about health effects. It was about  
23 perception.

24 COMMISSIONER NELSON: Okay. Thank you for that.

25 And the second question. I just want to make



1       sure I heard you correctly in your response talking about  
2       a fixed relationship between dBA and infrasound level.

3               And did I hear you correctly that the  
4       infrasound, that's a fixed relationship, and infrasound  
5       would be 15 to 20 decibels higher?

6               THE WITNESS:   Correct.

7               COMMISSIONER NELSON:   And that measurement is  
8       not -- of infrasound is not dBA, but it is dB what?

9               THE WITNESS:   You could just call it dB.   Some  
10       people refer to it as dB(G).

11               COMMISSIONER NELSON:   dB(G).

12               THE WITNESS:   This is sort of an acoustician's  
13       way of -- their lingo.   But dB(G) is probably the best  
14       way to characterize it.

15               You may also see it comes across as a one-third  
16       octave band, and they may name, say, between one hertz  
17       and 10 hertz or something.   But dB(G) would be the easy,  
18       most acceptable and most commonly used.

19               COMMISSIONER NELSON:   And so what I've heard --  
20       you testified that 45 dBA would not cause any health  
21       impacts.

22               And so, therefore, you're telling us that 60 to  
23       65 dB(G) would not cause any health impacts either; is  
24       that correct?

25               THE WITNESS:   That's correct.

1 COMMISSIONER NELSON: Thank you.

2 MR. DE HUECK: Chair Fiegen, Vice Chair Hanson,  
3 any questions?

4 Any redirect?

5 MS. AGRIMONTI: No.

6 MR. ALMOND: I have a question based off  
7 Commissioner Nelson's questions there.

8 RE CROSS-EXAMINATION

9 BY MR. ALMOND:

10 Q. Commissioner Nelson asked you about the guinea pig  
11 study in reference to different animals hear different  
12 sound levels; right?

13 The guinea pig study wasn't testing whether or not  
14 the guinea pigs actually heard the noise; right? They  
15 were talking about infrasound, which by its pretty much  
16 definition means it's unrelated to whether or not you  
17 actually hear the sound; right?

18 A. If I understood your question correctly, you were  
19 talking about -- you were asking me questions about  
20 health effects, and you asked me to say whether I knew of  
21 any -- I'm sorry.

22 Q. Focus on what Commissioner Nelson was asking you.

23 A. Please. Yeah.

24 Q. The guinea pig study, it wasn't measuring whether or  
25 not the guinea pigs heard the noise; correct?

1 A. That's correct.

2 Q. You can't ask a guinea pig whether or not they heard  
3 the noise.

4 A. You cannot. You can.

5 Q. It was actually looking at the physiological  
6 response that was elicited within the inner ear of a  
7 guinea pig due to the infrasound; right?

8 A. That's correct.

9 Q. Now do you have any reason to think that the inner  
10 ear of a guinea pig is any different than the inner ear  
11 of a human when it comes to whether or not the inner ear  
12 is going to elicit the same types of physiological  
13 responses to infrasound?

14 A. Yes.

15 Q. They are -- you believe they're different such that  
16 they're going to elicit different responses?

17 A. Yes.

18 Q. And how are they different?

19 A. I'm not an expert in the inner ear of the guinea pig  
20 so maybe I'm not the best involved to answer that.

21 I think there are a lot of differences between  
22 mammals, humans and guinea pigs in particular. And I  
23 would also add that I think that one needs to remember  
24 that beyond the nerve that is the sensory organ, even if  
25 the sensory organ were identical guinea pig to human,

1 everything that happens after that, the response to it,  
2 the brain mechanisms, the thalamus, the cortex, our  
3 psychological experiences, our physiological responses,  
4 are entirely different.

5 So I'm not aware that -- and I have reason to  
6 believe that a guinea pig's inner ear is not the same as  
7 a human, and I'm also absolutely certain that beyond  
8 inner ear there are major differences in such a way that  
9 I don't think that that study is really relevant or  
10 appropriate for this conversation.

11 Q. Maybe I'll ask just a simpler question. Is it your  
12 opinion that infrasound at low energy levels will not  
13 elicit any physiological response in the inner ear of a  
14 human?

15 A. Could you repeat that question. I'm sorry.

16 MR. ALMOND: Cheri, can you repeat that for me.

17 (Reporter reads back the last question.)

18 A. It is my opinion that it's unlikely to have any  
19 response in the inner ear to low energy levels of  
20 infrasound, yes.

21 MR. ALMOND: No other questions.

22 Q. Well, one other question.

23 Can you cite us to any peer-reviewed publication  
24 that concludes that?

25 A. Yes. I think so. I will -- can I get back to you

1 on that? That's an awkward thing to say in this context,  
2 but I'm not --

3 Let's put it this way: I'm not aware of any  
4 literature to support the idea that at low levels of  
5 energy in infrasound that the human ear has a response.

6 I don't think I could find literature that says that  
7 there is none. Usually literature says when there is  
8 something. But I can do my best to find that if I'm  
9 allowed to.

10 Q. But you are aware of literature that says low energy  
11 levels of infrasound elicits responses in guinea pig  
12 ears; right?

13 A. Yes.

14 Q. You're not an expert on guinea pig ears.

15 A. I'm not.

16 Q. But you seem to think that for some reason --

17 MR. ALMOND: Well, no further questions.

18 MR. DE HUECK: I'm about to let you step down,  
19 but I just have a quick question because we are talking  
20 about the guinea pigs.

21 And so there's this study and low invert sounds  
22 elicits a response, and that's been proven on guinea  
23 pigs. So is that harmful to the guinea pigs, or what's  
24 the deal with that study?

25 THE WITNESS: There was no description of any

1     harm. It was looking at whether the nerve has the  
2     capacity to sense that signal. But there was no harm  
3     shown by it.

4             MR. DE HUECK: Okay. Thanks.

5             You may step down. Thank you for your  
6     testimony.

7                     (The witness is excused.)

8             MR. DE HUECK: And, Prevailing Winds, you may  
9     call your next witness.

10            MS. SMITH: We would call Dustin Brandt.

11                    Dustin Brandt,  
12     called as a witness, being first duly sworn in the above  
13     cause, testified under oath as follows:

14                             DIRECT EXAMINATION

15     BY MS. SMITH:

16     Q. Can you state your name for the Commission.

17     A. Good morning. My name is --

18     Q. Get a little bit closer. There you go.

19     A. Good morning. My name is Dustin Brandt. I live at  
20     30049 407th Avenue, Avon, South Dakota. Before we get  
21     started, I'd just like to quickly thank you for taking  
22     the time to listen to both sides of this. I know you  
23     guys listen to a lot of people, so thank you.

24     Q. And are you a participating landowner in the  
25     Prevailing Wind project?

1 A. I am, yes.

2 Q. And where is your -- and if you'll look over,  
3 there's a map over there with an attachment that was  
4 provided with some DR responses.

5 Can you show the Commission where your property is  
6 and where your house is?

7 A. Right here (indicating).

8 Q. And you're kind of pointing down to the southern  
9 portion of the project area; is that correct?

10 A. Yes.

11 Q. And can you describe your property for the  
12 Commission?

13 A. So my property is -- there's 60 acres there. It  
14 consists of some farm ground, some pasture ground, and  
15 the home place -- or homestead. It's where we live. My  
16 wife and two kids live there also. We rent the farm  
17 ground to my brother who has sort of taken over the  
18 family farm, as my dad retired.

19 I have a regular job, I guess you would say. I do  
20 keep a small amount of livestock around there just to --  
21 to teach my kids where food comes from and give them some  
22 responsibilities.

23 Q. And do you have other family in the area as well?

24 A. I do. My brother lives just here (indicating).  
25 Just like a half-mile to the northeast of me.

1           My father lives about two miles south so that puts  
2 him out of the project area, but he does have ground in  
3 that vicinity.

4       Q.   And why did you decide to participate in this  
5 project?

6       A.   So I personally don't gain a lot by this project. I  
7 tried to look at the bigger picture of what it's going to  
8 do for our school, our town, our community, our county,  
9 and I think this is a win-win here so --

10           I could elaborate on that a lot more. I guess, I  
11 mean, if you look at what the wind -- the wind industry  
12 has already done for the community of Avon, it's very  
13 obvious. We have businesses on Main Street. We have  
14 kids in our school. It has had a positive impact  
15 already.

16       Q.   And are you -- do you have a turbine on your  
17 property?

18       A.   No, I do not. I guess I never assumed I would by  
19 any means. I'm kind of down in the valley, on more of a  
20 topographical map. Just never thought I would. I just  
21 figured if I would sign up my ground, maybe I would ease  
22 something with transmission lines or something of that  
23 nature.

24       Q.   And have you -- you signed up before Prevailing Wind  
25 Park was owned by sPower. Is that the case?



1 A. Correct.

2 Q. And have you had any contact with the current  
3 owners, and do you have a relationship with them?

4 A. Yes. We've gone to some landowner meetings to just  
5 keep us up to speed on the progress of the project and  
6 where -- how things were developing.

7 Q. Do you have any concerns about the project?

8 A. Any concerns that I've ever had were minor by  
9 comparison, and they have all been addressed. And I  
10 believe, you know -- from the development standpoint  
11 here, I believe they've gone above and beyond trying to  
12 get us far enough away from the shadow flicker and the  
13 noises and stuff. They've gone above and beyond the  
14 zoning setbacks, so to speak.

15 Q. Are you aware of any concerns others may have about  
16 the project in your area?

17 A. Yeah. There's always -- I'm aware others are  
18 concerned about it. Obviously, with a project of this  
19 magnitude, there should be some worry. There should be  
20 some concern.

21 People tend to be scared of change, but change tends  
22 to be a good thing in the long run. I know Mr. Hubner  
23 here in particular is concerned about the wind turbines  
24 that are going to be on my brother and my father's ground  
25 in relationship to the sunrise.

1           While he worries about that, my brother is going to  
2 cut down trees and add onto his house so he can see more  
3 of them. So it's a perspective kind of thing. You know,  
4 one person -- kind of like beauty. It's all in the eye  
5 of the beholder.

6 Q. You talked a little bit about the community and the  
7 effect. Can you explain a little bit more what you mean  
8 by the effect you think it will have on the community?

9 A. Yeah. If you put, so to speak, 10 families in  
10 Sioux Falls, it would be a drop in the bucket. Nobody  
11 would notice. But if you put 10 families in Avon, it's  
12 going to make a huge difference.

13           There's a lot of talk about the tax dollars. They  
14 go back into our school. And you can have all the tax  
15 dollars in the world. If you don't have students there,  
16 you're not going to have a school.

17           So what means more to me is the fact that these  
18 people are going to move here. Families are going to be  
19 here, work here, live here, go to school here.

20           The project itself opens doors. There's a lot of  
21 people in and around Avon that just sort of do the same  
22 thing that their dad did, that their grandpa did. And  
23 I'm not saying that -- that happens everywhere, I'm sure.  
24 But to a certain extent at a certain point when something  
25 like this comes to town it opens doors. It opens

1 windows. All the sudden they look around, and they see,  
2 wow, there's more to life, you know, than the factory  
3 down the road or the farm possibly.

4 There's a lot of jobs created and already created.  
5 They can look out and see there's a guy running an  
6 excavator. There's a guy -- somebody had to design this  
7 thing. Somebody had to build this thing, you know.  
8 There's lawyers and surveys, and lots has gone into this  
9 project already as far as jobs and stuff in the local  
10 area.

11 So, I guess, I mean, obviously I'm supporting this  
12 thing, but the what it can do for our kids and, you  
13 know -- traditionally speaking, children around Avon have  
14 to go far away to get a good job, to get a job that pays  
15 well, and here we have an opportunity for someone that's  
16 potentially just going to graduate high school to go up  
17 to Mitchell, get an education in the wind industry, come  
18 right back home, and have a great job, you know. Or they  
19 can go anywhere else in the country and do it too, for  
20 that matter. But it gives them the opportunity to stay  
21 home and have a great job.

22 My own kid is -- my son particularly, he's 8, and  
23 it's kind of funny, but he gets upset with us if we don't  
24 drive through Beethoven on our way to my sister-in-law's.  
25 Which we can avoid it. We can go around it, more or

1 less. We can go on 37 and graze the outside of it.

2 But he wants to go through them. He wants to see  
3 them. He's very curious about it. He's like a dry  
4 sponge. We talk to him about what could happen if this  
5 new project comes and the big crane and stuff, and he's  
6 like all excited. He wants to see it. He's very  
7 inquisitive about how it's going to go together and  
8 whatnot.

9 So this whole deal, I look at it as a win-win for  
10 the state, the county, the city, the school. I mean,  
11 there's been talk about the money that -- the tax money,  
12 like it's in Avon, to our school, and then after so many  
13 years it tapers down. But then it goes to the State,  
14 which is still in the education fund, which is still  
15 benefiting the State. So it's one of them, yeah, it's  
16 not so great right here locally, but it's still staying  
17 here.

18 MS. SMITH: I don't have any further questions.  
19 I offer Mr. Brandt for cross-examination.

20 MR. DE HUECK: Cross-examination. Staff, would  
21 you like to go first?

22 MS. REISS: I suppose we could, but Mr. Almond  
23 looked ready to jump in there.

24 MR. DE HUECK: This is your time to shine.

25 MS. REISS: All right.

CROSS-EXAMINATION

BY MS. REISS:

Q. Good morning.

A. Morning.

Q. So I just have a few questions. You mentioned that Prevailing Winds has gone above and beyond to keep us -- I'm assuming that's you and the other landowners -- away from sound and shadow flicker.

Do you remember that?

A. Yes.

Q. Okay. How many wind turbines are near your residence?

A. There's going to be a string of -- I guess I don't know how many are in the string, but they taper to the north and east away from -- up and away. The closest one is going to be roughly three-fourths of a mile from me. I don't know the exact footage.

Q. Okay. Would you agree that there is approximately four within two miles from your house?

A. Yeah.

Q. Okay. Are you aware of what the shadow flicker levels are at your residence?

A. Not to a T, no. I asked that question once, and they assured me it would be fairly minimal. I didn't -- like I said, I don't know the exact number.

1 Q. Okay. What would you personally consider a minimal  
2 level per day?

3 A. Somewhere in the neighborhood of 20 minutes.

4 Q. Okay. What about per year? How many hours per year  
5 would you consider a minimal level?

6 A. I guess I never really thought about it per year, to  
7 transfer minutes into hours over the year.

8 Q. Sure.

9 A. Some of the effect, my understanding of where the  
10 sunrises and where the turbine is, I'm simply not going  
11 to be there.

12 Q. Sure.

13 A. I mean, I go to work. You know, there's many  
14 mornings that I go to work in the dark.

15 Q. Sure.

16 A. So my wife and kids wake up, go to school, and go  
17 about their day to the point that I don't think it's -- I  
18 don't think there's going to be anybody there to affect.

19 Q. Okay. Okay. That makes sense.

20 You mentioned the 20 minutes per day is a level  
21 you'd be comfortable with; correct?

22 A. Yes.

23 Q. Okay. And you aren't at your residence for most of  
24 the day so you weren't worried about going higher than  
25 that; correct?

1 A. Correct.

2 Q. Okay.

3 A. I mean, basically I'm saying if it's creating a  
4 little bit of a flash over my windows on a Saturday  
5 morning, I can live with that.

6 Q. Okay. Would you perhaps feel any differently if  
7 that level got much higher?

8 A. If it was constant and I guess I was there more, you  
9 know --

10 Q. Uh-huh.

11 A. -- maybe, yeah. I mean, obviously at some point  
12 it's going to become annoying. But, like I said, I'm  
13 pretty confident with what we've got.

14 Q. Okay. You mentioned that you're excited about the  
15 positive impacts the Prevailing Wind project will bring  
16 to the community; correct?

17 A. Yes.

18 Q. Are you aware of any potential negative impacts that  
19 may come from having the wind park built in the area?

20 A. Yes. I'm aware that there's potential for it. But  
21 I look at it like a scale. And to me the positives far  
22 outweigh the possible negatives.

23 Q. Okay. Could you describe some of the possible  
24 negatives that might come?

25 A. I'm -- I mean, there's -- people worry about shadow

1 flicker and noise and things like that, but I guess -- I  
2 guess I'm not worried about it so, I mean, that -- I  
3 guess those are the only couple of things that I can  
4 really -- sunrise, shadow flicker, and some noise. But  
5 I'm not aware of anything more drastic than that.

6 Q. Okay. How long have you been involved in this  
7 project?

8 A. We signed up our ground probably two years ago.

9 Q. Okay. So in those two years how has the community  
10 reception been for this project? How would you describe  
11 it?

12 A. Over all very well. Like I said, there's -- wind  
13 industry occupies the two newest buildings -- or two of  
14 the newest buildings on Main Street. There's a lot of  
15 ground signed up there in and around the community, you  
16 know. If there's --

17 One of the maintenance workers from Beethoven Wind  
18 Project, his daughter was nominated for Homecoming in  
19 Avon already. You know, I mean, I know that doesn't mean  
20 a lot to you guys, but in Avon that's sort of reserved  
21 for the people that have lived there their whole life.  
22 It speaks volumes of the type of person that she must  
23 be.

24 Q. Sure. So in those two years that you've been  
25 involved in this project have you become aware of any



1     displeasure in the community about the project?

2     A.    Sure.  There's always some people that are going to  
3     dislike any change.  I mean, I guess I don't find great  
4     valid reasoning other than the fact that they don't like  
5     it.

6           Do you understand what I mean?

7     Q.    Right.

8     A.    There's a lot of people that just don't want any  
9     change.  They don't want anything disrupted.

10           And I get that.  I understand change is hard.  But  
11    change is a natural progression too.  So there's --  
12    there's always going to be some displeasure with any  
13    project.

14    Q.    Right.  So you would characterize the reception for  
15    the project as mostly good, a few people who are  
16    displeased, but you wouldn't characterize it as causing a  
17    strife in the community or any division of the  
18    community?

19    A.    It's not like a black-and-white, half -- you've got  
20    to decide one way or the other, no.  Yeah.  There's some  
21    concerns there, but it's not like -- how do I want to  
22    word it?

23           It's not like there's a huge thing there.  I mean,  
24    there's people for it.  There's people against it.  But  
25    life goes on.  In the end we're all still Avon

1 residents.

2 Q. Okay. And you mentioned that you have some property  
3 within the project area; correct?

4 A. Yeah.

5 Q. And you use that mostly for recreational property  
6 with some animals?

7 A. Yeah.

8 Q. Is that correct?

9 A. I was born and raised on a farm. I lived in town  
10 for nine years.

11 Q. Sure.

12 A. And I felt like a fish out of the water. So just  
13 being back out on a farm is great.

14 Q. Sure.

15 A. Even though I don't actively farm. Just having a  
16 few animals around and being able to be out and about and  
17 do my thing.

18 Q. Okay. And from your testimony could I assume that,  
19 you know, in general you're for the project, and it won't  
20 really affect the way you use your land in any way?

21 A. Correct. Correct.

22 Q. Okay. So you're generally happy with the project?

23 A. Absolutely.

24 Q. Okay. What if you used your land in a different  
25 way, say perhaps for a hunting operation?

1 A. That was actually a question --

2 MS. SMITH: Objection. Calls for speculation.

3 MR. DE HUECK: Sorry. I was taking notes.

4 Missed the question. Sustained.

5 MS. REISS: Can I rephrase the question.

6 MR. DE HUECK: Please.

7 Q. Do you hunt on your land?

8 A. Yes. Can I add to that?

9 Yes. I do hunt on my ground. That was one of the  
10 questions that I have, and they assured me that there is  
11 no hunting restrictions with -- around the wind turbines  
12 or there's no -- there's nothing there. They said you're  
13 not going to hurt them basically. So they have no  
14 problem with me hunting by them.

15 Q. Okay. Have you hunted near Beethoven at all?

16 A. That's a little farther north of me, and I tend to  
17 hunt around my home or farther south. I do drive through  
18 Beethoven on my way to work. Probably you could say I've  
19 hunted pheasants in the area or whatever on the way home  
20 from work, but not highly active, I guess. I don't have  
21 like a designated property up there that I hunt on.

22 Q. Would you be dissatisfied if for some reason the  
23 hunting conditions on your property changed?

24 MS. SMITH: Objection. Assumes facts not in  
25 evidence.

1 MR. DE HUECK: Can you rephrase your question?

2 Q. Is hunting one of the -- or is hunting on your  
3 property very important to you?

4 A. Yes.

5 Q. Is hunting one of the things that led you to  
6 purchase your property?

7 A. No.

8 Q. Not at all?

9 A. No. I mean, it's part of who I am. It's part of  
10 what I do. But I did that when I lived in town too. So  
11 it's not -- that particular property, no, not exactly. I  
12 didn't purchase it because it had great hunting  
13 opportunity.

14 MS. REISS: No further questions.

15 MS. AGRIMONTI: Mr. de Hueck, I've gotten a  
16 report from one of our listeners that they are not able  
17 to access the web audio, and I wanted to bring it to the  
18 attention of the Commission.

19 MR. DE HUECK: Katlyn will get that information  
20 down to who it needs to go to.

21 (Discussion off the record.)

22 MR. DE HUECK: We are going to recess for about  
23 15 minutes. Let's get back at it at 10:10.

24 (A short recess is taken.)

25 MR. DE HUECK: We're back in session.

1 Mr. Brandt is on the stand. He was just subject to  
2 cross-examination by Staff, and we are moving to  
3 Mr. Almond for cross-examination.

4 CROSS-EXAMINATION

5 BY MR. ALMOND:

6 Q. Mr. Brandt, you mentioned you have a brother that's  
7 a participating landowner. What's his name?

8 A. Benjamin Brandt.

9 Q. And your father's name, what's his name?

10 A. Dennis Brandt.

11 Q. You also have an uncle that's participating in this  
12 project named Roger?

13 A. Correct.

14 Q. And if you'd turn over to the blown-up map to your  
15 right, which is Exhibit A20-2, if you would locate your  
16 residence on that map for me, I'd appreciate it.

17 And once you've done that, do you see Turbine  
18 No. 38?

19 A. Yes.

20 Q. Whose land is that turbine going to be placed on?

21 A. Dennis.

22 Q. And go to Turbine No. 43.

23 Let's follow up this string. 43, is that going to  
24 be placed on Roger's land?

25 A. Correct.

1 Q. And 44?

2 A. Dennis.

3 Q. What about 42?

4 A. Dennis.

5 Q. And 27?

6 A. Roger.

7 Q. And 52?

8 A. Dennis.

9 Q. And then if you go north and a little bit west of  
10 52, there's an unnumbered turbine up there. Do you see  
11 that?

12 A. Yeah.

13 Q. And whose land is that turbine going to be placed  
14 on?

15 A. Is there actually a turbine there? I mean, I see a  
16 dot, but there's no number obviously.

17 Q. Well, assume that dot is a turbine.

18 A. Okay. That's my father's, Dennis Brandt. Dennis or  
19 Lyle.

20 Q. So, my count, the Brandt family is going to get  
21 seven turbines of this project.

22 A. Okay.

23 Q. Is that accurate based off the turbines we just  
24 talked about?

25 A. Correct.

1 Q. Now we know there are going to be 61 turbines, and  
2 the Brandt family is getting seven. By my quick math,  
3 that's about 11 percent of the total turbines.

4 A. Split amongst three.

5 Q. And I know there were 136 -- you've heard from  
6 Peter Pawlowski that there are 136 people or landowners  
7 who signed up a lease agreement to get a turbine, and the  
8 Brandts were lucky enough to get 11 percent.

9 Any idea how the Brandts were able to get 11 percent  
10 of the turbines?

11 A. To my understanding, the turbines are placed by  
12 engineers based on elevation. And based -- well, I  
13 shouldn't say just elevation.

14 There's a lot more that goes into it than that.  
15 There's setbacks. There's nonparticipating properties.  
16 There's wetlands. There's 10,000 other surveys.

17 Q. It's well known that your dad, Dennis, was an  
18 investor in the Prevailing Winds Project; right?

19 A. I guess so. Yeah. But, like I said, you say the  
20 Brandt family is getting these turbines. That's split  
21 amongst three individuals. We don't pool our money or  
22 land.

23 Q. And we talked with Peter Pawlowski about how the  
24 project area generally is over 50,000 acres. And they  
25 only need to site 61 turbines.

1           Any idea why it was necessary to have that  
2 northeastern string of turbines that exist on the Brandt  
3 land and why those turbines weren't sited farther up in  
4 the middle of the project?

5       A.    I have no clue. Like I said, that's decided by  
6 engineers that have way more knowledge of -- the way they  
7 place them is way beyond me.

8       Q.    Were you an investor in the Prevailing Winds  
9 Project?

10      A.    No, I am not.

11      Q.    Have you ever attended a shareholder meeting for the  
12 Prevailing Winds Project?

13      A.    No, I have not.

14      Q.    And you said you have signed up your land; correct?

15      A.    Yes.

16      Q.    If you could turn to Exhibit I-17 for me.

17      A.    I-17.

18      Q.    And it, I believe, is in the binder to your right  
19 that's underneath the binder that's open.

20                               (Discussion off the record.)

21      Q.    You have Exhibit I-17 in front of you?

22      A.    I do.

23      Q.    Does this look like the agreement you would have  
24 signed when you signed up for this project?

25      A.    Without reading it in full, yeah, I would assume



1     that this is the lease, yes.

2     Q.   Who did you have discussions with before signing  
3     that agreement?

4     A.   I believe we talked to -- or you say who did I have  
5     discussion with? Do you mean like from Prevailing Winds?

6     Q.   Yeah.

7     A.   Give me a second. Names escape me.

8           Ronnie Hornstra.

9     Q.   Aside from Ron Hornstra, did you have discussion  
10    with anyone else from Prevailing Winds prior to executing  
11    that -- or executing your lease agreement?

12    A.   I believe I talked with Roland, but I don't remember  
13    if it was before or after I signed -- I believe that was  
14    after I signed the contract.

15    Q.   Just so we're clear, is that Roland Jurgens?

16    A.   Yes. But, like I said, I believe my first talkings  
17    with Roland were after I signed up. It was pretty much  
18    Ronnie Hornstra that I dealt with when I signed up my  
19    property.

20    Q.   And what year did you sign up your property?

21    A.   It was roughly two years ago. I don't remember the  
22    exact date without finding the contract and checking.

23    Q.   And how many meetings did you have with  
24    Mr. Hornstra? And if you did have any with Mr. Jurgens  
25    prior to signing, how many meetings did you have before

1     you actually signed the agreement?

2     A.   Probably two, maybe three.

3     Q.   And did you have the opportunity -- or did you  
4     review your agreement with any legal counsel?

5     A.   I did not.

6     Q.   So in the two or three meetings that you had with  
7     Mr. Hornstra and perhaps Mr. Jurgens, how much time did  
8     you discuss the contents of the agreement?

9     A.   I don't recall. Somewhere just -- probably just a  
10    few minutes each, just if I had a minor question or  
11    something, and they answered them promptly.

12    Q.   Did you have any questions about the lease  
13    agreement?

14    A.   I don't recall having any, but I -- I think -- I'm  
15    sure I had some, just like some minor things, and, like I  
16    said, they addressed them and -- I don't remember  
17    specifically what they were.

18    Q.   If you could turn to page 9 of Exhibit I-17 for me.  
19    Go to the bottom of page 9. Do you see Section 9.4?

20    A.   Yes.

21    Q.   Do you see where it says, "Landowner shall assist  
22    and fully cooperate with lessee in complying with and  
23    obtaining any land use permits and approvals," et cetera.  
24    It goes on to say, "Any other approvals required or  
25    deemed desirable by lessee in connection with the

1 development, financing, construction," et cetera of the  
2 project?

3 A. Yes.

4 Q. So do you agree you're contractually bound to come  
5 here and assist sPower in getting the permit it's  
6 requesting from the Commission?

7 A. I'm not a lawyer to pick that apart, but legally  
8 bound I guess I would say I'm here on my own free will.  
9 Nobody forced me here. But according to this wording, I  
10 guess you could argue that.

11 Q. And prior to signing it, did they explain that you  
12 may be called upon and may be contractually bound to  
13 assist them in getting whatever permits they might want?

14 A. No. That never came up.

15 Q. Okay. And what about confidentiality issues? Was  
16 that ever explained prior to signing up?

17 A. I do not recall. I don't think it ever came up.

18 Q. So they never explained to you that you had to keep  
19 certain things confidential?

20 A. No.

21 Q. Turn to page 16 of that exhibit for me.

22 A. I'm on 16.

23 Q. Do you see Section 13.2, the Confidentiality  
24 section?

25 A. I do.

1 Q. Did they explain to you this section at all prior to  
2 signing up?

3 A. I mean, they gave me a copy of the thing. I read  
4 it. It's not -- it's not something we went into detail  
5 talking about.

6 Q. When you were discussing with Mr. Hornstra and  
7 perhaps Mr. Jurgens before signing up to your lease  
8 agreement did they ever indicate how many turbines the  
9 number of acres you were signing up could possibly get?

10 A. No. And, like I said earlier, I never assumed I  
11 would get one. I more or less signed up my ground for  
12 the potential of easing the project for like a  
13 transmission line or something that I thought might have  
14 to cross.

15 I'm down in a valley. I just naturally assumed I  
16 wouldn't get one. I would have gladly taken one if they  
17 would have offered it to me, but I have a fairly small  
18 parcel of ground there and, like I said, there's a  
19 downhill slope from -- there's a creek way that runs  
20 behind my house so, like I said, I never assumed I would  
21 get one.

22 Q. How small is your parcel of ground?

23 A. 60 acres.

24 Q. 60 acres?

25 A. Yeah.

1 Q. In any of your discussions with Mr. Hornstra or  
2 Mr. Jurgens has it been represented to you the  
3 possibility of another project that's coming down the  
4 road?

5 A. No. From my vague understanding of our geographical  
6 location, we're out of transmission lines to take power  
7 away. I mean, this is just my understanding. But when  
8 the wind industry first came to town, so to speak, we had  
9 three avenues to possibly get rid of electricity to put  
10 it out onto the grid, for lack of better terms.

11 There's three major lines that run through the area,  
12 and one of them was full. Beethoven went on one. And  
13 this one will fill the third. So until somebody puts in  
14 a bigger, better power line, that's kind of the cap.

15 But, like I said, that's my understanding.

16 Q. How long have you lived at your residence there?

17 A. We have been at that physical location for four  
18 years, give or take. But I've been around Avon my whole  
19 life.

20 Q. So you were around when the Beethoven project was  
21 built and went into operation?

22 A. Yes.

23 Q. How many families did the Beethoven project bring  
24 into the area?

25 A. I don't know the exact number. There was obviously

1 a temporary boom while they were building, doing the  
2 construction phase there. But there are families living  
3 in Avon that are doing the maintenance part of what  
4 Beethoven --

5 Q. And were those families living there before the  
6 project came in?

7 A. No.

8 Q. Who are those families?

9 A. I don't know their -- small town, everybody's  
10 supposed to know everybody, but -- I know their last  
11 name. One of them was the Long family. And the only  
12 reason I knew that is because it was published in the  
13 newspaper when she was nominated for Homecoming court.  
14 And everybody was like, well, who's that? So it got  
15 tossed around a little bit. And it was, well, that's one  
16 of the guys that works on Beethoven, that's his daughter  
17 so.

18 MR. ALMOND: Nothing further.

19 MR. DE HUECK: Mr. Fuerniss.

20 CROSS-EXAMINATION

21 BY MR. FUERNISS:

22 Q. So you don't spend the day on your property? You  
23 have a job in town or somewhere else?

24 A. Right. I work in Parkston. 30 miles away. I'm  
25 there five days a week. And, like I said, there are many

1 mornings that I'm gone before the sun comes up.

2 Q. So you wouldn't say that you depend on that property  
3 for your livelihood?

4 A. No.

5 Q. Were you at the PUC public input meeting at Avon  
6 last summer?

7 A. I missed that one. I had a prior engagement. I was  
8 at the PUC meeting prior to that that they had in Avon.

9 Q. Okay. Well, if you weren't at this one this summer,  
10 then you can't answer my next question. So thank you.

11 MR. DE HUECK: Ms. Jenkins.

12 CROSS-EXAMINATION

13 BY MS. JENKINS:

14 Q. You said that the transmission -- the electric  
15 transmission lines are at their cap? Is that what you  
16 said?

17 A. To my understanding, yes. That's just association  
18 with the project, the various talks that I've had with  
19 different people.

20 Q. Can you name the people?

21 A. Most of that information came from my father. Where  
22 he got it, I have no idea. But that was -- it was  
23 discussed that -- because I asked --

24 At some point I asked, Are they going to just keep  
25 building them? And he said, We're maxed out with

1 electric lines so --

2 MS. JENKINS: Okay. Thank you.

3 MR. DE HUECK: Ms. Pazour.

4 CROSS-EXAMINATION

5 BY MS. PAZOUR:

6 Q. I have a comment for you is have you read the last  
7 school board meetings?

8 A. I have not.

9 Q. You have not. They are talking about doing a  
10 four-day school day.

11 A. Okay.

12 Q. Which I was just checking to see if you read it.

13 A. No, I didn't read the meetings.

14 Now you say that, my wife did mention it. It was  
15 somewhere brought up but -- that's talk, but it -- yeah.  
16 It may or may not happen, I guess. But I guess I'm aware  
17 of it, but I --

18 Q. I guess why would you think the school is going to a  
19 four-day --

20 MS. SMITH: I'm going to object. This is  
21 outside of the scope of anything that he's discussed.

22 MR. DE HUECK: I agree.

23 MS. PAZOUR: Okay.

24 MR. DE HUECK: That will bring us to Commission  
25 questions. And we'll start with Vice Chairman Hanson.



1           COMMISSIONER HANSON: Thank you for being here  
2 today. I appreciate you traveling here. I missed a  
3 question possibly if it was asked.

4           Are you getting paid for your testimony?

5           THE WITNESS: Paid for my testimony today, no.

6           COMMISSIONER HANSON: Yes. To testify. That's  
7 the only question I had.

8           MR. DE HUECK: Commissioner Nelson.

9           COMMISSIONER NELSON: I too thank you for taking  
10 part in the government process.

11          THE WITNESS: It's an interesting one.

12          COMMISSIONER NELSON: The question I've got for  
13 you, in state law one of the criteria that we have to  
14 evaluate in order for a permit to be issued deals with  
15 the social condition of the area. And the statute says  
16 that we can't issue a permit if the project would cause  
17 serious injury to the social condition of the  
18 inhabitants.

19          Do you believe that there's been injury to the  
20 social condition of the inhabitants of your area because  
21 of this project?

22          THE WITNESS: Serious injury to the social  
23 conditions.

24          I'm trying to think of the right words, how to  
25 describe that. There is always some controversy with a

1 project, but, as I stated before, I believe when this  
2 thing is all said and done, whether it is built or not,  
3 we are all still a community.

4 I mean, these people are my neighbors. They're  
5 still going to be my neighbors when this is all said and  
6 done. So I do not believe that there's been so much  
7 injust that we can't get along and go about life.

8 Does that answer your question?

9 COMMISSIONER NELSON: Thank you.

10 THE WITNESS: Yes.

11 MR. DE HUECK: Chairman Fiegen.

12 CHAIRWOMAN FIEGEN: Thank you. And did you  
13 drive up this morning in this great weather?

14 THE WITNESS: No, I did not. I got here last  
15 night. I had a prior engagement in Sioux Falls yesterday  
16 so we did kind of a big loop here.

17 CHAIRWOMAN FIEGEN: Oh, do I understand that.

18 THE WITNESS: It's been a fun couple of days  
19 but --

20 CHAIRWOMAN FIEGEN: Yeah. But Interstate 90 is  
21 a good interstate.

22 Do you remember the question that Ms. Reiss of  
23 Staff asked you and she asked you to talk about the  
24 community of Avon. And you -- and the project.

25 And I wrote it down. You said overall very

1 well. Is that -- did I write that down or hear that  
2 right?

3 THE WITNESS: I would agree with that, yes.

4 CHAIRWOMAN FIEGEN: Okay. So you were at the  
5 public hearing of Prevailing Winds before it was split up  
6 so it could go according to PURPA law and I don't -- you  
7 probably don't know this, but it's a purchase deal.

8 THE WITNESS: Yeah. Yep.

9 CHAIRWOMAN FIEGEN: So you were at that meeting.

10 THE WITNESS: Yes. That was, I believe, the  
11 first PUC meeting in Avon.

12 CHAIRWOMAN FIEGEN: With a public hearing -- or  
13 public input.

14 THE WITNESS: Right.

15 CHAIRWOMAN FIEGEN: And you were at that  
16 meeting?

17 THE WITNESS: Correct.

18 CHAIRWOMAN FIEGEN: Would you say the flavor of  
19 that meeting, since you were there, the community overall  
20 was very well -- you know, got along very well? Whatever  
21 you meant by very well.

22 Was that representative of that public input  
23 meeting that you attended?

24 THE WITNESS: I think then there was a lot of  
25 fear. So to use what happened two years ago might be

1     injust to current. But my feeling from that public input  
2     meeting was that there was a lot of people that were for  
3     it that didn't say anything.

4             You probably would have heard more of a naysay  
5     at that input meeting. And, like I said, there's a lot  
6     of fear associated there. I mean, there were people that  
7     got up there and cried. And I understand that.  
8     There's -- this is a big deal, and it shouldn't be taken  
9     lightly.

10            But I think a little -- a little education as to  
11     what goes into these things and the technology aspect of  
12     them is huge.

13            And maybe I understand that just a touch better  
14     than some. These things are very technological, and they  
15     update very rapidly. So what drives that fear into some  
16     people is probably outdated technology.

17            CHAIRWOMAN FIEGEN: Okay. So you discussed the  
18     first one that you attended. So what I'm assuming is  
19     that there was a lot of educational meetings for the  
20     public and then that fear went away for the second one?  
21     I mean, that's what you're leading me to believe.

22            THE WITNESS: I wouldn't say there's been a lot  
23     of education, but I think there's become more of an  
24     understanding of what's coming. You know, there at one  
25     point they talked 200 towers. There were towers

1 everywhere. We were going to have towers to the river,  
2 you know. And now it's like shrunk, and it's -- it's  
3 here, you know, and it's not this big ugly monster came  
4 to town anymore.

5 CHAIRWOMAN FIEGEN: So did you read any of the  
6 news reports?

7 Although you weren't at the public hearing, did  
8 you read any of the news reports or WNAX or Yankton on  
9 the public hearing, and do you feel like that news  
10 report --

11 THE WITNESS: I did not.

12 CHAIRWOMAN FIEGEN: Okay. Have you read any of  
13 the public comments?

14 Because as a Public Utilities Commissioner we  
15 don't get to talk to the public about -- except at a  
16 public input meeting. And then they can send us  
17 comments, and so we get to read those.

18 THE WITNESS: Yep.

19 CHAIRWOMAN FIEGEN: Have you had the opportunity  
20 to read those comments and kind of see the flavor of  
21 what's going on in your community?

22 THE WITNESS: I have read some. I have a pretty  
23 busy lifestyle. I have a full-time job. I have two  
24 kids. I have some animals. I don't have a lot of time  
25 to sit at the computer.

1 CHAIRWOMAN FIEGEN: Okay.

2 THE WITNESS: But I have read some. And I've  
3 seen good. I've seen bad.

4 CHAIRWOMAN FIEGEN: Okay. Also you talked about  
5 wanting to move back in the rural area.

6 THE WITNESS: Yes.

7 CHAIRWOMAN FIEGEN: And I certainly have a heart  
8 for that. So you lived in Avon?

9 THE WITNESS: I was born and raised just south  
10 of Avon. My folks' house is like, oh, about here  
11 (indicating).

12 And then I lived in Avon right after I got  
13 married. I didn't know where I was going to be in six  
14 months, let alone six years so I bought a house in town.  
15 And all the sudden nine years and two kids later I said,  
16 well --

17 CHAIRWOMAN FIEGEN: So then you wanted to get  
18 back into the country and raise your family there. And  
19 there was job opportunities that you could drive to, but  
20 you got to live back in the country.

21 THE WITNESS: Yeah. Right.

22 CHAIRWOMAN FIEGEN: Okay. Thank you.

23 MR. DE HUECK: Any redirect?

24 MS. SMITH: I think just one.

25

REDIRECT EXAMINATION

BY MS. SMITH:

Q. Mr. Brandt, you were asked a question about shadow flicker levels. If shadow flicker were a concern, do you believe that your concerns would be addressed by Prevailing Wind Park?

A. I do.

MS. SMITH: I have no further questions.

MR. DE HUECK: Recross. And I'll keep going in the order we started.

Staff.

MS. REISS: None at this time, no. Thank you.

RECROSS-EXAMINATION

BY MR. ALMOND:

Q. Mr. Brandt, in your discussion with Commissioner Fiegen you stated there was a lot of fear with respect to this project, and you don't share that fear because I think through education or a better understanding of the project that fear has subsided?

A. Correct.

Q. And I think there are people in this room that still have fear so if you could enlighten them with what additional education or understanding that you gained that they maybe haven't to help eliminate that fear, I'd ask for you to share that with them now.

1 A. Well, sort of like I said, at one point there was --  
2 there was talk of 200 plus towers. We were going to have  
3 towers -- this was going to go from Beethoven to the  
4 Missouri River. There was going to be this big thing.  
5 And there was concerns about the shadow flicker and noise  
6 and everything else.

7 And I just -- I believe that the developers and the  
8 technology and everything has done a very good job.  
9 They've gone above and beyond the setbacks, the  
10 recommendations.

11 Everybody looks at the footage of the setbacks. And  
12 more importantly than the footage is the location in  
13 relevance. You know, if your house is right in line with  
14 the sun and the tower, it's going to be more of a  
15 nuisance than if it's offset by just a few degrees.

16 So if you kind of look at the way they place the  
17 towers in relation to the houses and stuff and above and  
18 beyond the setbacks, I believe that they have done a  
19 very good job of trying to minimize the impacts of the  
20 shadow flicker and of the noise levels and stuff of that  
21 nature.

22 Q. And are you saying if that information was known by  
23 the individuals in this room, they wouldn't have the fear  
24 that they have?

25 A. I guess I can't guarantee. Fear is a human emotion.



1 But that's -- to me that's what has alleviated a lot of  
2 the concern with this project is the good nature of the  
3 developers and the way that they are trying to work with  
4 people to minimize the impacts.

5 MR. ALMOND: No other questions.

6 MR. DE HUECK: Mr. Fuerniss.

7 RECROSS-EXAMINATION

8 BY MR. FUERNISS:

9 Q. So going back to Commissioner Fiegen's comments  
10 about you were at the -- it would have been the 2016 PUC  
11 meeting in Avon?

12 A. Correct.

13 Q. Okay. So would you be surprised if at the 2018  
14 meeting those who spoke against the project outnumbered  
15 those who spoke in favor of the project by three or four  
16 to one?

17 A. No. I guess it wouldn't surprise me. And, like I  
18 said, there's -- the evidence is on the map, in my mind,  
19 of there's more supporters than there are not.

20 I wasn't there so I don't know what the -- what the  
21 feeling was from that meeting, but I guess it wouldn't  
22 surprise me. The vocalization of one side to the other  
23 could be significantly more, but I think there's a lot of  
24 people that support it that just aren't saying so.

25 Q. Would you say that the number of residences in and

1 near the footprint that the majority of those people do,  
2 in fact, support the project?

3 A. I would believe that, yes.

4 Q. If that could be shown otherwise, what do you think?

5 MS. SMITH: I'm going to object. That calls for  
6 speculation.

7 MR. DE HUECK: I agree. You don't have to  
8 answer that question.

9 MR. FUERNISS: I agree as well. I'm sorry.

10 Q. When you look at the map there with the green on --  
11 and there's no good way, I guess, for you to answer this.  
12 But there is a fair amount of land leased that is, in  
13 fact, owned by what we would term absentee landowners?

14 A. Fair enough. You can only live on so much of it.

15 Q. So but those absentee landowners that have signed up  
16 for the leases, they will, in fact, never be affected in  
17 any way by any potential negative consequences of living  
18 near an operational wind farm, will they?

19 A. I guess. If they're not around it, no, they  
20 wouldn't be affected.

21 MR. FUERNISS: Okay. Thank you.

22 MR. DE HUECK: Ms. Jenkins.

23 MS. JENKINS: No questions.

24 MR. DE HUECK: Ms. Pazour.

25 MS. PAZOUR: No questions.

1 MR. DE HUECK: With that, your testimony is  
2 concluded. Thank you.

3 THE WITNESS: You're welcome.

4 (The witness is excused.)

5 MR. DE HUECK: Prevailing Winds, you may call  
6 your next witness.

7 MS. SMITH: We call Bridget Canty.

8 Bridget Canty,  
9 called as a witness, being first duly sworn in the above  
10 cause, testified under oath as follows:

11 DIRECT EXAMINATION

12 BY MS. SMITH:

13 Q. I'm guessing you are looking for the binder with  
14 your exhibits?

15 A. Yes.

16 Q. Maybe Ms. Agrimonti will assist you in finding those  
17 while we just do a little bit of introduction.

18 Ms. Canty, could you please introduce yourself to  
19 the Commission.

20 A. Yes. My name is Bridget Canty. I work for sPower  
21 as the permitting project manager for the Prevailing Wind  
22 Park Project.

23 Q. And I'm going to guess you're going to need to speak  
24 up a little bit more and pull the mic. a little bit  
25 closer to yourself.

1           Can you please provide an overview of your education  
2           and your work history.

3           A.    Sure.  I have a bachelor's degree in biology and  
4           coursework supporting a master's degree in environmental  
5           science and resources.

6           Q.    And as far as your work history.

7           A.    Yeah.  I've been working since 2000 permitting wind  
8           energy projects as both a wildlife biologist and later as  
9           a project manager and now as a permitting project manager  
10          for sPower.

11          Q.    And how many wind projects have you worked on over  
12          the years?

13          A.    I would estimate I've worked on approximately 20  
14          wind projects.

15          Q.    And did you file Prefiled Direct Testimony in this  
16          matter with the Application?

17          A.    I did.

18          Q.    And is that marked as Exhibits A12 and A12-1?

19          A.    Yes, it is.

20          Q.    And did you also file Prefiled Supplemental Direct  
21          Testimony on August 10, 2018?

22          A.    Yes, I did.

23          Q.    And is that marked as Exhibits A13 and A13-1?

24          A.    Yes, it is.

25          Q.    And did you also file Rebuttal Testimony on

1 September 26?

2 A. Yeah. I did that too.

3 Q. And is that Exhibits A14 and A14-1 through A14-2?

4 A. That's correct.

5 Q. And what in general is covered in your -- all of the  
6 testimony that you've submitted to date?

7 A. I'll be covering the environmental resources portion  
8 of the Application.

9 Q. And do you have any updates or corrections to your  
10 testimony? I know of one.

11 A. I know of one too, but I'm going to need you to  
12 remind me what that is.

13 Q. I will. I will certainly do that.

14 So if you look at your Direct Testimony, A12, and  
15 there's a table that lists studies that were done.

16 A. I'm there.

17 Q. I believe you had a correction to the date on the  
18 FCC study.

19 A. That's right. The FCC study indicates it was done  
20 in 2016, but, in fact, it was done in April of 2018.

21 Q. Okay. And then you've been present for the  
22 testimony thus far, the majority of it?

23 A. I have.

24 Q. There were some questions regarding whooping cranes  
25 from Commissioner Hanson and what mitigation would be

1 utilized by the project during the migration period for  
2 the whooping crane.

3 Could you elaborate on what mitigation will be  
4 taken?

5 A. Yes. I'd be happy to respond to that.

6 sPower has committed to, excuse me, a curtailment  
7 program whereby if a whooping crane is sited within two  
8 miles of the project, the turbines will be shut down  
9 until the cranes leave the area.

10 We have also committed to a monitoring program.  
11 That would be migration monitoring during the spring and  
12 fall migration periods to be conducted by a biologist  
13 familiar with the species.

14 Those are conditions we've agreed to as part of the  
15 Programmatic EIS that we are tiering off of for our NEPA  
16 EA with WAPA.

17 Q. Other than the updates and the correction that you  
18 noted, do you have any other changes to your testimony?

19 A. I do not.

20 Q. And if I asked you the questions, your answers would  
21 be the same?

22 A. Yes.

23 MS. SMITH: Ms. Canty is available for  
24 cross-examination.

25 MR. DE HUECK: Mr. Almond, you may proceed.

1 MR. ALMOND: Staff doesn't want to go first  
2 again?

3 MR. DE HUECK: No. One-time deal.

4 CROSS-EXAMINATION

5 BY MR. ALMOND:

6 Q. Ms. Canty, can you flip to Exhibit I-18 for me,  
7 please.

8 A. I'm on that page.

9 Q. This is an sPower document; correct?

10 A. It appears to be.

11 Q. Looking at that picture or map there, what was  
12 that -- well, let me back up.

13 Go to the second page of Exhibit I-18.

14 A. The backside?

15 Q. Yeah. What was this document used for?

16 A. I'm not exactly sure. The backside appears to be a  
17 document we might have provided during the WAPA open  
18 house or a subsequent open house that we provided in  
19 Tripp.

20 Q. Open houses, they are to invite members of the  
21 public to come and discuss the project with them; right?

22 A. That's correct. And I'm probably using the wrong  
23 term for the WAPA open house. I can't remember the exact  
24 term, but it's a requirement when you basically kick off  
25 the project with the public.

1 Q. And part of the goal from the developer is to try to  
2 get interest or intrigue from people in the public for  
3 the project; right?

4 A. I'm not sure I would characterize it that way. I  
5 think the goal of the developer is to get information  
6 about the project out to the public. Also to make  
7 themselves -- ourselves available to answer questions as  
8 they arise.

9 Q. When sPower held these open houses did it have all  
10 of the lease agreements signed?

11 A. No. I don't believe we did.

12 Q. And sPower views these open houses as an ability to  
13 kind of advertise to get people to sign up for lease  
14 agreements, doesn't it?

15 A. Well, as I mentioned, I think the primary purpose of  
16 the open house is to generate public comments as required  
17 by the WAPA process. But I cannot deny that we did have  
18 land agents there who were available to talk to  
19 interested landholders.

20 Q. If you go back to the first page of that document,  
21 back to that map.

22 A. Uh-huh.

23 Q. As an sPower employee, can you tell us what that map  
24 is showing?

25 A. I think that Peter Pawlowski on our team already



1 looked at this map. I'm not exactly sure what it shows,  
2 but it appears to show some parcels that are either  
3 orange or red.

4 And based on my knowledge of where the Fuerniss  
5 property is located, my guess is that these are unleased  
6 properties.

7 Q. Take a look over your right shoulder at that map.  
8 Are you familiar with that map?

9 A. Yes, I am.

10 Q. And the green properties are those that are signed  
11 up; correct?

12 A. Yes.

13 Q. And then the -- would you call that tan? The tan  
14 colored boxes are those people who are not signed up for  
15 the project; right?

16 A. Correct.

17 Q. Does that map have the same people -- does that map  
18 show the same thing as the map in Exhibit I-18?

19 A. Well, just from a cursory review, it appears to have  
20 some similarities.

21 Q. And the differences are?

22 A. It looks like some of the properties shown on this  
23 map in the exhibit as -- what I suppose to be  
24 nonparticipating landowners may have later agreed to  
25 lease some of their properties.

1 Q. So you're saying Exhibit I-18 is a more accurate  
2 representation of those individuals who have signed up  
3 than Exhibit A20-2?

4 A. No.

5 MS. SMITH: Objection. Misstates testimony.

6 MR. DE HUECK: Sustained.

7 A. I simply said that I see some differences there.

8 Q. And, again, those differences being there are more  
9 green areas on Exhibit I-18 than there are on  
10 Exhibit A20-2?

11 A. It appears to me that this map is more current. It  
12 looks to be more current to me.

13 Q. And, for the record, that's Exhibit A20-2 is the  
14 "this map" that the witness gestured to.

15 So A20-2 is the more current map?

16 A. It appears that way to me. I cannot be certain.

17 Q. And would you agree with me that Exhibit A20-2 has  
18 more nonparticipating acres than the map shown on  
19 Exhibit I-18?

20 A. As I mentioned previously, I'm not exactly certain  
21 what this map in the binder exhibit is supposed to  
22 portray. I am simply guessing that it is portraying some  
23 unleased properties.

24 I think that Mr. Pawlowski addressed this in his  
25 earlier testimony.

1 Q. Now you may not be able to answer this question  
2 based off that answer, but we'll give it a shot.

3 Do you have any knowledge of whether or not land  
4 agents were representing to individuals in the area using  
5 Exhibit I-18 that that's the acreages that were signed up  
6 for the project in order to induce them to sign up their  
7 acres?

8 A. I have no knowledge of that.

9 MR. ALMOND: Okay. No further questions.

10 MR. DE HUECK: Mr. Fuerniss.

11 CROSS-EXAMINATION

12 BY MR. FUERNISS:

13 Q. Hi. I guess my only question would be about -- the  
14 date of the bat survey is, I think, 2015. Is that  
15 current? Is that good enough, would you say?

16 A. That's a great question. We also conducted surveys  
17 in 2016 and, unfortunately, those surveys showed that bat  
18 populations appear to be declining in the project area as  
19 we're seeing across the country.

20 MR. FUERNISS: Okay. Thank you.

21 MR. DE HUECK: Ms. Jenkins.

22 MS. JENKINS: No questions.

23 MR. DE HUECK: Ms. Pazour.

24 MS. PAZOUR: No questions.

25 MR. DE HUECK: And Staff.

CROSS-EXAMINATION

1  
2 BY MS. EDWARDS:

3 Q. Thank you. Good morning.

4 A. Morning.

5 Q. On your direct you mentioned that the Applicant will  
6 be conducting monitoring for whooping cranes. How long  
7 will that monitoring occur?

8 A. You know, we're still determining what that  
9 monitoring plan will look like in consultation with the  
10 Service, the U.S. Fish & Wildlife Service. So we are  
11 just at the beginning of our discussions with them, but I  
12 expect it will last a minimum of two years.

13 Q. Thank you.

14 In your written testimony you stated that Prevailing  
15 Wind Park will be responsible for covering all  
16 decommissioning costs. Is that accurate?

17 A. Yes.

18 Q. And Prevailing Wind Park then is separate from  
19 Prevailing Winds, LLC?

20 A. Yes. That's right.

21 Q. Which is separate from sPower?

22 A. I will attempt to clarify, but I may defer to Peter  
23 Pawlowski in the event that I say something incorrect.

24 Prevailing Wind Park, LLC is the owner of all of the  
25 project assets. It was purchased from Prevailing Winds,

1     LLC.   sPower is the company that owns Prevailing Wind  
2     Park, LLC.

3     Q.    Thank you.   I really need a flowchart.

4           Prevailing Wind Park is an LLC; correct?

5     A.    Yes.   That's right.

6     Q.    In what year were they organized?

7     A.    I would have to guess 2017 since sPower purchased  
8     the project in October of 2017.

9     Q.    So what assets would Prevailing Wind Park, LLC have  
10    to guarantee financial viability?

11    A.    I cannot respond to that question.   I would defer to  
12    Peter Pawlowski.

13    Q.    Okay.   Thank you.

14           Sort of on that same vein of decommissioning, if a  
15    single wind turbine were no longer operable prior to the  
16    entire project being decommissioned, how would that be  
17    addressed?

18    A.    Again, I think that's a question more appropriate  
19    for Peter to answer.

20    Q.    Do you have an opinion?

21           MS. SMITH:   Objection.   She's answered that  
22    she's deferring to Peter Pawlowski.

23           MR. DE HUECK:   I'll defer to Peter Pawlowski.   I  
24    feel like he could answer these.

25           MS. EDWARDS:   He's already testified.   I mean --

1 MS. SMITH: We're happy to bring him back up to  
2 address the questions as needed.

3 MS. EDWARDS: I would appreciate that.

4 Q. In your role as permitting project manager have you  
5 been aware of or had any communications with the local  
6 telecommunications provider?

7 A. Yes, we have. We've been coordinating with Golden  
8 West, and the coordination has included site meeting  
9 discussion of engineering. But we are not proposing to  
10 introduce any type of copper or anything along those  
11 lines that would cause inductive interference.

12 Q. Did Golden West propose any type of agreement to  
13 ensure protection of their copper assets?

14 A. They would have not indicated any concern about  
15 interference.

16 MS. EDWARDS: I lost my list. I might need just  
17 30 seconds here to find it. I apologize.

18 (Pause.)

19 Q. All right. Turning to the Programmatic EIS, it's  
20 Staff's understanding that the Applicant is -- for the  
21 project is being reviewed by WAPA in accordance with the  
22 National Environmental Policy Act under the Upper Great  
23 Plains Wind Energy Programmatic EIS.

24 Is that an accurate understanding?

25 A. That's correct.

1 Q. In order for the project to tier from the  
2 Programmatic EIS did Prevailing Wind Park have to commit  
3 to implementing applicable avoidance minimization and  
4 mitigation measures?

5 A. Yes. We have committed to those.

6 Q. And are those set forth in the Programmatic EIS?

7 A. Yes, they are.

8 Q. Can you tell us what the status of the Level 3  
9 Archaeological Survey is?

10 A. Yes. That survey is being completed -- well, I'd  
11 like to say as we speak, but I think they're not in the  
12 field today because of the weather. But the shovel  
13 testing was the last element that needed to be completed  
14 for that survey, and that is probably five days away from  
15 being completed.

16 Q. Are you aware at this time whether that survey has  
17 turned up any areas of concern?

18 A. I believe it turned up one area of concern. It  
19 looks like it may be avoidable. We're still waiting to  
20 learn more about it.

21 Q. Is that something you can elaborate on, or is  
22 that --

23 A. It's a site that was described as an old foundation  
24 and what do they call it? A historic scatter.

25 Q. Will that have an impact on project facilities at

1 all?

2 A. I don't expect that to affect facilities.

3 Q. Thank you. What is the status of the Historic  
4 Architectural Resource Reconnaissance Survey?

5 A. That's a mouthful. I'm not going to try and repeat  
6 what you just said.

7 That survey, the field portion is completed, and  
8 they are now evaluating the results of the surveys.

9 Q. Are you aware, has that turned up any concerns?

10 A. It has identified two properties that are  
11 recommended eligible for the Register of Historic Places  
12 as well as -- yeah. Two that are recommended, and one  
13 that was previously identified as eligible.

14 Q. Do you anticipate that will have any impact on the  
15 facilities?

16 A. We are evaluating impacts on those sites right now.  
17 I don't expect it's going to affect facilities. And  
18 we're working with SHPO to identify any mitigation that  
19 might be required.

20 Q. So is it fair to say you're committed to working  
21 with SHPO to address any concerns they have?

22 A. Absolutely.

23 Q. Referring to lines 64 to 72 of the Rebuttal  
24 Testimony, that's Exhibit A14.

25 A. I'm sorry. Could you say the lines again?



1 Q. It's 64 to 72 of your Rebuttal Testimony.

2 A. Okay. I've got that.

3 Q. A14. Do you have that in front of you?

4 A. I do.

5 Q. Okay. Do the 16 properties identified as eligible  
6 for listing on the historic -- national -- the NRHP  
7 impact the project layout at all?

8 A. Those 16 properties -- I think it's now 18  
9 unevaluated sites -- they've been reclassified as  
10 unevaluated because they were not accessible due to right  
11 of entry restrictions to the properties.

12 And we just had a discussion with SHPO yesterday  
13 about how to treat these properties, and they indicated  
14 to us that we did not need to evaluate impacts to these  
15 properties.

16 Q. Okay. So based on that statement, is it fair to say  
17 you have regular contact with SHPO?

18 A. Very regular contact.

19 Q. What is the status of the Traditional Cultural  
20 Properties Survey?

21 A. That survey kicked off late last month, and, again,  
22 because of weather is probably not happening today. But  
23 I would say that the Yankton Sioux Tribe who are  
24 conducting those surveys are probably one-third complete  
25 with those surveys. We're hopeful they will complete

1       them by the end of October.

2       Q.    Are you aware of any concerns they've found?

3       A.    They have identified approximately 24 traditional  
4       cultural properties at this time, and we are awaiting  
5       more information and a confirmation.

6            The tribal elders have not visited all of those  
7       potential sites yet, and once they have we will be in  
8       discussion with the Tribe to discuss how best to avoid  
9       those areas.

10      Q.    Do you anticipate there being an effect on the  
11      project layout or facilities?

12      A.    Potentially.

13      Q.    Okay.  Is it fair to say, though, that you're  
14      working with the Tribe?

15      A.    We're working very closely with the Tribe.

16      Q.    Regarding the potential interference to the  
17      radiofrequency transmissions, has Prevailing Wind Park  
18      received a response from WAPA or any of the operators of  
19      the 3.2 multipoint microwave MAS facilities?

20      A.    We did receive a response from WAPA and the DOE  
21      which led us to move one of our turbines approximately  
22      50 feet, as they recommended.

23      Q.    Was the shift of the turbine location T 40, which  
24      you identified in your Rebuttal Testimony, due to one of  
25      those responses?

1 A. Yes. It was due to the WAPA response.

2 Q. Okay. Any communications from Northwestern Energy  
3 or the local cooperative?

4 A. No. We have not heard back from them. We're still  
5 tracking the issue.

6 MS. EDWARDS: Thank you, Ms. Canty. No further  
7 questions.

8 MR. DE HUECK: That brings us to Commission  
9 questions. And let's see. I think we start down here  
10 with Commissioner Nelson?

11 No questions.

12 Okay. Take us down to -- well, I was going to  
13 say Chairman Fiegen, but it looks like Commissioner  
14 Hanson, do you have any questions?

15 THE WITNESS: I thought for sure you would want  
16 to talk about birds. I'm a bird watcher too.

17 COMMISSIONER HANSON: Good. You need to stop in  
18 my office and we can chat off the record and you can see  
19 some of my paintings.

20 THE WITNESS: Will do.

21 COMMISSIONER HANSON: This day and age we're  
22 going to have to have a chaperone there too, though, so I  
23 don't get in trouble.

24 Mr. Pawlowski -- Pete Pawlowski said that this  
25 is all up to you. You get to make all the decisions

1       so --

2               THE WITNESS: Well, that's not entirely true.  
3 Peter is the one who will have to make the commitments to  
4 the Commission.

5               COMMISSIONER HANSON: All right. I love your  
6 love for biology. My mother was a biology teacher, and  
7 so all of us kids are prone to be on the more liberal  
8 side of environment. And I appreciate very much your  
9 dedication to that.

10              I think you're the only witness of all of the  
11 witnesses who's had direct -- Direct Testimony, the  
12 Supplemental Testimony, the Rebuttal Testimony, prefiled  
13 Testimony. And I might give you an opportunity to come  
14 up with another supplemental along the way. I probably  
15 have some questions.

16              You are in luck, though, because I left my long  
17 list of questions in my apartment this morning as I was  
18 coming here so now I have to go through I'll call them  
19 whooping cranes, the chicken scratch notes that I have  
20 here.

21              CHAIRWOMAN FIEGEN: Do you need a lunch break?

22              COMMISSIONER HANSON: Just have a friendly  
23 conversation. And I don't mean any of my questions to be  
24 sarcastic or troubling to you. I just want to get some  
25 information as evidence as we go through the process.

1 I'm going to turn first to your prefiled  
2 testimony. On page -- and you probably don't need to go  
3 to these most of the time that I refer to them.

4 But on page 4 the chart that was earlier  
5 referred to by your counsel it states, "Whooping Crane  
6 Habitat Review, August 2016." Was that when it was  
7 completed, or was it over an extended period of time?

8 Because I know in the other evidence it shows  
9 that there was surveys, et cetera. So is this apart from  
10 the surveys that were made?

11 THE WITNESS: This was separate from the  
12 surveys. This was a desktop-based activity. It was  
13 based on I want to say the National Land Cover Database,  
14 as well as a couple of other databases, including NWI  
15 mapping -- that's national wetland inventory mapping --  
16 to get at really where the wetlands were, what the size  
17 was, and sort of classify habitat in terms of  
18 suitability.

19 This was completed in 2016.

20 COMMISSIONER HANSON: Is that the last review  
21 then that you did? The last tabletop that you did?

22 THE WITNESS: It is the last review. But I will  
23 say that although the project boundary has changed  
24 somewhat, the approach to the assessment was such that  
25 for areas surrounding the project boundary in -- you

1 know, four cardinal directions were looked at to compare  
2 suitability, and ultimately the findings were that the  
3 project does not contain unique habitat for whooping  
4 cranes relative to the surrounding areas.

5 COMMISSIONER HANSON: Thank you.

6 Touch on the unique and critical terms that were  
7 used in your presentations in a little bit here so that I  
8 can understand the definition a little bit better.

9 On page 9 of the same document that I just asked  
10 you a question on, it speaks of two wetlands that will be  
11 permanently impacted. And as I look at the size of the  
12 acreage there, it looks like it's -- the total affected  
13 is approximately 183 or 84 feet, square feet total.

14 So these are quite tiny impacts, aren't they?

15 THE WITNESS: These are permanent impacts. And,  
16 yeah, our goal was definitely to stay under a half acre  
17 for permitting purposes so we would qualify for a  
18 nationwide permit.

19 COMMISSIONER HANSON: You certainly accomplished  
20 that.

21 I'm more concerned with the three intermittent  
22 streams that will be permanently affected. Some culverts  
23 are being used there.

24 Streams flow into other streams. Is there going  
25 to be an effect to other streams from those streams

1 downstream?

2 THE WITNESS: I don't expect so. I am going to  
3 guess here because I don't know the exact answer.

4 COMMISSIONER HANSON: That's fine.

5 THE WITNESS: When we talk about a permanent  
6 impact to a flowing stream, even if it's intermittent, I  
7 am thinking that we are probably putting in a culvert  
8 underneath the road to maintain flow.

9 COMMISSIONER HANSON: It shows that there's a  
10 culvert in the low water crossing for those.

11 THE WITNESS: Yeah. I have worked on projects  
12 before with Arizona crossings we call them out west or  
13 low water crossings, and the intent is the same, to  
14 maintain flow, even when they're dry.

15 Does that make sense? Not really.

16 COMMISSIONER HANSON: In Nevada it would make  
17 sense.

18 You referred a moment ago about unique, and on  
19 page 10 of the same document you speak to a couple of  
20 interesting -- well, a number of interesting things  
21 throughout all of your documents.

22 You state that whooping cranes are, in fact,  
23 federally listed species, and they're an endangered  
24 species that are present within the project area. You  
25 state that no designated critical habitat is present

1 within the project area. You also have used the word  
2 "unique."

3 To me that means that there is other types of  
4 habitat that are conducive to roosting, for instance, and  
5 foraging for whooping cranes so that these would not be  
6 critical to them and they would not be unique to them.

7 Is that a correct assumption on my part, or is  
8 there more to the definition?

9 THE WITNESS: Well, let me start by explaining  
10 the term "critical habitat."

11 COMMISSIONER HANSON: Thank you.

12 THE WITNESS: That should be a reference to  
13 designated critical habitat, which is a Fish & Wildlife  
14 Service designation. Those are areas that are set aside  
15 that often contain really, you know, wonderfully high  
16 quality habitat for a species, but they may also contain  
17 at the same time areas that could turn -- you know, over  
18 time evolve into that kind of high quality habitat but  
19 may not be occupied at the time.

20 Typically critical habitat that is designated by  
21 the U.S. Fish & Wildlife contains one or both of those  
22 categories, whether, you know, very high quality or  
23 habitat that they found a way to acquire and set aside  
24 as -- what am I trying to say? Habitat that is either  
25 high quality or could become high quality but it's not



1 necessarily occupied habitat.

2           So in the context of my prefiled testimony when  
3 I refer to critical habitat I'm referring to designated  
4 critical habitat.

5           And I think the second part of your comment or  
6 question was regarding the term "unique." I use that in  
7 the context that in comparison to the habitat surrounding  
8 the project, there's nothing unique about the habitat in  
9 the project area.

10           Does that mean that it does not contain habitat?  
11 No. That's not what that term means. It simply means  
12 that it is not easily distinguished from the surrounding  
13 habitat types.

14           COMMISSIONER HANSON: Thank you. Great  
15 explanation. I appreciate that.

16           On the same page there you refer to project  
17 facilities have been sited to avoid, to the extent  
18 practicable. Ambiguous words like that always bother me.

19           THE WITNESS: I come from an environmental  
20 consulting background so those are part of my lexicon  
21 that I need to let go of. I understand your frustration.

22           COMMISSIONER HANSON: Thank you. You feel my  
23 pain.

24           Additionally, you state, "Impacts to federal  
25 threatened and endangered wildlife species resulting from

1 project construction and operations and anticipated to be  
2 low" -- excuse me. "Are anticipated to be low due to the  
3 low likelihood and/or frequency of species present in the  
4 project area."

5 Can you define low to me?

6 THE WITNESS: Well, I would say very low to  
7 nonexistent. We can't rule them out completely. So I  
8 think there's a tendency to categorize things. People  
9 like to hear, you know, high, medium, low. Can I  
10 quantify that? I cannot.

11 We'll be taking -- if you continue reading that  
12 section on page 11 at the top there, it mentions the use  
13 of conservation measures from the Programmatic EIS that  
14 we are committing to.

15 COMMISSIONER HANSON: Thank you. I was going to  
16 ask you what those conservation measures are. That was  
17 my next questions. However, I'm actually going to skip  
18 that one.

19 In relationship to the whooping crane, when you  
20 say low, do you know what the present numbers are for the  
21 whooping crane?

22 THE WITNESS: I don't know the current  
23 population numbers, but I believe it's between 300 and  
24 400.

25 COMMISSIONER HANSON: When did the -- when does

1 migration take place of the whooping crane?

2 THE WITNESS: Spring and fall.

3 COMMISSIONER HANSON: Excuse me?

4 THE WITNESS: Spring and fall.

5 COMMISSIONER HANSON: A little more specific?

6 THE WITNESS: I can't be more specific because  
7 it's very much a factor of climate, or, you know,  
8 seasonal conditions influence that highly. So you may  
9 even see activity during, you know, summer and winter,  
10 depending on what's happening with the local weather.

11 COMMISSIONER HANSON: To an extent that's --  
12 well, to my knowledge at least, that's very true.

13 Does it also have to do with the length of the  
14 day? Length of the night?

15 THE WITNESS: I would expect it does. You know,  
16 during migration they're taking advantage of daylight  
17 hours, although I understand that sometimes they migrate  
18 in the dark. But that's pretty unusual.

19 COMMISSIONER HANSON: That's true. And in  
20 adverse weather I believe, as well. Would you agree?

21 THE WITNESS: I have heard of that, yeah.

22 COMMISSIONER HANSON: On page 12 of the same  
23 document it states that -- on line 332, "The project is  
24 likely to directly impact birds and bats."

25 And, of course, it's discussing whooping cranes

1 to a great extent there. And when you talk about low and  
2 population of 3 to 400, for me there's a huge difference  
3 between losing two whooping cranes as opposed to losing  
4 two starlings or two robins, et cetera, with the hundreds  
5 of thousands of population compared to the few hundred.

6 And these are -- this is a -- do you know -- I'm  
7 trying not to testify. Do you know how old this species  
8 is? How old it is?

9 THE WITNESS: I do not.

10 COMMISSIONER HANSON: All right. I'm trying to  
11 get a few things in evidence here, but that's okay. I  
12 thought you'd be reading up on this.

13 Well, I think this was touched on earlier  
14 because a lot of -- a person covered -- excuse me.  
15 Ms. Edwards covered a lot of the information pertaining  
16 to studies.

17 I'm twisted a little bit on what is said here on  
18 page 15 of the document. It refers to, "WAPA must  
19 analyze impacts of the entire project. However, WAPA's  
20 federal action is limited to the approval of the  
21 interconnection." And I -- I inserted "however" instead  
22 of "while" at the beginning of the sentence so it was  
23 more comfortable. But that's on line 419 and 420.

24 And then on 424 it states, "WAPA is preparing an  
25 EA for the project interconnection." And then on 48 it

1 says, "The EA for the project will focus on site-specific  
2 issues that are not already addressed in sufficient  
3 detail in the PIS."

4 To me that's saying that WAPA is only studying  
5 the interconnection. I know there's a PIS as well, but  
6 my question is how does this differ from an environmental  
7 impact statement? Are you familiar with those?

8 THE WITNESS: Yeah. I am. Environmental impact  
9 statements and environmental assessments.

10 COMMISSIONER HANSON: Thank you.

11 THE WITNESS: I'm sorry. Did you have anything  
12 further?

13 COMMISSIONER HANSON: Well, I'm curious. If  
14 it's specific to the connection, to me there's a lot more  
15 information that's necessary.

16 THE WITNESS: No. I agree with you. And I  
17 think that the technical way of referring to the project  
18 as being -- you know, the EA as being prepared for the  
19 interconnection is perhaps a little misleading.

20 The federal action is limited to the project  
21 interconnection. However, WAPA has taken jurisdiction  
22 over the entire project. So, you know, without --  
23 they're not just analyzing the interconnection. From the  
24 start they have been looking at the entire project.

25 COMMISSIONER HANSON: And does that mean the EIA

1 is -- or the PEIS is filling in the areas or the  
2 duplicative or --

3 THE WITNESS: Oh, no. It's -- I mean, the  
4 purpose of the PEIS or any Programmatic EIS is to talk  
5 more broadly about projects that might occur and  
6 potential impacts from projects. And there are  
7 stipulations for how you can tier off of or fall under a  
8 Programmatic EIS. And typically that requires that you  
9 follow all of the BMPs and other conservation measures,  
10 as well as other factors.

11 So the purpose of writing an EA -- or I should  
12 say the purpose for the PEIS is also to streamline future  
13 NEPA documentation. So by doing an EA, which is a much  
14 lighter version of an EIS, we are evaluating the  
15 site-specific factors for this project.

16 COMMISSIONER HANSON: Thank you.

17 I'm looking through -- you're answering multiple  
18 questions when you explain that. I appreciate that.

19 On page 19 under your conclusion on that same  
20 document, excuse me, you refer to that only 45 of the  
21 total 50,000 acres within the project area will be  
22 permanently impacted during the life of the project.

23 That seems minimal considering that there's 61  
24 wind towers and there's roads and et cetera, et cetera.  
25 Is that accurate?

1 THE WITNESS: I believe it is.

2 COMMISSIONER HANSON: All right. You're the  
3 expert, according to Peter.

4 And I believe you answered all the questions  
5 that I had.

6 Excuse me.

7 I really appreciate the effort from the  
8 standpoint of saying that we're going to shut down the  
9 wind turbines. It's not just the wind turbines. It's  
10 just the fact that they're there and, unfortunately, this  
11 is right along a flyway. And this is a very critical  
12 and unique bird. So I'm very concerned from that  
13 standpoint.

14 Help me with getting a tiny bit more comfortable  
15 with this because I'm still very uncomfortable. I don't  
16 see you putting -- or excuse me. I don't see the project  
17 placing a perimeter of observers with binoculars around  
18 this facility so that when they see there's some whooping  
19 cranes coming that they shut it down.

20 Are you familiar the whooping cranes -- with the  
21 speed, with the velocity of their flight?

22 THE WITNESS: Well, I can't give you numbers,  
23 but I have seen them -- I have not seen whooping cranes  
24 migrating, but I am familiar with sandhill crane  
25 migration behavior.

1           COMMISSIONER HANSON: So if you were to  
2 understand that the flight is approximately 30 miles an  
3 hour, would that surprise you?

4           THE WITNESS: No.

5           COMMISSIONER HANSON: Okay. So if they're two  
6 miles away, that would give approximately 40 minutes --  
7 excuse me. 4 minutes to --

8           THE WITNESS: 40 minutes sounds great, but 4  
9 minutes probably is better.

10          COMMISSIONER HANSON: If they're walking. That  
11 would give them approximately 4 minutes to have the  
12 turbines shut down.

13          Do you have any idea how long it would take to  
14 shut the turbines down?

15          THE WITNESS: I can't give you an exact number.  
16 However, I will let you know that we have developed a  
17 software technology with GE for one of our other projects  
18 that allows monitors to remotely shut down turbines, and  
19 we would be happy to have another use for it. We expect  
20 to possibly use it on this project.

21          COMMISSIONER HANSON: So as I understand this,  
22 someone would first have to sight the whooping crane.  
23 And if there's no one to sight the whooping crane,  
24 they're not going to get shut down.

25          Have you had any conversation on -- when you



1     were discussing the two-mile limit, any discussion on the  
2     potential for having -- how are you going to sight them?  
3     How are you going to know that they're -- that they're  
4     coming?

5             THE WITNESS:  As I mentioned previously, I think  
6     in response to Ms. Edwards's question, we are still  
7     developing that monitoring man and the curtailment plan  
8     so I can't give you details at this moment.

9             However, I can tell you that a similar plan has  
10    been used, and it's been very successful.  I believe the  
11    author's name is Nagy.  You may know Dr. Laura Nagy.  She  
12    does a lot of avian work.

13            COMMISSIONER HANSON:  Do you know how long it  
14    takes for the whooping crane to migrate from Aransas,  
15    A-R-A-N-S-A-S, National Wildlife Refuge in Texas and the  
16    Gulf, to I believe it was the Wood Buffalo National Park  
17    in Canada?

18            Do you know how long it takes?

19            THE WITNESS:  I think I do.  It varies by  
20    season.  So I can't remember which is which but one  
21    direction it's about six weeks and I believe the other  
22    direction is about two months.

23            COMMISSIONER HANSON:  All right.  I understood  
24    it takes approximately three weeks but --

25            THE WITNESS:  That sounds much better.

1           COMMISSIONER HANSON: That would surprise you.  
2    Okay. As yours does me.

3           The reason I'm asking that question is it's  
4    pertinent to how long they would be likely -- and when  
5    they would pass through South Dakota. And if it takes --  
6    if they're leaving when I understand -- do you know when  
7    they leave?

8           THE WITNESS: I do -- I do not know precisely.

9           COMMISSIONER HANSON: Okay. Do you know when  
10   they arrive in Canada?

11          THE WITNESS: I do not.

12          COMMISSIONER HANSON: Okay. Would you, subject  
13   to check, believe that it's April and very early May when  
14   they arrive in Canada?

15          THE WITNESS: That would be consistent, I think,  
16   with seasonal migrations of many species.

17          COMMISSIONER HANSON: Okay. Are you familiar  
18   enough with them to know how long they would likely be  
19   and when they would arrive and leave South Dakota?

20          THE WITNESS: I am not. However, I would expect  
21   we would be interacting with any kind of database or  
22   group that is, you know, keeping tabs on the species and  
23   their progress in migration since they are charismatic  
24   megafauna. I expect they have a lot of cheerleaders who  
25   are keeping records of their behavior during any

1 migration season.

2 COMMISSIONER HANSON: The reason I ask that --  
3 ask these questions is because I startled one of my  
4 compatriots here, fellow Commissioners, when I asked  
5 Mr. Pawlowski -- excuse me -- Peter Pawlowski if the  
6 company would be willing to shut the turbines down during  
7 that migration period. And certainly if they're only  
8 going to be in South Dakota for a couple weeks as opposed  
9 to three months or whatever, it makes a difference.

10 Would you agree or disagree with that?

11 THE WITNESS: I would disagree. I think that,  
12 as I mentioned before, this monitoring and curtailment  
13 program has been pretty successful. It's been shown to  
14 be successful, at least one other operating wind project.  
15 And, you know, we are already committed to that.

16 COMMISSIONER HANSON: Forgive me. I didn't mean  
17 to trespass on your --

18 THE WITNESS: Oh, no problem. Were you asking  
19 which wind project?

20 COMMISSIONER HANSON: Correct.

21 THE WITNESS: I cannot recall.

22 COMMISSIONER HANSON: Previously we've been  
23 dealing with wind projects that are 70 miles, 100 miles  
24 outside of the flyway of whooping cranes, and we've  
25 provided that the -- what you said, that they would be

1 shut down upon sighting whooping cranes.

2           However, now we're talking about being in the  
3 flyway area and where your surveys and studies show that  
4 they will very likely -- and that's a quote, "likely," be  
5 passing through and that there are not necessarily unique  
6 or critical habitat. However, there is that type of  
7 habitat surrounding and within the facility. So wouldn't  
8 that mean that we'd need to take greater care than  
9 previously?

10           THE WITNESS: Well, I will -- I'd like to add to  
11 what you just said, which is -- well, maybe that's not in  
12 addition but to what I said previously.

13           I cited Dr. Laura Nagy, and she was behind this  
14 project I was referencing -- although I can't remember  
15 the name of it -- in finding that this monitoring and  
16 curtailment plan was very successful. They had no  
17 fatalities. They had quite a large number of whooping  
18 cranes observed during the study period and also came out  
19 of the study believing that the cranes are able to  
20 navigate around the turbines pretty safely.

21           So they observed the cranes flying directly  
22 through the wind project.

23           COMMISSIONER HANSON: Are you familiar with the  
24 mortality rate of whooping cranes and of cranes in  
25 general?

1 THE WITNESS: At wind projects?

2 COMMISSIONER HANSON: Yes.

3 THE WITNESS: Yes.

4 COMMISSIONER HANSON: And transmission lines.

5 THE WITNESS: Yes.

6 COMMISSIONER HANSON: And isn't it a fact that  
7 there are more cranes killed by transmission lines and  
8 objects on the ground than any -- well, I believe one was  
9 by a hunter. Than other forms of mortality?

10 THE WITNESS: Well, I thought we were discussing  
11 this project, which is limited to wind turbines. There  
12 have not been any whooping crane fatalities observed at  
13 wind projects.

14 COMMISSIONER HANSON: Are there a lot of wind  
15 projects right along their migration path at this  
16 juncture?

17 THE WITNESS: There are a number of projects  
18 operating. The Beethoven project, obviously.

19 COMMISSIONER HANSON: Correct.

20 THE WITNESS: There are a few in North Dakota, I  
21 believe. And I believe there's a wind project nearby on  
22 the Nebraska --

23 COMMISSIONER HANSON: Have you examined the  
24 migration path of the whooping crane in relationship to  
25 these projects?

1           THE WITNESS: Not specifically to other  
2 projects, I have not.

3           COMMISSIONER HANSON: Okay. Subject to check,  
4 would you be surprised if those projects are considerably  
5 farther to the east of the flyway than this project?

6           THE WITNESS: As I mentioned, I haven't taken an  
7 in-depth look at the migration path relative to other  
8 wind projects in the area.

9           COMMISSIONER HANSON: The habitat review states  
10 that there's lots of suitable habitat in the general area  
11 and that whooping cranes will likely migrate over and  
12 through the project area during some period of migration.

13           So when I look at the permit conditions that are  
14 jointly proposed by the Applicant and Staff, I see on No.  
15 34 that the Applicant agrees to undertake two years of  
16 independently conducted postconstruction avian mortality  
17 monitoring for the project and to provide a copy of the  
18 report to the USFWS, GFP, and the Commission.

19           And, of course, Ms. Edwards asked you a question  
20 regarding that, how long it would be. You replied two  
21 years. Don't you think in relationship to an endangered  
22 species, that it should be longer, that it should be  
23 ongoing, and that action should be taken immediately if  
24 whooping cranes are killed?

25           THE WITNESS: I think Ms. Edwards was asking

1 about something else. Was it the monitoring program or  
2 the curtailment program? Not necessarily the  
3 postconstruction monitoring.

4 In any event, we have conducted two years of  
5 preconstruction surveys, have not seen a whooping crane,  
6 although we agree that there is a potential for them to  
7 fly over or maybe even through the project area.

8 The Beethoven project, which is immediately  
9 adjacent to the northern boundary of the project, has not  
10 seen any whooping cranes. And also we made the effort  
11 earlier in the project's life to move it north and away  
12 from the Missouri River where I believe there's some  
13 really high quality habitat for the species.

14 So the two years is really consistent with  
15 industry standards. And I guess I don't really see a  
16 cause to extend the postconstruction studies.

17 With that said, we are committing to an adaptive  
18 management program and will be, you know, obviously  
19 assessing actual fatalities found during postconstruction  
20 monitoring against the estimates that we have going into  
21 the project from the preconstruction avian use surveys.

22 So if there is a significant difference between  
23 the actual observed fatalities and estimated fatalities,  
24 then we'll be discussing with the service what can be  
25 done. And, you know, I can't say that additional

1 postconstruction monitoring would not be one of those  
2 things. It may be. Obviously, we would like to look at  
3 other options first.

4 COMMISSIONER HANSON: That answer and dialogue  
5 gives me some comfort. I appreciate your answer.

6 I am a little concerned when discussing the  
7 standard survey and the points that are -- certainly  
8 there's I believe 16 points or something like that.

9 THE WITNESS: That's correct.

10 COMMISSIONER HANSON: And not knowing exactly  
11 when the migration takes place and looking at this from  
12 my limited knowledge on their migration, it appears that  
13 it's a hit and miss on observation of them. Because if  
14 you're not observing -- and I don't mean to enter that as  
15 evidence, but I just want you to know that there's some  
16 discomfort level there as to whether you're observing at  
17 the right times during migration.

18 I see that it is from March to May that you have  
19 twice per month. And if they're migrating when I think  
20 they are, then the March one pretty much misses it --

21 THE WITNESS: Again, I think you are referring  
22 to the postconstruction fatality monitoring, and we will  
23 be conducting actual operational monitoring specifically  
24 for cranes in a separate enterprise. It will be going on  
25 daily during the migration period.



1           COMMISSIONER HANSON: If this passes -- I won't  
2 mean to be a thorn in your side by any means, but if it  
3 passes, I would certainly like to participate in one of  
4 those.

5           Thank you very much for your testimony. I  
6 apologize for any discomfort that I may have caused you.  
7 I appreciate the information.

8           THE WITNESS: No discomfort. Thank you.

9           MR. DE HUECK: Chairman Fiegen, do you have any  
10 questions?

11          No.

12          With that, Commissioner Nelson.

13          COMMISSIONER NELSON: Once again, I wasn't  
14 intending to weigh in on whooping cranes, but  
15 Commissioner Hanson's questions raised a couple of  
16 thoughts.

17          Are you familiar with the whooping crane  
18 migration path and the likelihood of occurrence bands  
19 within that path?

20          THE WITNESS: Yes, I am.

21          COMMISSIONER NELSON: And is it correct that  
22 this project is located in an area where 10 percent or  
23 less of that migration would occur?

24          THE WITNESS: I believe that's correct.

25          COMMISSIONER NELSON: And just so that I

1 understood you correctly and understood what you have in  
2 the whooping crane habitat review, no whooping cranes  
3 have ever been killed by a wind tower; correct?

4 THE WITNESS: That is correct.

5 COMMISSIONER NELSON: Thank you.

6 MR. DE HUECK: With that redirect, Ms. Smith.

7 MS. SMITH: I think I just have one or two.

8 REDIRECT EXAMINATION

9 BY MS. SMITH:

10 Q. With respect to the monitoring that you were  
11 discussing regarding whooping cranes during the migration  
12 period, are you coordinating directly with the U.S. Fish  
13 & Wildlife Service on establishing when that would occur?

14 A. Yes, we are.

15 Q. And you've engaged West to consult as well?

16 A. That's right.

17 Q. So to be blunt, you're not relying on your own  
18 memory of the migration corridor?

19 A. Thank goodness, no.

20 Q. And so you will be -- you will be taking any  
21 recommendations both from your consultant and U.S. Fish &  
22 Wildlife Service as far as establishing when and how to  
23 implement that plan?

24 A. Yes.

25 MS. SMITH: I have no further questions.

1 MR. DE HUECK: Mr. Almond, recross based on  
2 Commission questions?

3 MR. ALMOND: None.

4 MR. DE HUECK: Mr. Fuerniss.

5 MR. FUERNISS: No questions.

6 MR. DE HUECK: Ms. Jenkins.

7 MS. JENKINS: I just have one.

8 RECROSS-EXAMINATION

9 BY MS. JENKINS:

10 Q. Bridget, you mentioned the WAPA and that they were  
11 evaluating the entire project. Did -- are they  
12 evaluating --

13 Something you said made me think that they were  
14 evaluating more than the footprint of the project.

15 A. They are evaluating the interconnection at the Utica  
16 Junction substation as well as a transmission line that  
17 leads from the project to the substation.

18 Q. But other than that, nothing outside of the --

19 A. No.

20 MS. JENKINS: Okay. Thank you.

21 MR. DE HUECK: Ms. Pazour.

22 RECROSS-EXAMINATION

23 BY MS. PAZOUR:

24 Q. Eagles, did you do a study on them?

25 A. Yes, we did.

1 Q. How long?

2 A. We did two years of nest monitoring, and prior to  
3 that we did two aerial nest surveys.

4 Q. On what dates?

5 A. For the nest searches? I'm not sure of the exact  
6 dates. However, I can find those.

7 MS. SMITH: I think if you look in the  
8 Application at the dates that are in the table or in your  
9 testimony.

10 Exhibit A12 I would look at.

11 A. I have listed here only one of the nest surveys, but  
12 the one in 2016 which was the second one was conducted in  
13 April, April of 2016. This is the time of year when  
14 eagles are typically building their nests and choosing  
15 their mates and get a lot of housekeeping activity.

16 Q. Okay. And the other date you said?

17 A. We conducted a nest survey as well, an aerial one,  
18 in 2015. I don't have the date of that handy. We were  
19 missing this survey, and I just learned about it the  
20 other day. So I don't have the date in here. It's not  
21 covered.

22 But it was conducted before the 2016 survey. And I  
23 believe they found fewer nests during that earlier  
24 survey.

25 And then we also conducted an updated search through

1 the Natural Heritage Program of known bald eagle nest  
2 sites, and that was just conducted over the last week.  
3 And they identified a single active nest, the same one  
4 that we've been monitoring.

5 MS. PAZOUR: Okay.

6 MR. DE HUECK: Staff, any recross?

7 MS. EDWARDS: Yes. May I approach the witness?

8 MR. DE HUECK: Yes.

9 RECROSS-EXAMINATION

10 BY MS. EDWARDS:

11 Q. Ms. Canty, can you identify the exhibit I just  
12 handed you?

13 A. Yeah. The exhibit is the permit conditions jointly  
14 proposed by Applicant and Staff.

15 Q. Directing your attention to Proposed Condition  
16 No. 3, will you review that briefly?

17 A. Applicant shall complete the WAPA environmental  
18 review process as required by the National Environmental  
19 Policy Act or NEPA. Further, Applicant shall comply with  
20 and implement any requirements or commitments set forth  
21 in the WAPA, NEPA review. The Applicant expects the  
22 environmental review to be composed of an Environmental  
23 Assessment. And then Applicant would be required to  
24 comply with applicable mitigation measures set forth in  
25 the Upper Great Plains Wind Energy Programmatic EIS.

1 Q. Would you interpret that to apply to whooping crane  
2 concerns?

3 A. Yes.

4 MS. EDWARDS: Thank you. No further questions.

5 MR. DE HUECK: Ms. Canty, thank you for your  
6 testimony. You may step down.

7 (The witness is excused.)

8 MR. DE HUECK: It's 10 minutes to 12:00. I  
9 think, go ahead and put another witness on, and we'll get  
10 your first part out of the way, come back for  
11 cross-examination.

12 Does that sound good?

13 MS. SMITH: Certainly.

14 MS. EDWARDS: Can I ask a clarification quickly?  
15 Will the Applicant be calling Mr. Pawlowski back up to  
16 answer the decommissioning question?

17 MS. SMITH: Yes. And I'm not certain exactly  
18 when, whether we'll wait to do it towards the end or  
19 we'll do it right after our initial.

20 We can discuss that at a break, if that's okay.

21 We would call Chris Howell.

22 Chris Howell,  
23 called as a witness, being first duly sworn in the above  
24 cause, testified under oath as follows:

25

DIRECT EXAMINATION

BY MS. SMITH:

Q. Mr. Howell, could you please introduce yourself to the Commission.

A. Hi. My name is Chris Howell. I work for Burns & McDonnell, and I was hired to perform the sound predictions for the wind farm.

Q. And I'm going to tell you you have to sit up to your mic. and speak up a little bit.

A. Apologies.

Q. No problem.

Did you file Prefiled Direct Testimony with the Application in this matter?

A. I did.

Q. And is that Prefiled Direct Testimony Exhibits A9 and A9-1? And go ahead and take the time to flip through those so you have them handy.

A. Yes.

Q. And did you also file Rebuttal Testimony on September 26, 2018?

A. I did.

Q. And is your Rebuttal Testimony provided as Exhibits A10 and A10-1?

A. Yes.

Q. And is Exhibit A10-1 updates of sound modeling that

1 was conducted for the project?

2 A. Correct.

3 Q. And then is A10-2 the full report that contains  
4 those same results?

5 A. That's correct.

6 Q. And can you explain the changes that were made that  
7 resulted in needing to do an update to the sound modeling  
8 analysis?

9 A. There were two turbines that moved slightly. One  
10 turbine was removed, and the hub height was changed to  
11 111.5 meters.

12 Q. And did you also account for the additionally  
13 identified receptors?

14 A. Yes. Yes, we did.

15 Q. And can you just give a brief summary of the topics  
16 that you've covered throughout your testimony?

17 A. In general I discussed our sound study, the  
18 monitoring that was done, the modeling that was done, and  
19 I responded to some of the criticisms of our study.

20 MS. SMITH: My understanding is that we did not  
21 have the Rebuttal Testimony accepted at this point so I'd  
22 move for admission of Exhibit A10, A10-1, and A10-2.

23 MR. DE HUECK: Who was the objector to that?

24 MR. ALMOND: I'd like to reserve my objection  
25 until I've had the opportunity to cross-examine the



1 witness. May I be permitted that?

2 MR. DE HUECK: We need to get his testimony in  
3 for you to cross-examine.

4 MR. ALMOND: Can it be admitted on a temporary  
5 basis?

6 MS. SMITH: I think you would move to strike if  
7 you chose to move to strike, but it would need to come in  
8 so that we can discuss, it is my understanding.

9 MR. DE HUECK: I would agree with that. It make  
10 sense.

11 MR. ALMOND: For the record, I agree too. That  
12 seems to be a process that makes sense.

13 For the record, I would object for lack of  
14 foundation.

15 MR. DE HUECK: Okay. Overruled. I will admit  
16 his testimony at this point.

17 And then you're tendering him for  
18 cross-examination? And his exhibits?

19 MS. SMITH: Yeah. I'll just have a couple more  
20 questions. I wanted to make sure before I asked anymore  
21 that we had that in.

22 MR. DE HUECK: Did we have any other objections  
23 to his testimony?

24 Staff?

25 No. Okay.

1 Q. Other than the updated sound study that you provided  
2 and what we've discussed, do you have any additions or  
3 corrections to your prefiled testimony?

4 A. I don't believe so.

5 Q. And if I asked you the same questions today, would  
6 you provide the same answers?

7 A. Yes.

8 MS. SMITH: I'd offer Mr. Howell for  
9 cross-examination.

10 MR. DE HUECK: We're going to take a break now  
11 for lunch.

12 MS. SMITH: Okay.

13 MR. DE HUECK: Currently it's noon.

14 1:15 --

15 (Discussion off the record.)

16 MR. DE HUECK: We will recess and come back at  
17 1:30.

18 (A lunch recess is taken.)

19 MR. DE HUECK: Good afternoon, everyone.

20 EL18-026 is back in session.

21 We are still on Applicant's case in chief. We  
22 have Mr. Howell on the stand and subject to  
23 cross-examination. Mr. Almond, you may begin.

24 And, Mr. Howell, I'll remind you you're still  
25 under oath.

CROSS-EXAMINATION

BY MR. ALMOND:

Q. Mr. Howell, you performed the sound study for this project; correct?

A. Correct.

Q. And I was taking a look at your CV that was attached to your prefiled testimony. I notice there isn't a publication list on there.

Have you written any published papers on the topic of noise created by wind turbines?

A. No.

Q. Are you a -- excuse me if I butcher this word, but an acoustician? Would you consider yourself an acoustician?

A. I perform voice studies on a routine basis for the last 16 years. I'm a member of the Institute of Noise Control Engineering, which requires rigorous academic and professional qualifications to be accepted as a member.

Q. Does that qualify you as an acoustician, in your opinion?

A. I don't know the definition of acoustician.

Q. Neither do I, but I figured I'd ask you.

A. I work professionally in the acoustics business.

Q. Given you haven't published any papers, would you consider yourself more of a practitioner as opposed to an

1 academic?

2 A. Correct.

3 Q. Okay. Now in reviewing the prefiled testimony in  
4 this matter, I noticed that PUC Staff's witness David  
5 Hessler criticized your sound study for not considering  
6 how the community may respond to this project.

7 Do you remember that criticism or critique that  
8 Mr. Hessler provided --

9 A. Yes.

10 Q. -- of your study?

11 A. I read his testimony.

12 Q. And you believe that criticism is misplaced;  
13 correct?

14 A. Community response is not a requirement for  
15 regulatory performance.

16 Q. So because there's no regulatory requirement  
17 requiring you to analyze the community response to this  
18 project, you thought it was not necessary to look into  
19 that issue?

20 A. I did not perform any type of analysis like that  
21 because one was not required.

22 Q. And I assume you're familiar with the ANSI standards  
23 on noise; correct?

24 A. Generally. There are lots of them.

25 Q. And did you have the opportunity to review

1 Mr. James's prefiled testimony?

2 A. I did.

3 Q. And he referred to a specific section of the ANSI  
4 standards. And it might help if you have that in front  
5 of you. And that's exhibit -- that's Exhibit I-1 at  
6 page 3, which is not admitted yet, but I'm going to put  
7 my questions to the ANSI standards part of that exhibit.

8 MR. ALMOND: Any objection to that?

9 MS. SMITH: No objection.

10 Mr. Almond, do you mind telling me again the  
11 name of the exhibit? I may be on the wrong one.

12 MR. ALMOND: Yeah. I think I may have said the  
13 wrong one.

14 Exhibit I-1, page 3.

15 MS. SMITH: Is that Mr. James's testimony? Is  
16 that what you're referencing?

17 MR. ALMOND: Yep.

18 MS. SMITH: Okay. Thank you.

19 Q. All right. Do you have Exhibit I-1 in front of you?

20 A. I do.

21 Q. And you're on page 3 of Exhibit I-1?

22 A. Yes.

23 Q. Do you see the ANSI standards that Mr. James  
24 references there?

25 A. I do.

1 Q. And those ANSI standards were created by the  
2 Acoustical Society of America; correct?

3 A. In coordination with others, yes.

4 Q. And those standards in front of you specifically  
5 talk about predicting the long-term community impact;  
6 right?

7 A. They don't specifically talk about that. They talk  
8 about criteria to include.

9 Q. For how to analyze how a community's going to  
10 respond to a project.

11 A. They do. There are specific clauses around that that  
12 is not included here. If you read the standard, it  
13 specifically states in NXF, as well as Section 8.3, these  
14 are for yearly average sound levels and not to be applied  
15 on short durations.

16 Q. And it talks about when it comes to community  
17 response to a project is it generally accepted that when  
18 you have a quiet rural community, the community responds  
19 to any increase in noise maybe greater than a community  
20 responds in a louder environment for the same change?

21 A. It's going to be very dependent on the situation.

22 Q. And the ANSI standards recommend that when you're in  
23 a quiet environment, when you have an increase in sound  
24 that the community may respond 15 decibels -- or respond  
25 as if a 15-decibel increase was applied to that community

1 even though it wasn't.

2 That's what those ANSI standards are talking about;  
3 right? When it talks about community responses?

4 A. Again, this is for a yearly average and not for  
5 short-term sound level, that that is what the standard is  
6 saying, yes.

7 Q. So let's take an example. A quiet rural community  
8 would you say, would be what? 5 decibels --

9 A. Again, it's going to depend on the community.

10 Q. What would you consider a quiet rural community?  
11 What decibel range?

12 A. It varies all over the place. I've seen anywhere  
13 from the 25 you mentioned on up. We had measured levels  
14 of 45 here.

15 Q. And we'll talk about your ambient measurements here  
16 in a bit. But generally is a community that's 25  
17 decibels considered a quiet community?

18 A. Again, ambient changes every day. It changes every  
19 second. I would say, yes, a quiet community would be in  
20 the 25 to 35 range.

21 Q. So going back to 25 to 35 range?

22 MS. SMITH: Chris, can I ask you to scoot your  
23 mic. closer. At least I'm having trouble hearing.

24 THE WITNESS: Sorry. Yes.

25 Q. Just so I understand that ANSI standard better -- we

1 can talk more with Mr. James about it when he gets up  
2 here. But my understanding of that ANSI standard on  
3 page 3 of Exhibit I-1 is that if you have an ambient  
4 level of, say, 25 and an outside noise event increases  
5 the ambient level to 30, the community may respond as if  
6 the noise was increased to 45 even though it wasn't.

7 Is that my correct interpretation of that ANSI  
8 standard?

9 A. Partly. There's a large distinction between a  
10 yearly average and a short duration sound level.

11 Q. Right. But if the yearly average is 25 and it gets  
12 increased to 30 on a yearly average --

13 A. Yes. If you went from 25 to continuously at 30 or  
14 above, the community would respond differently in  
15 different areas. ANSI suggests a rural area could be 5,  
16 10, 15, depending on the criteria. The value itself  
17 doesn't change. Just individual's responses to that.

18 Now I should mention that all individuals all  
19 respond differently. So it's a very broad stroke on an  
20 average yearly sound level.

21 Q. And according to -- will you consider ANSI the  
22 industry standards?

23 A. It's hard to answer that question. There are  
24 different standards for different things.

25 Q. Well, you certainly -- I think you've cited ANSI in



1 your report, didn't you?

2 A. Correct. For various things ANSI is the appropriate  
3 standard.

4 Q. So just so I'm -- understand this correctly because  
5 I'm still a little unclear --

6 A. Just to make a distinction, ANSI has hundreds of  
7 standards, and very specific standards apply in certain  
8 situations.

9 Q. And the standard we're discussing here says that --  
10 correct me if I'm wrong, but it says that a quiet  
11 community, one that's, for example, 30 dBA, if it gets  
12 increased to 35 dBA on an annual basis, that community  
13 might respond as if that increase is actually along the  
14 lines of 50 dBA, even though the actual noise is still  
15 only 35.

16 A. Again, it would be very specific to the person and  
17 to the community that it's in.

18 Q. But that ANSI standard asks acousticians to take  
19 that into account when planning new projects in quiet  
20 areas; correct?

21 A. It is a recommended guideline. If that type of  
22 analysis is necessary.

23 Q. Can you go to your sound study now for me, please,  
24 which I believe is Exhibit A10.

25 Can you go to page 8 of that exhibit.

1 A. Page 8. I'm sorry. Which?

2 Q. The revision history page.

3 A. Okay. Yes.

4 Q. First let me ask you, when were you first engaged to  
5 work on this project?

6 A. It would have been probably in early March.

7 Q. March of 2018?

8 A. Correct.

9 Q. And then if you could just -- it kind of looks  
10 self-explanatory, but could you just explain what this  
11 table's showing?

12 A. This table shows basically every time we reissued  
13 this report.

14 Q. So that original release, was that the time that --  
15 I guess maybe we can get here quicker.

16 How many times did the turbine layout change since  
17 you were engaged to review this project?

18 A. I do not know the exact number of times the layout  
19 changed outside of times that I ran the model. The model  
20 was run for four different layouts.

21 Q. And how different were those four different layouts?

22 A. I'm sorry. Five layouts.

23 Not significantly.

24 Q. Okay. So there were no significant changes to the  
25 layouts when you were reviewing them?

1 A. It depended. On the last one the -- one of the  
2 turbines was removed completely so that's a fairly  
3 significant change.

4 Q. And two of them were moved a little bit?

5 A. Correct.

6 Q. And then I think you also -- the analysis included,  
7 I think, an increase in height?

8 A. Correct.

9 Q. But aside from that, the majority of -- or the  
10 layout remained pretty consistent throughout your  
11 analysis?

12 A. The overall footprint of the project did not change,  
13 as far as I'm aware.

14 Q. And looking at page 8 of Exhibit A10 it says,  
15 "Incorporate client comments," there on May 14, 2018.

16 Do you recall what those client comments were?

17 A. I do not.

18 Q. At any point did you or anyone from Burns &  
19 McDonnell recommend a turbine location be shifted or  
20 adjusted?

21 A. I do not believe so. If something had shown up in  
22 the model, we would have suggested a move, but I don't  
23 believe we were ever close to the limits on this project  
24 so I don't think we suggested that.

25 Q. If you say something were to show up in the model,

1     what are you talking about? What would show up in the  
2     model that would --

3     A.    So when we run the model we would, you know, input  
4     the data from the vendor, input the terrain for the area.  
5     Various things like that. The specifications for the  
6     project itself.

7           We would then run the model using industry standard  
8     methods and come up with results for the individual  
9     receivers.

10          An analysis would then be performed on if any of  
11     those receivers exceeded the criteria that were  
12     identified for the area. And if they exceeded, we would  
13     suggest moving turbines or eliminating turbines or  
14     something like that. However, in this scenario I don't  
15     believe that happened. I believe it was, hey, your  
16     layout looks good. Let us know if we need to rerun it if  
17     you change anything.

18     Q.    And the criteria that was identified through the  
19     area, were those the noise regulations that we've been  
20     talking about during this process of 45 dBA?

21     A.    Correct.

22     Q.    Were there any other criteria for the project that  
23     you were considering aside from 45 dBA?

24     A.    No.

25     Q.    Now I want to talk a little bit about just turbine

1 noise in general. Can you talk to me about turbine noise  
2 in general? I assume you know kind of how the noise in  
3 turbines works?

4 A. Somewhat, yes.

5 Q. What operating conditions in the turbine lead to  
6 higher sound levels?

7 A. Higher power output. So faster spinning blades.

8 Q. Anything else?

9 A. Generally that's the maximum sound level of -- would  
10 be at its max rated speed.

11 Q. What weather conditions would lead to the highest  
12 sound levels?

13 A. Typically it would be some sort of ground-based  
14 inversion. So if the temperature decides to flip and  
15 create a low ceiling, so basically low cloud cover, sound  
16 can't escape, and that would create the worst-case  
17 scenario.

18 Q. I don't know what ground-based inversion is. Can  
19 you explain that to me?

20 A. It's an atmospheric inversion similar to like --  
21 like basically today. If it weren't precipitating, the  
22 low ceiling -- low cloud ceiling would be an inversion.

23 Q. What about daytime versus nighttime? Is there any  
24 distinction in those two time periods for how noise is  
25 generated from wind turbines?

1 A. It would be directly related to the wind, the hub  
2 height.

3 Q. Would you agree that those living around turbines  
4 generally hear the noise created by the turbines more so  
5 at night than during the day?

6 A. It would depend on the day and the night. Typical  
7 across the country would be the nighttime people are more  
8 sensitive to sound levels than they are during the day.

9 Q. Can you explain why that is?

10 A. Generally the -- extraneous noises in the area,  
11 traffic, things like that just die off at night so  
12 there's nothing to mask the other sources. Things like  
13 wind continue at night.

14 Q. And nighttime, isn't it true that often the case is  
15 is that the wind at ground level is a lower mile per hour  
16 than the wind at, say, 590 feet?

17 A. It can be. I can't qualify or quantify the  
18 percentage for you.

19 Q. But quite frequently?

20 A. It can happen. I don't have a distribution of it.

21 Q. Changing a little bit of a new topic now, but still  
22 about general operations of wind turbines and how it  
23 affects the sound.

24 How does the change in a blade angle affect the  
25 sounds emitted by a wind turbine?

1 A. Generally pitching the blade will allow it to move  
2 easier through the wind, thereby reducing the friction,  
3 producing eddies, different things like that, off the  
4 backside of the blade, reducing sound levels.

5 Q. Is there some proportion you can point us to where  
6 if the blade is at an incline of 10 degrees versus  
7 1 degrees, how the sound is going to change?

8 A. I cannot point to that.

9 Q. Have you ever conducted any studies of operating  
10 wind farms after receiving complaints raised by people  
11 living around the turbines?

12 A. Not after receiving complaints.

13 Q. But you have performed studies of operating wind  
14 farms?

15 A. Yes.

16 Q. I'm going to ask you a question about your Direct  
17 Testimony, which is Exhibit A9. Feel free to flip there  
18 if you want. I don't think you'll need it.

19 A. Okay.

20 Q. My question is on page 2 you say that the sound  
21 commonly associated with a wind turbine is described as a  
22 rhythmic whoosh caused by aerodynamic processes?

23 A. Yes.

24 Q. Can you explain more about what that whoosh is?

25 A. As the blade passes by the tower there is a certain

1 amount of air that is pushed against the tower and off of  
2 the backside of the blade. That is the whoosh generally.

3 Q. The tower and the blade comes around, and every time  
4 the blade passes in front of the tower it bounces off the  
5 tower and creates a whoosh?

6 A. It doesn't necessarily bounce off the tower.

7 Q. Hits the tower.

8 A. It can hit the tower, yes.

9 Q. And creates a whoosh sound.

10 A. Generally goes around the tower.

11 Q. Have you read or heard anyone describing what they  
12 believe to be sounds created from fluctuating or  
13 pulsating infrasound in low frequency noise?

14 A. I've seen a few studies here and there, but nothing  
15 that I've studied.

16 Q. And do people who describe the sound that they are  
17 experiencing -- do they describe it as that same type of  
18 whoosh?

19 A. It varied by the respondents.

20 Q. Are you aware of the claim that wind turbines create  
21 the biggest problems with noise inside the home at night  
22 versus during the day?

23 A. I've seen a few studies such as -- that were brought  
24 up in Intervenor testimony that I looked through. Yes.  
25 I've seen that.



1 Q. And we'll talk more about Mr. James, but some  
2 acousticians point to the characteristics of fluctuating  
3 infrasound and low frequency noise as more of the problem  
4 inside at night, especially a quiet bedroom, than when  
5 outdoors during the daytime, and that is why people will  
6 complain more so at night than during the day.

7 Do you have a response to that claim that  
8 acousticians are putting forth, that theory that  
9 acousticians are putting forth?

10 A. In general people are more sensitive at night.

11 Q. And the reason why some acousticians are theorizing  
12 that the reason why people are more sensitive at night is  
13 due to the infrasound and low frequency noise.

14 My question is do you have a position one way or the  
15 other on whether that's the case or if it's something  
16 else that causes this increased sensitivity at night?

17 A. Yeah. I don't study sensitivity in general so  
18 that's a question for someone else.

19 Q. Shifting to another gear now, I want to talk about  
20 your personal experiences with wind turbine noise. I  
21 assume you've had personal experience listening to wind  
22 turbine noise?

23 A. Yes.

24 Q. And have you listened to a wind farm operating at  
25 full operational speeds?

1 A. As far as I'm aware it was, yes.

2 Q. As far as you're aware. How were you aware of that?

3 A. We were out there, and they had indicated it was at  
4 full power.

5 Q. Did someone tell you that?

6 A. Yeah. The owner of the wind farm. I did not  
7 independent verify that they were all spinning at their  
8 max rate. All turbines appeared to be spinning.

9 Q. And did you experience that same whoosh sound that  
10 you described?

11 A. So in general next to a turbine, yes, you would  
12 experience that whoosh. The further away you get from  
13 them if you are near multiple turbines, they are  
14 asynchronized, and so because of that the whoosh blends  
15 together and you get a more continuous noise sound.

16 Q. And your experiences, did you ever experience the  
17 whoosh?

18 A. Yes. Up next to the turbine, correct.

19 Q. You did experience the whoosh?

20 A. Yes.

21 Q. Have you ever slept within the project area of a  
22 wind farm?

23 A. Not specifically. Several miles away at a hotel.

24 Q. What about have you ever spent the night or slept in  
25 a hotel or a house or wherever where the predicted sound

1 level was 40 dBA Leq or more?

2 A. Yes. It's pretty much always over 40 inside of a  
3 hotel.

4 Q. Okay. With respect to --

5 A. It's over 40 in here right now.

6 Q. Have you ever slept within the proximity a -- around  
7 a wind farm where that wind farm was projected to create  
8 a 40 dBA Leq?

9 A. Again, I was not close enough to the wind turbines  
10 to hear them.

11 Q. Would you agree that the sound generated by wind  
12 turbines is a fluctuating sound?

13 A. It depends on your time frame, but it can be, yes.

14 Q. And I understand your model you used ISO 9613-2; is  
15 that right?

16 A. Correct.

17 Q. And isn't that standard intended for estimating the  
18 average sound levels of nonfluctuating sound sources?

19 A. It can be used for many different types of  
20 applications if used appropriately.

21 Q. In your testimony I believe you opined that a 45 dBA  
22 sound limit is conservative. Do you remember that?

23 A. I don't specifically remember saying conservative,  
24 but, in my opinion, it's one of the lowest I've seen.

25 Q. Do you know who Dr. Paul Schomer is?

1 A. I'm familiar with the name, yes.

2 Q. And he's the former director of the Acoustical  
3 Society of America's Standards Committee, isn't he?

4 A. Yes.

5 Q. Which is the committee which essentially kind of  
6 sets the industry standards; right?

7 A. Some of them. They don't set the standards for the  
8 communities. They set standards for developing models,  
9 measurement techniques, things like that.

10 Q. And I believe and correct me if I'm wrong, but he  
11 actually coauthored that ISO 9613-2 standard that you  
12 applied for your modeling project.

13 Do you know if that's true?

14 A. I believe that's true.

15 Q. So he's a pretty respected acoustician in your  
16 field. Wouldn't you say?

17 A. I would say.

18 Q. So if Dr. Schomer recommends that nighttime limits  
19 be less than 40 dBA, do you think that opinion should be  
20 given some deference?

21 A. It depends on how he came to that conclusion.

22 Q. Let's now talk about the measurements that you took  
23 of the ambient sound levels for the project area. And I  
24 believe it's Table 4-1 of your sound study.

25 Are you at Table 4-1?

1 A. Yes.

2 Q. And that's the table of the ambient measurement data  
3 that you collected; correct?

4 A. Correct.

5 Q. And did you actually go out to the project area and  
6 perform the -- you know, put out all the measurement  
7 tools?

8 A. We had two different teams. I was on one of them.

9 Q. And it looks like there were 16 different  
10 measurement locations?

11 A. Correct.

12 Q. And earlier you were quick to point out that the  
13 project area ranges anywhere from I don't remember the  
14 low end but all the way up to 45 decibels; right?

15 Do you remember when you --

16 A. And I should have prefaced that is a metric. L90 is  
17 the sound level exceeded 90 percent of the time so the  
18 quietest 10 percent.

19 Q. And looking at your L90 levels, that 45 appears at  
20 measurement location 11; correct?

21 A. Correct.

22 Q. Now aside from that 45, what's the next highest one?  
23 And I'm talking about the L90 levels.

24 A. Yep. It appears to be 37.7.

25 Q. That's what I saw too. And then going back to that

1 location in 11, it looks like at 5:00 p.m. is when you  
2 got that 45. And the other two times in which that  
3 location was measured it was 31.6 and 28.1.

4 Do you see that?

5 A. Yep.

6 Q. The 45 seems to be a bit of an outlier here. Would  
7 you agree?

8 A. No. No. That time of night that could easily  
9 occur. You'll notice that the Leq value is much higher.  
10 I believe in the appendix there are details of what  
11 specifically occurred during the measurement point.

12 Q. What did occur during that time period for that  
13 measurement point?

14 A. It appears that there were birds, high speed  
15 traffic. Yeah. Birds and high speed traffic.

16 Q. So you took essentially 48 separate measurements,  
17 right, because you took three different measurements at  
18 16 different locations?

19 A. Correct.

20 Q. So 48 different measurements. 47 of them have an  
21 L90 of less than 37, and one of them is all the way up to  
22 45. And you still don't think that was an outlier?

23 A. It was the value that was measured at that time  
24 period.

25 Q. When we're talking about measuring ambient sound

1 levels we're trying to get a general idea of what that  
2 sound level of the area is; right?

3 A. Generally.

4 Q. And so if you have outliers that aren't within the  
5 range of all the other numbers, that could skew the  
6 results; right?

7 MS. SMITH: Objection. Argumentative. That was  
8 not his testimony.

9 MR. ALMOND: I'm asking the question.

10 MR. DE HUECK: Yeah. Go ahead and answer.

11 A. In general what we did was quantify the existing  
12 ambient in that area. Whether it's an outlier to you or  
13 not, that occurred while we were there. It's a typical  
14 sound for those people during that time period.

15 Q. And in your report as well as your earlier testimony  
16 you're quick to point out that the ambient levels go all  
17 the way up to 45 dB; correct?

18 A. For L90. For Leq they go much higher.

19 Q. Looking at L90 levels for the 12:00 a.m.  
20 measurement, how many of those were above 30?

21 A. It appears that three are.

22 Q. It looks like 13 of those measurements are -- the  
23 vast majority of those measurements were under 30 L90;  
24 correct?

25 A. At 30 or below, yes.

1 Q. Now let's go to your predicted models, please.

2 A. Are we going to the results or somewhere else?

3 Q. We're not going to talk about your predicted levels  
4 right now. We're going to change topics again.

5 In reading Rick James's testimony, he was critical  
6 of the ground factor that was chosen for this project.  
7 Well, I don't think he was critical. I think he asked  
8 what ground factor was chosen and proposed that a ground  
9 factor of zero should be adopted when modeling this  
10 project.

11 What ground factor did you apply in modeling these  
12 noise levels?

13 A. 0.5.

14 Q. And just, you know, briefly explain what the ground  
15 factor does and why you model it?

16 A. So ground factor plays in in the model in three  
17 different areas. There's right underneath the source  
18 itself, the distance in between the source and the  
19 receiver, and then at the receiver itself.

20 The height of the specific receiver and source,  
21 et cetera come into play, and the model automatically  
22 calculates specific ground absorptions for each of those  
23 individual regions.

24 Using a value of what Mr. James suggested, 0.0,  
25 would be as if the entire ground was a complete sheet of



1 ice on a lake or hard concrete everywhere. Clearly not  
2 the situation for an area like this.

3 There are many guidances out there that have --  
4 sorry. Many guidances out there that have suggestions  
5 for what to use. .5 is the normal value that is  
6 suggested in industry. ASA has a guidance on wind  
7 turbine modeling. Suggests 0.5 for that value.

8 Q. So at ground, if the ground is a fully grown  
9 cornfield, what do you think the ground factor would be  
10 for that?

11 A. It would actually be quite a bit higher than .5.

12 Q. How high?

13 A. So the 1.0 is considered very soft, fertile ground  
14 such as a farmland. I would suggest the farm ground with  
15 crops and everything like that would be on the higher  
16 end, .8 to 1.0, somewhere in there.

17 Q. What about during winter months in South Dakota in  
18 January when the ground is entirely frozen? What ground  
19 factor would you think would apply there?

20 A. So in a scenario like that there is still some sort  
21 of ground cover, especially if there's snow on the ground  
22 so it would be a 1.0 ground cover. If it's just simply  
23 frozen ground, there will still be remnants of grass and  
24 crop that got left and dirt that was turned, things like  
25 that. It will have some sort of lower value. I have not

1 done an actual calculation of what it would be.

2 Q. Is there a suggested ground factor level for winter  
3 frozen ground conditions?

4 A. Everything that I've read for modeling of wind farms  
5 suggests .5 foreground, and that's a typical average for  
6 the whole year.

7 Q. Whether the farm's in Texas or South Dakota?

8 A. Correct.

9 Q. Looking at your sound study as a whole, I believe  
10 you stated that you used some pretty conservative  
11 assumptions and that you'd expect the actual sound levels  
12 to be less than your predicted levels.

13 Is that accurate?

14 A. Correct.

15 Q. And in one of your exhibits -- I think it was 10-2  
16 or maybe it was 10-1 -- you have your modeling numbers at  
17 each receptor location. Receptors being residences of  
18 those living around the project; right?

19 A. Yes.

20 Q. And I think you ended your report by saying you kind  
21 of predicted the worst-case scenario for noise; right?

22 A. Yes. Generally. I don't remember the exact  
23 language but --

24 Q. If you go to Exhibit A10, page 21, your Conclusion,  
25 your report states, "A number of conservative assumptions

1       were applied to provide worst-case predictor sound  
2       pressure levels."

3               Does that refresh your recollection?

4       A.    Yes.

5       Q.    Talk about how sound pressure goes together.

6               So if you have a source that's creating 35 decibels  
7       and another source that's creating 35 decibels, how do  
8       you add them together?

9       A.    It's a logarithmic addition.    So 35 and 35 would be  
10      38.

11      Q.    And what about 40 and 40?

12      A.    43.   Two equal sound levels added together  
13      logarithmically give you a 3 dBA addition.

14      Q.    I appreciate that.   That makes it really easy.   I  
15      thought you were really good at logarithmic mathematics  
16      in your head.   I was very impressed.

17              This is the last line of questioning I think I have  
18      for you.

19              Are you familiar with a study created by -- or a  
20      study done by an acoustician by the name of Steven Cooper  
21      called the Subjective Perception of Wind Turbine Noise:  
22      The Stereo Approach?

23      A.    I have read it briefly.

24      Q.    And do you recall what the findings of that study  
25      were?

1 A. People that identified as being susceptible to low  
2 frequency noise will pick up low frequency noise in a  
3 test chamber.

4 Q. And do you agree with the findings of that study?

5 A. That -- that particular finding, sure.

6 Q. And do you have any opinions on whether or not that  
7 study had any methodological flaws?

8 A. Generally there were some things I disagreed with,  
9 yes.

10 Q. And tell me what those things were.

11 A. I'll need to look at my notes.

12 Q. I have the study here if you'd like to look at it.

13 A. Yeah. I would also like to look at my cross -- my  
14 Rebuttal Testimony.

15 Q. I'd like to have this discussion without you  
16 referring to your testimony. I'm not asking you about  
17 your testimony. I'm asking about the study.

18 A. As I mentioned, I read the study very briefly.

19 Q. Okay.

20 A. And what I took from it was that certain things were  
21 inadequate, certain things were not replicated as stated  
22 in the document.

23 Q. Here. I'll hand you a copy of that study.

24 A. Thank you.

25 You know, reproducing sound in ultra low frequencies

1 in a laboratory setting is not going to happen, without a  
2 very specialized, very expensive equipment. There is  
3 even a statement in here that says they didn't fully get  
4 that low so they weren't able to replicate infrasound,  
5 things like that.

6 Q. So I want a list of those research protocols. I  
7 mean, at some point you have to study the infrasound in  
8 some manner; right?

9 If you were to study it, how would you study it?

10 A. I don't really know. It's not something that I do.  
11 Again, I put things into practice as opposed to studying  
12 them.

13 Q. So which elements of Cooper's research protocols are  
14 you taking issue with?

15 A. Reproduction was not as stated. In general they  
16 stated that people who were susceptible will feel or hear  
17 infrasound. I don't take exception to that part of it.

18 Q. I didn't follow your answer to the question. I was  
19 asking about what --

20 A. I'm not speaking very intelligently to this study.  
21 I don't study infrasound. I read this study very  
22 briefly.

23 Q. Okay.

24 MR. ALMOND: Based off the witness's last  
25 statement, I would like to strike the part of his

1 Rebuttal Testimony where he references his analysis of  
2 that study.

3 MS. SMITH: I would object to that objection  
4 because I think it's taken out of context.

5 The response was I don't study infrasound, not  
6 that I don't measure and understand infrasound.

7 MR. DE HUECK: I agree. I think that the  
8 witness is qualified to provide what he did in his -- was  
9 that Rebuttal Testimony? Just based on his knowledge and  
10 his practice in the acoustic field, I feel that his  
11 Rebuttal Testimony was appropriate.

12 So I won't strike that testimony.

13 MR. ALMOND: Just for the record, the specific  
14 portion of Mr. Howell's Rebuttal Testimony, which is  
15 Exhibit A10, that I'm requesting be stricken is lines 83  
16 through 117.

17 No further questions.

18 MR. DE HUECK: So your objection is noted for  
19 the record.

20 And I will go to Mr. Fuerniss for  
21 cross-examination.

22 MR. FUERNISS: Thank you.

23 CROSS-EXAMINATION

24 BY MR. FUERNISS:

25 Q. Mr. Howell, how do you determine what model you're

1 going to use for sound study? Do you always use the ISO  
2 one? Do you use different ones for different things?

3 A. It depends on the industry. ISO 9613 is the  
4 standard around the world for prediction of environmental  
5 sound propagation. There are different models that are  
6 used for things such as traffic noise, airplane noise,  
7 explosions, things like that, but the ISO 9613 standards  
8 are used specifically for industrial type noises.

9 Q. Are there limitations to those standards or  
10 adjustments that can be made to specific situations?

11 A. There are cautions, and qualifications that the  
12 accuracy has not been tested outside of these ranges. It  
13 does not say that you cannot use it for them.

14 Q. And what might some of those things be?

15 A. They specify height restrictions, length  
16 restrictions, things like that. They're not  
17 restrictions. I apologize. I misspoke.

18 They are criteria that they have actually evaluated  
19 uncertainty for.

20 Q. So do you know what the height limitation is?

21 A. They have looked up to 30 meters.

22 Q. 30 meters. And what would be the height, hub  
23 height, of these wind turbines?

24 A. 111 and a half.

25 Q. 111 and a half?

1 A. The model is still valid beyond those if you have  
2 measurement data to prove those predictions out, and we  
3 have that type of data.

4 Q. And what is that? How do you get that data to prove  
5 it out beyond that?

6 A. You can test your predictions. We've gone to  
7 operational sites and taken measurements and borne out  
8 our predictions.

9 Q. Okay. Can you describe a little bit how sound is  
10 attenuated over distance?

11 A. Generally the further away you are, the lower the  
12 sound level.

13 Q. And which frequencies are lost first, and which  
14 carry the furthest?

15 A. The highest frequencies are diminished quickly, and  
16 the lower frequencies diminish with distance -- at  
17 further distances.

18 Q. And what effect would, say, hilly terrain have on  
19 that versus flat?

20 A. It's going to depend on the specific hills, how tall  
21 they are, things like that. There's specific guidance  
22 within ISO 9613 about that.

23 Q. But would hilly terrain generally be somewhat  
24 louder?

25 A. Not necessarily. Depends on where you are, which



1 side of the hill, things like that.

2 Q. Okay. I see that you used five-minute intervals in  
3 your measurement. Is that a standard? Most of the  
4 literature goes by 10-minute intervals it seems.

5 A. There are different intervals all across the  
6 country, all across the world. It depends on what you're  
7 trying to capture. We needed a snapshot of the area.  
8 It's consistent with other places we've been.

9 All you really need is a long enough time frame to  
10 have a stable sound level.

11 Q. And five minutes provides that?

12 A. It can, yes. 10 seconds could provide that if the  
13 sound level's not significantly changing during the rest  
14 of the time period.

15 Q. Okay. Did you do the sound modeling for the  
16 Beethoven project?

17 A. I did not.

18 Q. You did not.

19 Is there a way to tell, short of looking at those  
20 measurements if they were done, what the ambient sound  
21 levels would have been in that same area with -- previous  
22 to that wind farm?

23 A. I would expect them to be similar to -- well, what  
24 this area is.

25 Q. So you --

1 A. Without knowing all of the area by heart. Similar  
2 topography, similar back country roads, things like that.  
3 I would expect it to be similar.

4 Q. So would the wind -- excuse me. The Beethoven Wind  
5 Farm, when it's operating, would that have influenced the  
6 ambient levels that you measured to some extent?

7 A. I believe during a couple of the measurements the  
8 Beethoven Wind Farm was audible. During I believe it was  
9 two of the 48 measurements Beethoven was audible.

10 There were other time periods when it was noted that  
11 they were visibly spinning but inaudible.

12 Q. And how do you go about determining how many and  
13 where to place your measuring points in something like  
14 this?

15 A. What we tried to do was capture groupings of either  
16 houses or turbines or something like that where there was  
17 not major roadways, things like that, and basically have  
18 a limited -- we have a limited amount of time so we have  
19 to limit the number of measurement points that we look at  
20 to represent a larger area.

21 Q. So is there some standard for, you know, you need a  
22 certain number of measuring points for so many square  
23 miles or so many acres or anything like that at all?

24 A. There's no standard for this area, no.

25 Q. Okay.

1 MR. FUERNISS: That's all. Thank you.

2 MR. DE HUECK: Ms. Jenkins.

3 MS. JENKINS: No questions.

4 MR. DE HUECK: Ms. Pazour.

5 MS. PAZOUR: No questions.

6 MR. DE HUECK: Staff.

7 MS. EDWARDS: Thank you.

8 CROSS-EXAMINATION

9 BY MS. EDWARDS:

10 Q. When you conducted your study was there a target  
11 noise level you were going for?

12 A. In general I was provided the regulatory criteria  
13 for the area, and I was provided a layout, and I was  
14 provided the receptor locations and also the turbine  
15 specifications. I was not told to keep it at 44.9, 45.0,  
16 et cetera. There was no direction. It was here's our  
17 layout. Tell us what you think.

18 And so the modeling turned around and showed that  
19 they could easily meet the 45 dBA criteria.

20 Q. Okay. Can you turn for me, please, to -- and I'll  
21 grab it for you -- Staff Exhibit S-5.

22 (Discussion off the record.)

23 A. Okay. I believe I have it now.

24 Q. All right. Can you turn to roughly page 22 on  
25 there. I think it's a map way towards the back.

1 A. Okay.

2 Q. Can you identify that for us, please.

3 A. I'm sorry?

4 Q. Can you identify what that is when you have it up,  
5 please.

6 A. So this is their ISO plat contours. These are rings  
7 of equal sound pressure level. So the colors correspond  
8 to individual dBA values.

9 So if you look at one of the turbines, one of the  
10 blue dots with a plus sign on them, going outward from  
11 them you'll have a 45 dBA ring, 40, 35, 30.

12 Q. Were you present yesterday when we heard testimony  
13 about the possibility of using different turbines at nine  
14 locations?

15 A. I was.

16 Q. This might seem like kind of an elementary question,  
17 but if they did, would the turbine -- those rings get  
18 smaller rather than bigger that you have on the map  
19 there?

20 A. It would depend on the specific specifications for  
21 the turbine itself.

22 Q. Okay.

23 A. You know, a quieter turbine is going to have a  
24 smaller ring. The larger turbine's going to have a  
25 bigger ring.

1 Q. So is there a way to know at this time if these  
2 turbines were used nine different locations if that map  
3 would look the same?

4 A. So I don't believe the map would look the same. We  
5 have actually run the analysis of the nine turbines, the  
6 smaller turbines, and all sound levels are still  
7 predicted to meet the 45 dBA criteria.

8 The difference is we're pretty small. I believe in  
9 the sub 1 decibel difference.

10 MS. EDWARDS: No further questions. Thank you,  
11 Mr. Howell.

12 MR. DE HUECK: Commission questions. And I'll  
13 try back at Chairman Fiegen.

14 CHAIRWOMAN FIEGEN: Don't you love the snow?

15 THE WITNESS: I do actually.

16 CHAIRWOMAN FIEGEN: A quick question on -- and I  
17 don't know if I was listening fast enough so you'll just  
18 have to forgive me.

19 Do you do postconstruction accuracy testing  
20 or --

21 THE WITNESS: I have done that, yes.

22 CHAIRWOMAN FIEGEN: Okay. And so on this model  
23 that you used have you done that?

24 THE WITNESS: I have not done it on this  
25 specific model because the facility has not been built

1 yet. But I have done it for the specific -- this model  
2 is called Cadna, and it uses the ISO standards to develop  
3 sound propagation and distance. I have used it hundreds  
4 of times, and half of those projects we've had to do  
5 verification.

6 CHAIRWOMAN FIEGEN: So you had to do  
7 postconstruction verification.

8 THE WITNESS: Sorry. Postconstruction  
9 verification of our predictions.

10 CHAIRWOMAN FIEGEN: Okay. So what was the  
11 accuracy?

12 THE WITNESS: So in general we've been within  
13 1 to 3 dB high on our production -- or on our  
14 predictions. Sorry. The only times that we have not  
15 been above in our predictions is when something that was  
16 provided to us by a vendor didn't meet the specifications  
17 it was supposed to meet.

18 CHAIRWOMAN FIEGEN: Okay. Thank you.

19 THE WITNESS: Yep.

20 MR. DE HUECK: Commissioner Hanson.

21 Commissioner Nelson.

22 COMMISSIONER NELSON: On the map with the sound  
23 rings that was just referred to. So for the 45 dBA  
24 rings, it looks like those are pretty much circles.

25 THE WITNESS: Correct.

1           COMMISSIONER NELSON: And so is that literally  
2 using some kind of a model to determine that, or is it  
3 simply --

4           THE WITNESS: Yes.

5           COMMISSIONER NELSON: -- a distance?

6           THE WITNESS: So it is a -- what the model does  
7 is it considers every single direction downwind. It's  
8 another one of the conservative techniques in the model  
9 that's built in. It assumes that the wind is always  
10 blowing away from the turbine no matter which direction  
11 you're looking.

12           So if you're looking, you know, in between two  
13 turbines and there's a house in between them, it  
14 considers that the wind is actually blowing from both  
15 directions at the same time simultaneously, a physical  
16 impossibility for the predictions.

17           So in general in that way it tends to  
18 overpredict. And that's what creates these circular  
19 rings as opposed to, you know, if the wind was always  
20 blowing one direction, it would be more of an oblong  
21 shape.

22           COMMISSIONER NELSON: Okay. Because I was  
23 thinking I could probably do that kind of map. I knew it  
24 had to be more difficult than that.

25           THE WITNESS: It's five feet (indicating).

1 COMMISSIONER NELSON: You made an offhand  
2 comment that you thought the dBA in this room was at  
3 least 40.

4 THE WITNESS: At least, yes.

5 COMMISSIONER NELSON: Would that be when  
6 someone's talking or when someone's not talking?

7 THE WITNESS: Actually when we're all quiet it  
8 would be about 40 in here right now just because of the  
9 HVAC.

10 COMMISSIONER NELSON: Thank you.

11 MR. DE HUECK: Any redirect?

12 MS. SMITH: I think just one or two.

13 REDIRECT EXAMINATION

14 BY MS. SMITH:

15 Q. There were questions about references where you were  
16 responding with respect to annual dBA measurements versus  
17 some other type, for instance, what you're using in your  
18 modeling.

19 A. Yes.

20 Q. Can you explain what the difference is and why  
21 that's important to know?

22 A. So the -- yeah. An annual limit that is an average  
23 value is going to -- basically worst-case scenario you  
24 could be 100 decibels for a few hours, and then it  
25 averages out the rest of the year if you just turn off



1 your turbines.

2 That's a pretty extreme scenario, but something like  
3 that can happen. You can get values to go up to 50, 60  
4 and then we'll just operate at 25 the rest of the year  
5 and get under the average.

6 It's not something that people actually do, but it's  
7 a physical possibility. So the yearly averages like  
8 that, while they -- there are studies that show that  
9 there is a -- an increased correlation with, you know,  
10 annoyance and things like that, there are much better  
11 ways to regulate a source.

12 And a source like this putting in a single value on,  
13 you know, like I say, a one-hour Leq, there is no  
14 specification in your requirements for what the time  
15 frame is. We would typically assume that to be a  
16 one-hour Leq. That's the industry standard for  
17 regulations if there is no time frame.

18 Basically these turbines would not be allowed to  
19 operate over 45 decibels for an entire hour. It is a  
20 physical impossibility, first of all, but in general you  
21 would regulate it that way. And, as mentioned, it was a  
22 yearly deal. They could go up and down, up and down, up  
23 and down, and still average out to 45.

24 Q. And there were some questions about your knowledge  
25 of infrasound. So can you offer your expert description

1 of infrasound and your knowledge of infrasound?

2 A. In general -- now I have not done extensive studies  
3 on infrasound. I have not presented papers or anything  
4 like that. I am familiar with infrasound. I'm familiar  
5 with low frequency sound.

6 The standard range of hearing is 20 hertz to 20,000  
7 hertz. Lower, you know, from 20 to 200 hertz is low  
8 frequency noise. Sub 20 hertz is all going to be  
9 considered infrasound. You know, there are different  
10 reasons to use all of the different types of sounds when  
11 you're analyzing quality.

12 In general, the absolute values that we're talking  
13 about for this wind farm don't require any further  
14 analysis of low frequency noise, in my opinion.

15 Q. And can you explain why that is?

16 A. Yeah. So you can look at different weightings if  
17 you want to. There's A-weighting, C-weighting,  
18 et cetera. You know, we can do the predictions for A and  
19 C very easily in the model.

20 There are other weightings that are used  
21 specifically for infrasound. DB(G), that got brought up  
22 earlier. We don't have the capability, and I don't know  
23 of a model that does infrasound modeling. That is one of  
24 the limitations of the ISO 9613 -- I'll slow down. It  
25 goes down to 31 and a half hertz. You know, the --

1           In general that gives you a good idea of the overall  
2   A-weighted sound level. And you can calculate the dB(C)  
3   value from that as well and then you can compare those  
4   two and you can look at it. And if there's a large  
5   differential, you can then see that, hey, there's a low  
6   frequency component, or there's really no low frequency  
7   component to be worried about.

8           In this scenario we looked at dBA and I did an  
9   off-the-cuff look at the dB(C) values as well and none of  
10  the values exceeded that recommended differential to  
11  determine if there's a low frequency component. So I  
12  would not expect a significant low frequency component  
13  here.

14   Q.   And when you're talking about that differential  
15  are you referencing the similar discussion that  
16  Dr. Ellenbogen had?

17   A.   Yeah.

18   Q.   Do you have further clarification to that?

19   A.   Yeah. So he had mentioned those as well.

20           The values that got thrown out, I have not done an  
21  analysis of dB(G). I don't know what the values would  
22  be. It's hard to talk about numbers from one weighting  
23  scale to another and have it make sense to people that  
24  don't deal with it regularly. It's just -- it's an  
25  abstract concept.



1 A. Correct.

2 Q. And Commissioner Nelson asked you about the dBA in  
3 this room, and you said it was about 40 dBA. You haven't  
4 measured that, have you?

5 A. I did with my phone.

6 Q. Is your phone a pretty precise tool?

7 A. I would guess it's probably within plus or nine us  
8 5 dBA. Yeah.

9 Q. When did you measure it?

10 A. Multiple times throughout the process.

11 Q. What are the ranges?

12 A. I can go get it if you'd like.

13 Q. I'm just curious about what the ranges --

14 A. It went up to about 58 when certain people were  
15 talking. Dropped down to about 48 when we were sitting  
16 there.

17 Q. So the ranges were 48 to 58?

18 A. Roughly. I'm going off memory.

19 Q. Okay. Looking at -- along those same lines because  
20 you were comparing it to this project, I believe, what  
21 would you consider the average dBA, nighttime dBA, of the  
22 project area?

23 A. During operations or --

24 Q. No. Ambient levels. Right now.

25 A. Ambient? It varied by location. You know, 30 to

1 40. Maybe 25 to 35 probably.

2 Q. 25 to 35. And let's just take -- split the  
3 difference there. 30.

4 So if the ambient levels are 30 and if following  
5 construction of the project it goes up to 40, a change  
6 from 30 to 40, what's a 10-decibel change mean?

7 A. Yes. So a 10-dBA change is a perceived doubling of  
8 the sound level. But it's worth noting that the  
9 predictions are for the turbines spinning at maximum  
10 sound level all the time for 24/7. It's not going to  
11 happen.

12 As I understand, you know, the capacity factor is  
13 50 percent or something, and being at maximum load is an  
14 even smaller percentage of that. So at any given time  
15 the sound level is likely to be much less than this if --  
16 you know, less than this, if not much less.

17 Q. So you said the predicted sound levels in your noise  
18 study will never happen?

19 A. I'm not saying that.

20 Q. I thought that's what you said. Sorry.

21 A. It's not going to ever happen on a continuous basis.  
22 It won't be 24/7 for two, three days in a row or anything  
23 like that.

24 This is when the wind is blowing at its maximum  
25 speed, conditions are right, they are being called for

1 demand. Things like that all have to play into whether  
2 or not the turbines are spinning at max speed.

3 MR. ALMOND: Okay. No further questions.

4 MR. DE HUECK: Any cross-examination,  
5 Mr. Fuerniss?

6 MR. FUERNISS: No.

7 MR. DE HUECK: Ms. Jenkins.  
8 Staff.

9 MS. EDWARDS: No.

10 MR. DE HUECK: And, with that, thank you for  
11 your testimony. You may step down. I understand you  
12 have one witness left. Maybe two.

13 MS. SMITH: I believe that's correct. For now  
14 we would have one more.

15 MR. DE HUECK: And Peter Pawlowski, were you  
16 going to call him again?

17 MS. SMITH: I think our thought was to wait  
18 until the end. We anticipate there could be more, and it  
19 would be more efficient to wait until the end and recall  
20 him once.

21 MR. DE HUECK: Okay. Sounds good.

22 MS. AGRIMONTI: Prevailing Wind Park would call  
23 Scott Creech.

24

25

1                   Scott Creech,  
2 called as a witness, being first duly sworn in the above  
3 cause, testified under oath as follows:

4           MS. AGRIMONTI: As a preliminary matter, I'd  
5 like to note for those who are present Mr. Creech is the  
6 sponsor of two confidential documents that were submitted  
7 last night.

8           Those are exhibits -- one moment, please -- 34  
9 and 35. And if there are specific questions about those  
10 documents, we will need to clear the room with the  
11 exception of Mr. Reece Almond who has also received a  
12 copy on an attorney's eyes only basis.

13           Mr. Creech will provide some general information  
14 about those documents, but any specific questions or  
15 references to them, we'd want to go into confidential  
16 session.

17                   DIRECT EXAMINATION

18   BY MS. AGRIMONTI:

19   Q. Mr. Creech, could you please introduce yourself to  
20 the Commission?

21   A. I'm Scott Creech.

22   Q. And what is your education and work history?

23   A. I have a Bachelor of Science in industrial  
24 engineering from Texas A&M. My career in the wind  
25 business has been 12 years in basically more weighted to



1 the operations side but involving the construction side,  
2 probably 40 percent of it.

3 Q. Did you file Prefiled Direct Testimony in this case?

4 A. No.

5 Q. Did you file Prefiled Rebuttal Testimony as  
6 Exhibit A17 and A17-1?

7 A. Yes, I did.

8 Q. Do you have that in front of you?

9 A. Probably.

10 Q. Do you have that in front of you now, Mr. Creech?

11 A. Yes, I do. Thank you.

12 Q. Would you please provide a brief summary of the  
13 topics covered in your testimony.

14 A. A17 is my resume.

15 Q. You mean A17-1? They should be labeled in the top  
16 right corner, Mr. Creech.

17 A. A17-1 is my resume.

18 Q. All right. And I'm asking you to please summarize  
19 the testimony in A17, which is your testimony, your  
20 prefiled written testimony.

21 A. Repeat the question.

22 Q. I would be happy to.

23 Your Direct Testimony is exhibit -- I mean, your  
24 Rebuttal Testimony is Exhibit A17; correct?

25 A. Yes.

1 Q. Could you please summarize what you testified in  
2 A17.

3 A. The part about icing, or the whole thing?

4 Q. I would just like you to generally summarize the  
5 testimony so that the Commissioners can be familiar with  
6 the subject matter that you've covered.

7 A. Thank you, Lisa. I'm sorry.

8 I talked about my name. I work for sPower. I am a  
9 construction manager hired by sPower. My current  
10 assignment is to be the construction manager for  
11 Prevailing Wind Park, the construction of.

12 I'll be oversight of our EPC contractor who will  
13 build this. So I will hold him to the adherence of their  
14 scope of work that they've agreed to do for us. I will  
15 watch to make sure that the whole project is safe. I  
16 will be a liaison between sPower and the community, the  
17 landowners, the local law enforcement, EMS offices.

18 The question was, am I familiar with icing on  
19 turbine blades? And, yes, I am, and we'll speak with  
20 that. I learned that -- I said that icing is caused by  
21 wet conditions in freezing temperatures that build up on  
22 the blades.

23 And the portion about turbine blades and detection  
24 of the Prevailing Wind Park, the technology that's inside  
25 of this GE turbine that we have recognizes icing

1 conditions and responds accordingly to that. In  
2 addition, we have a turbine computer monitoring system  
3 which detects any excess vibration that the system may  
4 cause.

5 Q. Mr. Creech, have you ever testified before?

6 A. No. I've never testified before.

7 Q. Well, now you have.

8 A. Okay.

9 Q. Has Prevailing Wind Park analyzed how often icing  
10 conditions may occur in the project area?

11 A. Yes. We've done five years of study of the  
12 conditions at the site. And we expect to see about  
13 15 icing condition events during each year.

14 Q. Does the turbine manufacturer, General Electric,  
15 provide setback requirements for siting turbines to  
16 address ice throw?

17 A. Yes, they do.

18 Q. Turn to Exhibit I-28. And that would be a different  
19 binder, Mr. Creech.

20 A. Okay.

21 Q. If you flip through that document, is there one  
22 that's identified as Setback Considerations For Wind  
23 Turbine Siting?

24 MS. AGRIMONTI: Please give us a moment.

25 (Pause.)

1 Q. Mr. Creech, let's start that again.

2 Do you have what's before you a document attached to  
3 I-28 that's labeled Setback Considerations For Wind  
4 Turbine Siting?

5 A. Yes, I do.

6 Q. And you're familiar with that document?

7 A. Yes.

8 Q. And was that a set of guidelines used for the  
9 development of this project?

10 A. Yes.

11 Q. What is the setback recommended for ice throw in  
12 this document?

13 A. You take the turbine height plus half of the rotor  
14 diameter and multiply it by 110 percent. It's roughly  
15 643 feet.

16 Q. All right. And that's a setback from residences,  
17 buildings, and roads?

18 A. Yes.

19 Q. And that setback was met throughout the project  
20 area?

21 A. Correct.

22 Q. Is there also a setback for blade throw?

23 A. That is the same setback.

24 Q. Prevailing Wind Park has also filed in this docket  
25 Confidential Exhibit 33, which is a Safety Manual, and

1 Exhibit 34, which is an Operations Manual.

2 Are you sponsoring those exhibits?

3 A. Yes, I am.

4 Q. Without divulging any confidential information,  
5 could you please describe the topics covered by those two  
6 manuals?

7 A. Yes. The Safety Manual speaks more directly to the  
8 wind turbine technician on how he could do his job  
9 safely, the personal protection equipment that is  
10 required, how he's going to climb a turbine, the things  
11 he's going to do to be safe, 100 percent tie-off at all  
12 times when he's at height.

13 It addresses his personal protection equipment when  
14 he's working with electrical items, specific safety items  
15 such as lockout/tagout, and it addresses some residual  
16 effects of a turbine that are outside of the cause of the  
17 manufacturer, such as icing on blades.

18 Q. How about the Operations Manual?

19 A. The Operations Manual goes through all of the  
20 buttons, switches, knobs, the starter to brake of the  
21 wind turbine itself, how you can turn it on and operate.

22 MS. AGRIMONTI: Prevailing Wind Park would move  
23 admission of Exhibit A33 and A34 at this time.

24 MR. DE HUECK: Absent any objection from --

25 MS. AGRIMONTI: Let me double-check the numbers.

1                   34 and 35. My apologies.

2       Q.   And, Mr. Creech, if I've gotten the numbers wrong,  
3       you are correct that you're sponsoring the Safety Manual  
4       and the Operations Manual?

5       A.   That's correct.

6                   MS. AGRIMONTI:  Sorry. I'll change my numbering  
7       to 34 and 35.

8                   MR. ALMOND:  No objection.

9                   MR. DE HUECK:  Staff?

10                  Okay. Those will be admitted. Thank you.

11       Q.   All right. And then turning back to your testimony,  
12       Mr. Creech, if I asked you the same questions in your  
13       testimony, would your answers be the same?

14       A.   Yes.

15                  MS. AGRIMONTI:  I'd tender Mr. Creech for  
16       cross-examination.

17                  MR. DE HUECK:  Before we go to cross-examination  
18       I think we'll take a recess, and be back here at, say,  
19       3:05.

20                               (A short recess is taken.)

21                  MR. DE HUECK:  We're back in session.  
22       Mr. Creech is on the stand and subject to  
23       cross-examination now.

24                  Mr. Almond, do you have any cross-examination  
25       for Mr. Creech.

CROSS-EXAMINATION

BY MR. ALMOND:

Q. During your direct examination with Ms. Agrimonti you provided a formula. Will you repeat that formula?

A. It's 110 percent times the hub light plus half of the rotor diameter. Hub height's 111.5 feet -- I'm sorry. Meters. And the rotor diameter's 137 meters.

Q. Are you aware of any other formulas that have been given to predict the distances of ice throws?

A. There was a submittal that I saw with a lot of theoretical formulas on it, if that's what you're referring to.

Q. Within the industry, have you ever seen any other formulas --

A. No.

Q. -- given to estimate how far ice throws can go?

A. No.

Q. You say you saw something in the submissions. Aside from that document, have you seen any publication, studies, or reports about ice throws?

A. Not about ice throws, but we always talk about the ice throws in the safety and operation of our turbine. We have training to keep our operators safe, to use common sense, and distances to stop, look, and listen and evaluate situations, and situations to avoid, such as

1 being underneath the turbine.

2 Q. And what are the conditions in which ice throws are  
3 likely to occur?

4 A. When the turbine blades would be spinning and ice  
5 was stuck on the blade.

6 Q. Is it more likely for ice to accumulate on a blade  
7 when they're spinning or when they're standing still?

8 A. In my experience, I have seen operating turbines  
9 with weather conditions come in that start the ice  
10 accumulation on it, and then shortly thereafter the  
11 turbine will shut itself down when ice is accumulated on  
12 it.

13 Q. Have you seen ice accumulate on turbines that aren't  
14 rotating?

15 A. Yes. Once these turbines stop, ice continues to  
16 accumulate on them. And if the turbine were stopped when  
17 the weather condition came in, then ice would accumulate  
18 on those blades.

19 Q. Under which condition is it more likely that ice  
20 will accumulate on the blade? When the blade's stopped  
21 or it's going?

22 A. I think it's the condition of the weather versus the  
23 condition of whether it's going or not going.

24 Q. Well, let's assume two turbines are next to each  
25 other. One's going. One's not. If only one of them



1     were going to accumulate ice, which one would you predict  
2     would accumulate ice?

3     A.    I think both of them would accumulate ice.

4     Q.    So it doesn't matter, in your opinion, whether or  
5     not --

6     A.    I don't think, no.

7     Q.    Take a look at Exhibit I-15 for me, please.

8     A.    This book?

9         All right.

10    Q.    Go to page 2, please, for me. Do you see that  
11    formula on the left-side column towards the bottom of the  
12    page?

13    A.    Yes.

14    Q.    1.5 times hub height plus rotor diameter?

15    A.    Yes.

16    Q.    Have you ever seen that before?

17    A.    Yes.

18    Q.    And what circumstances have you seen that formula  
19    before?

20    A.    That formula applies to turbines that don't have ice  
21    monitoring systems on them.

22    Q.    Sorry. I didn't understand that. Can you repeat  
23    it?

24    A.    That 1.5 applies to turbines that do not have the  
25    ice monitoring controls in the operation controls of the

1 turbine.

2 Q. So this is the formula that you would propose be  
3 used on turbines that don't have ice monitoring control  
4 systems?

5 A. That is the formula that GE proposes to use, yes.

6 MR. ALMOND: At this time I would move for the  
7 admission of I-15.

8 MS. AGRIMONTI: I'm going to object as  
9 irrelevant. The testimony in this docket has been that  
10 there will be an ice detection system on these turbines.  
11 So this 2006 document is not relevant.

12 MR. ALMOND: May I respond?

13 MR. DE HUECK: You may respond. Sure.

14 MR. ALMOND: This gentleman is here to provide  
15 testimony on ice throw and the likelihood of ice throw  
16 and what conditions should be placed on this project to  
17 eliminate risk caused by ice throw.

18 He's provided his opinion that this -- the  
19 documents Ms. Agrimonti admitted should be utilized. I  
20 think it's fair game to question him about formulas and  
21 documents that are different from his opinion and  
22 formulas he's expressed in his Direct Testimony. So I do  
23 believe it's relevant.

24 MR. DE HUECK: And I'm going to agree with  
25 Mr. Almond. And we're using this basically to compare a

1 turbine that doesn't have ice detection with a turbine  
2 that does have ice detection, and I think it's fine to  
3 come in.

4 So it will be admitted.

5 Q. Can you turn to Exhibit A28 for me, please.

6 MS. AGRIMONTI: Sorry. Could you please repeat  
7 the exhibit.

8 MR. ALMOND: A28.

9 A. And we're there.

10 Q. And I believe it's about the 16th page of that  
11 exhibit. Unfortunately, only the first 14, I believe,  
12 are page numbered.

13 Next page, I believe.

14 A. Okay.

15 Q. And what's the title of that document?

16 A. Analysis Of Throw Distances Of Detached Objects From  
17 Horizontal Axis Wind Turbines.

18 Q. Is this the document that you referenced earlier  
19 that you reviewed in the submissions? When you said you  
20 saw a submission with a bunch of formulas in it?

21 A. It looks like it, yes.

22 Q. So in your review of that -- and feel free to take  
23 your time to review that now -- does this appear to be a  
24 publication on the predicted distances in which ice  
25 throws and blade malfunctions can create objects being

1 propelled from wind turbines?

2 A. I think this is a theoretical approach to it, yes.

3 Q. And we don't need to spend time going through the  
4 entire exhibit because the Commission will have the time  
5 to do that. But if you just look at the abstract there,  
6 about two-thirds down, do you see the sentence on the  
7 right-hand side it says, "It is found that"?

8 A. Yes.

9 Q. And follow along as I read it out loud. "It is  
10 found that, while at tip speeds of about 70 meters per  
11 second normal operating conditions pieces of blade with  
12 weights in the range of approximately 7 to 16 ton would  
13 be thrown out less than 700 meters for the entire range  
14 of wind turbines. The turbines operating at the extreme  
15 tip speed of 150 meters per second may be subject to  
16 blade throw up to 2 kilometers from the turbine."

17 Do you have any reason to dispute that statement?

18 A. Just 12 years' experience and working with turbines  
19 that there's probably 40,000 installed turbines across  
20 the United States that I've never heard these kind of  
21 numbers.

22 Q. Okay. And are you intimately familiar with the --  
23 you said 40,000 turbines. Are you intimately familiar  
24 with all the projects that are associated with those  
25 turbines?

1 A. No. But we do have a good network of conversation  
2 across all the wind industry with shared safety  
3 practices, lessons learned and --

4 Q. Does the industry keep track of instances of turbine  
5 malfunctions?

6 A. I don't know that the industry does. But with  
7 social media today, all the technicians know about big  
8 events that happen in the wind industry.

9 Q. So if a malfunction were to occur up in a wind farm  
10 by Brookings, do you think you'd hear about it?

11 A. If it was a big malfunction, yes, I think we would  
12 hear about it.

13 Q. Okay.

14 A. If it was a GE turbine, the GE people would talk  
15 about it at their weekly safety meetings with operation  
16 and maintenance buildings.

17 Q. And across the industry is any data collected or  
18 gathered in terms of how frequently malfunctions occur?

19 A. I would think it would be to the OEM. Each turbine  
20 manufacturer that keeps that kind of information, as each  
21 of their parts are specific to their turbines, and they  
22 would like to get the root cause, which would be, you  
23 know, dependent upon what blade, what manufacturer, what  
24 watt size. All of that information is kept by the OEMs,  
25 yes.

1 Q. And I know you have your anecdotal experiences in  
2 terms of how frequently blade malfunctions occur, but  
3 outside of your own anecdotal experiences, have you seen  
4 any studies or reports about how often blade malfunctions  
5 occur?

6 A. For the entire industry I have not, but we do  
7 know -- you know, I've worked for companies that have  
8 large amounts of turbines, and if they had an issue, we  
9 would know about that.

10 If the OEM had an issue that we operated those OEM  
11 turbines, we would know about that.

12 Q. How many wind projects have you been involved with?

13 A. I'm going to say 15, but -- 10 to 15.

14 Q. And for each of those projects did each project  
15 collect, gather every instance of malfunctioning turbine  
16 and then send it to other projects at all?

17 A. They collected it and funneled it up to either the  
18 owner of all of the different turbine sites or to the  
19 OEM.

20 Q. And did they share that information with other  
21 turbine operators that weren't using the same turbines?

22 A. They try not to do that, but it's found out in the  
23 industry.

24 Q. They try not to do that, you said?

25 A. Yes.

1 Q. Why is that?

2 A. Well, there's proprietary information that's  
3 involved, just like we talked about these two manuals.  
4 There's a lot of proprietary information that each  
5 manufacturer thinks they may get an advantage over the  
6 other manufacturer to sell more turbines.

7 Q. Well, certainly the instance of a -- the incident of  
8 a malfunction isn't proprietary, is it?

9 A. I believe they like to keep that data and figure out  
10 the exact root cause of it before that information gets  
11 out so that undue bad news or scared people in the  
12 communities won't be alarmed -- falsely alarmed by things  
13 that aren't true about the event that happened.

14 Q. And you'd agree a turbine manufacturer probably  
15 wouldn't want to let people to know about any of the  
16 malfunctioning events; right?

17 A. I believe if there was an issue that would affect  
18 people, that the turbine manufacturer would allow that  
19 information out.

20 Q. Stepping aside from malfunctioning turbines, let's  
21 talk about ice throws. Is there any organization,  
22 database, anything like that, where 40,000 or whatever  
23 turbines get together and collect and gather and combine  
24 all their data about how frequently ice throws occur?

25 MS. AGRIMONTI: Objection. Vague and ambiguous

1 question. I think you just need to restate it.

2 MR. ALMOND: He answered it.

3 THE COURT REPORTER: I did not hear the answer.  
4 It was spoken over.

5 Q. I thought I heard a no. Did you say no?

6 A. I said not that I know of, yes.

7 Q. Going back to this publication A28, that abstract,  
8 the next sentence it says, "For the ice throw cases,  
9 maximum distances of approximately 100 and 600 meters are  
10 obtained for a standstill in normal operating conditions  
11 of the wind turbine respectively with ice pieces weighing  
12 from .4 to 6.5 kilograms."

13 Do you disagree with that statement?

14 A. Yes.

15 Q. Is that based off your anecdotal experiences?

16 MS. AGRIMONTI: Objection to the formation of  
17 the question. I think it's argumentative. He's used the  
18 term "anecdotal" a couple of times, and I think he's  
19 meaning it in a disparaging format.

20 MR. DE HUECK: Yes. You can rephrase that based  
21 on your training and experience, firsthand information,  
22 et cetera, et cetera.

23 Q. Tell me why you disagree with that.

24 A. Well, it says normal operating conditions of the  
25 wind turbine, and the wind turbines, especially these



1 newer turbines that have grown up through the industry,  
2 have all kinds of special controls such as the ice  
3 monitoring system, such as the vibration detection  
4 systems, that don't allow ice to accumulate at full speed  
5 and in quantities that would even come close to this  
6 weight.

7 Q. So you take issue with the full speed measurements  
8 but not the regular speed measurements?

9 A. That's correct. And when an operating turbine  
10 starts collecting ice the ice breaks at perfect  
11 aerodynamic sense -- or the perfect aerodynamic  
12 characteristics of the blade.

13 The blade rotation starts slowing down. The  
14 turbine's saying, hey, wind speed says you should be  
15 turning this fast. Actual, it's turning slower. So the  
16 controls look at the temperature, say, yes, icing  
17 conditions could exist, so they shut the turbine down.

18 Q. That was a lot to unload. So when they shut it  
19 down, it's because it's not reaching maximum potential?

20 A. It's shut down because it's not reaching the speeds  
21 that the anemometer or the wind gauge on top of the  
22 turbine is saying that, hey, the wind's blowing this  
23 fast, you ought to be turning this fast. And they're out  
24 of whack, so it knows that something's wrong.

25 Q. So if the wind's really strong, we can expect the

1 turbines to be going really fast; right?

2 A. Yeah. Probably -- I'm not sure of the exact number  
3 for turbine rotations per minute or RPMs, but I think  
4 it's going to be about 16 RPMs.

5 Q. Is the fastest that these GE 3.8 turbines can go?

6 A. I think that -- I think that's the speed, yeah.

7 Q. So under conditions that you'd expect 16 RPMs to  
8 occur --

9 A. If the wind speed is turning it that fast, yes.

10 Q. So just so I understand how the ice detection system  
11 works, so if it's a day that's windy enough to generate  
12 16 RPM speeds, the way the ice detection system works is  
13 that it understands the wind speed, knows what the  
14 modeled out production is, and then compares that to the  
15 actual out production, and concludes that there's  
16 something going on here.

17 A. Yes.

18 Q. And then it looks at the environmental issues -- or  
19 the environment at the time or the climate at the time  
20 and then can deduce perhaps that maybe there's ice throw  
21 going on, and then it shuts down?

22 A. Not ice throw --

23 Q. Not ice -- excuse me. Icing. There's icing of the  
24 blades.

25 A. Yes.

1 Q. And that's why we're not reaching optimal  
2 production.

3 A. Yes. And it takes -- it doesn't take a lot of ice  
4 to break that aerodynamic characteristic of the blade.

5 Q. And that the same for the -- is the vibrating system  
6 different for that?

7 A. The vibrating system is completely different, yes.

8 Q. Okay. So what was that first system we just talked  
9 about?

10 A. That's in the controller of the turbine, the brains  
11 of the turbine.

12 Q. Does it have a name?

13 A. Sir?

14 Q. Does it have a name, that system?

15 A. Controller. I don't know what the technical --

16 Q. We'll just call it the controller system. Tell me  
17 about the vibrating system.

18 A. The vibrating system is an option that is very, very  
19 common in the wind industry now. It's for protection of  
20 the turbine, reliability of the turbine. It's -- the  
21 turbine controller monitor, there are many points on the  
22 turbine that sensors are placed and when additional  
23 vibration out of what's a normal operating range happens,  
24 there are -- first there are warning levels, and then  
25 there are turbine shut down levels.

1           These systems are monitored by GE with millions  
2 of data points, 24/7 computer monitoring that can  
3 automatically shut the turbine down.

4   Q.   So ice collection on turbine blades causes  
5 additional vibration to the turbine?

6   A.   The only time it would cause the vibration is when  
7 there is uneven accumulation on the blades. Probably be  
8 more often to see that at startup.

9           If the sun's out and the blade sheds ice off of two  
10 of the blades and one of them still has weight on it,  
11 then that rotation would trigger that vibration.

12   Q.   So if -- you're likely to have the uneven ice  
13 collection when the turbine's at a standstill condition?

14   A.   When it starts shedding.

15   Q.   If it has shed --

16   A.   If one -- or exactly one blade's behind the shadow  
17 of the turbine and the other two blades are catching the  
18 sunshine.

19   Q.   And that makes the blades uneven, which creates the  
20 vibration?

21   A.   It could make -- it could trigger that vibration,  
22 yes.

23   Q.   And any idea how long it would take -- if it's  
24 standing still, we assume it's not vibrating; right?

25   A.   Repeat that, please.

1 Q. If the turbine hasn't started up yet and it just has  
2 ice that's collected on the blades, the vibrating  
3 system's not working; right?

4 It's probably working, but it's not doing anything  
5 because the turbine's not vibrating.

6 MS. AGRIMONTI: Objection. There's no question.

7 A. Yeah. I'm looking for the question. I'm sorry.

8 Q. Will this -- when the turbine's off does the  
9 vibrating system do anything?

10 A. It's still sending data points back to the  
11 collection entity.

12 Q. And if ice collects on the turbine in an uneven way  
13 that will create vibrations and the turbine starts  
14 spinning, how long will it take for the system to  
15 recognize the vibrations to the point where it shuts it  
16 off?

17 A. I don't know that exact time. But when a turbine  
18 goes from not operating into an operating condition once  
19 the anemometer senses that there's wind speed that would  
20 support the turbine coming online to the grid, the  
21 turbine goes through several step-up situations.

22 It rotates the blades to start catching the wind.  
23 Maybe 15 percent of the turbine capacity. And it let's  
24 that turbine start going at that speed, and it makes sure  
25 that all of its systems are working.

1           If this vibration was in place, I would think at the  
2           very first step of the ramp-up of the operation of the  
3           turbine it would detect that.

4           Q.    At the very first stage, you said?

5           A.    I would -- yes.

6           Q.    Okay. And how long has this vibration system been  
7           used in the industry?

8           A.    I've been in the industry for 12 years, and it seems  
9           like -- my first year I know of non-OEM people that were  
10          touting this system. We had people that would come out  
11          to our turbines and go up and manually apply that system,  
12          apply the data collection points to the turbines to watch  
13          it.

14          I'm not sure when an OEM like GE started putting  
15          that on or offering that as an optional feature, but it's  
16          rampant throughout the industry today.

17          Q.    Has it been tested and shown to work?

18          A.    Oh, yes. It detects small things like if a bearing  
19          in a gear box starts going bad, it will detect that  
20          vibration force. It gives us a lot of operational  
21          capabilities to shut things down before they become real  
22          bad and repair them.

23          Q.    If ice accumulates evenly on each blade, will the  
24          vibrating system have any effect on the turbine?

25          A.    If it's not vibrating, it won't give any warning

1 signals.

2 Q. So if the ice accumulates evenly in all the blades,  
3 this vibrating system likely isn't going to prevent an  
4 ice throw event from happening?

5 A. It won't need to because the ice detection system or  
6 the controller will shut the turbine down before that  
7 becomes an issue.

8 Q. Okay. So let's assume we're on a day that has wind  
9 speeds that allows 16 RPM speeds in the turbine. Okay.

10 The controller system won't notice the ice until the  
11 turbines are going fast enough to hit that 16 RPM speed,  
12 will it?

13 A. No. That's not true.

14 Q. Well, earlier I thought you testified that the way  
15 the controller system works is that the system recognizes  
16 the wind speeds, recognizes the output that should be  
17 generated and what speed would be going to generate that  
18 output, and compares the model speed versus the real time  
19 speed, and if those differ, it realizes something's up.

20 A. Was your question is the turbine starting up and  
21 getting up to 16 RPMs?

22 Q. Yeah.

23 A. With ice accumulated on it?

24 Q. Yeah.

25 A. Well, the turbine won't reach those capacities

1     because of the first step. The turbine will -- the  
2     controller will recognize that the RPMs of the blades is  
3     not what the wind speed's telling the turbine that it  
4     would be turning so it would shut itself back down.

5     Q.    So the controller -- the controller kicks in at each  
6     step as the turbine goes up?

7     A.    The controller is a continual operating system. It  
8     measures things many milliseconds on voltages and things  
9     like that. It's always watching the RPMs. It's watching  
10    temperatures. It's watching charges of the batteries in  
11    the safety pitch system. It's a full-time eyes on  
12    mechanism that controls the safety and operation of the  
13    turbine.

14    Q.    Specifically the ice detection system in the  
15    controller, would that be able to shut down a turbine if  
16    the turbine stands still, starts up, and if its  
17    anticipated RPM is 16 -- is the ice detection system in  
18    the controller able to shut down the turbine from  
19    operating until it gets to that 16 and recognizes, well,  
20    it's not actually going 16?

21    A.    When the turbine's starting up it goes through  
22    gradual steps allowing the turbine to operate at a faster  
23    and faster speed. And at each step it controls -- it  
24    measures the RPM and it controls it with the wind speed  
25    and the wind speed is telling the turbine to operate at.



1           When there's the differential in that, then the  
2 turbine's going to look at the conditions again and shut  
3 the turbine back down. So once a turbine is iced up,  
4 it's not going to achieve 16 RPMs with icing on all of  
5 the blades.

6 Q.   So just so I'm -- I think I understand now with that  
7 last explanation. So the ice detection system in the  
8 controller actually measures the RPMs progressively as  
9 the turbine speeds up at each step?

10 A.   So that's all the way back to this original  
11 statement in this analysis here of what I just agreed  
12 with, yes.

13 Q.   So the first step we know -- we can see how fast the  
14 RPMs is going in stage 1, and it won't ever reach that  
15 number if there's ice buildup?

16 A.   Yes. It's trying to reach that number. It doesn't  
17 reach that number at the degree of the blade pitch, so it  
18 shuts itself back down.

19 Q.   Okay. Do you have any experience with these GE 3.8  
20 model turbines?

21 A.   No, I don't.

22 Q.   Do you have any experience with turbines of similar  
23 height?

24 A.   I've climbed a 100 meter tower. I've operated  
25 80 meter towers for most of my career.

1 Q. Do you know the feet of those?

2 A. Sir?

3 Q. Can you tell me in feet?

4 A. 80 meters is about 270. And that distance is at the  
5 center of the hub.

6 Q. And the 100 meter is?

7 A. 330 feet.

8 Q. So most of your experience has been with turbines  
9 significantly shorter than the turbines that are being  
10 proposed for this project; correct?

11 A. That is correct. It's exciting to see our industry  
12 continue to grow and get better.

13 Q. How many times have you been to South Dakota?

14 A. Maybe five.

15 Q. And before I ask you that, you had mentioned that  
16 there had been five years of study of icing conditions  
17 for this project?

18 A. There have been five years of wind, weather, all  
19 kinds of conditions, yes. We've had five years of  
20 towers, four towers up around the site.

21 Q. Were those the met towers?

22 A. Yes. Met towers. Thank you.

23 Q. I don't know. I'm just guessing.

24 A. Nailed that one.

25 Q. All right. So these turbines are going to be

1 590 feet tall. In your experiences in South Dakota, did  
2 you have the opportunity to go to Sioux Falls?

3 A. I've been to Sioux Falls, yes.

4 Q. Did you go downtown in Sioux Falls?

5 A. I don't remember. That was a while ago. I went to  
6 the Falls in Sioux Falls.

7 Q. The Sioux Falls are downtown.

8 A. Okay. Yes, I've been to downtown.

9 Q. I don't know if you had the opportunity to notice  
10 the CenturyLink building, which is the tallest building  
11 in Sioux Falls -- actually the tallest building in  
12 South Dakota, which stands at 174 feet tall.

13 MS. AGRIMONTI: Objection. He's testifying in  
14 his question.

15 MR. ALMOND: I haven't even asked the question  
16 yet.

17 MS. AGRIMONTI: You're testifying about the  
18 height of a building in Sioux Falls and then asking a  
19 question following up, and I am objecting to the  
20 testimony in the question.

21 MR. DE HUECK: Just ask the question again. Try  
22 not to testify so much.

23 Q. Just from an anesthetic perspective to those  
24 individuals living around this project, particularly  
25 within 1,000, 2,000, 3,000 feet, what do you think a 5 --

1     how do you think they're going to react to a 590-foot  
2     tall structure?

3             MS. AGRIMONTI:  Objection.  Speculation.  
4     Outside the scope of this witness's testimony.

5             MR. DE HUECK:  Sustained.

6             MR. ALMOND:  Question withdrawn.  No further  
7     questions.

8             MR. DE HUECK:  Mr. Fuerniss, do you have any  
9     questions?

10            MR. FUERNISS:  Yes, I do.

11                            CROSS-EXAMINATION

12     BY MR. FUERNISS:

13     Q.    You were talking about these controllers.  I take it  
14     each turbine has its own individual controller for  
15     detecting the ice buildup, vibration, so forth; is that  
16     right?

17     A.    Yes.

18     Q.    And then are they all connected to some central  
19     control center as well so that someone somewhere knows  
20     that this particular turbine is shut down?

21     A.    They're connected to a fiberoptic system that --  
22     there's a 24/7 operation control center in Salt Lake City  
23     of sPower's.  There's a 24/7 operation control center in  
24     Schenectady, New York for General Electric.  And, in  
25     addition, a wind tech with the right log-in information

1     could be laying in his bed with his laptop computer and  
2     log in to controlling one of these turbines.

3     Q.    Okay.  So some person somewhere knows when this  
4     turbine is shut down from ice or vibration?

5     A.    Yes.

6     Q.    Okay.  The setback that you were talking about, the  
7     two different formulas, that's just for physical safety;  
8     right?  So that someone isn't struck by a blade fragment  
9     or an ice chunk.  Is that the --

10    A.    I guess you could say it that way.  That's the GE  
11    recommended distance to stay back from a turbine, yes.

12    Q.    Okay.  Is there a risk management assessment tool or  
13    something that determines that distance, or --

14    A.    That distance was given to us by General Electric  
15    who's got, like I said, what, 30,000 turbines that are  
16    out working and has proven to be a very, very reliable  
17    number.

18    Q.    Okay.  So you're saying it's probably from practical  
19    experiences as much as how far the spinning blade is  
20    going to throw such and such a weight of ice at such and  
21    such a speed?

22    A.    I don't know that answer.

23    Q.    Okay.  In 2005 here in South Dakota we had a major,  
24    major icing event.  I don't want to be testifying here,  
25    but it was a major ice event that built up ice on barbed

1 wire fences approximately 3 inches thick. Everything was  
2 shut down. Power lines went down.

3 After the ice it got down to about 20 below zero,  
4 and then it snowed about 2 feet. So in a situation like  
5 that, I would imagine that essentially the entire wind  
6 farm, if there had been one there at that time, would  
7 have shut down.

8 A. That's correct.

9 Q. And so how -- how long would that have been before  
10 that system would have gotten back online? Because, I  
11 mean, we were without power for 9, 10, 11 days. It  
12 stayed that cold.

13 And apparently the turbines won't start up again  
14 until the ice either breaks off or melts off. So would  
15 you have any idea how long that wind farm would have been  
16 off-line in a situation like that?

17 A. Well, the first question I would have was does it  
18 continue to have grid power. If your huge transmission  
19 lines have fallen down, the wind park's not going to  
20 start up because it's not a black start.

21 Q. Yeah. Until those lines to it were repaired, yes.

22 A. And then the next answer to your question would be  
23 when the sun shines enough that those white blades get  
24 enough heat to make that ice let go and fall down by the  
25 side of the turbine and then the wind speeds will tell

1 the turbine, hey, go start up. And it will start  
2 incrementally trying to start itself up.

3 So how long was it before the sun shown like that is  
4 how long it will be before that wind farm could be  
5 operational again.

6 Q. Okay. One last question. Have you yourself  
7 experienced living in close proximity to an operational  
8 wind farm?

9 A. I have not lived by one, but I work in one and put  
10 more hours in at work than I do at home.

11 MR. FUERNISS: Thank you.

12 MS. JENKINS: No questions.

13 MR. DE HUECK: Ms. Pazour.

14 MS. PAZOUR: No questions.

15 MR. DE HUECK: Staff.

16 MS. REISS: Thank you. I have just a couple of  
17 questions for you.

18 CROSS-EXAMINATION

19 BY MS. REISS:

20 Q. In response to Ms. Agrimonti's questions during your  
21 Direct Testimony you provided a formula for ice throw.

22 Do you remember that?

23 A. I provided a formula for setback.

24 Q. I'm talking about the ice throw recommendation. And  
25 perhaps it is a setback. It would be the height times

1 half of the rotor diameter times 110 percent; is that  
2 correct?

3 A. Yes. Add the height of the turbine plus half of the  
4 rotor diameter and multiply that by 110 percent.

5 Q. Okay. And then I believe you provided a distance.  
6 What was that distance?

7 A. Was it 690 feet?

8 Q. Okay.

9 A. I can pull my calculator out, but that's better than  
10 my memory.

11 Q. That's fine for now.

12 MS. AGRIMONTI: Ms. Reiss, just so the record's  
13 clear, I know he's doing math in his head and I think he  
14 did provide that information in a data request and I'd  
15 like to put that in front of him, if I might.

16 MS. REISS: That's fine. I was looking more for  
17 approximate distance.

18 MS. AGRIMONTI: I can do it on redirect too.

19 A. And 643 is the setback distance.

20 Q. And then do you recall a question from Mr. Almond  
21 about a different formula?

22 A. Yes.

23 Q. Do you recall what that formula was?

24 A. It was the same formula but multiplying it by  
25 150 percent. 1.5 times that number is 150 -- 1.5 is



1 150 percent.

2 Q. Okay. What would that distance be approximately?

3 A. I have not had the need to calculate that number for  
4 this turbine.

5 Q. Why did you not calculate that number for this  
6 turbine?

7 A. Because it does not apply to this turbine because we  
8 have ice monitoring systems on this turbine.

9 Q. When did the company decide to use the ice  
10 monitoring system for this project?

11 A. We worked the turbine sales agreement out with GE,  
12 and that is in the controller that we are purchasing so I  
13 guess from the onset would be the correct answer.

14 Q. So you're testifying that from the beginning of  
15 development of this project Prevailing Winds intended to  
16 use the ice detection system?

17 A. Well, at the beginning of development I'm not sure  
18 we knew which kind of turbine we were going to use.

19 Q. Okay. Did you ever utilize the formula that  
20 Mr. Almond spoke about?

21 A. I have never used that formula.

22 Q. You've never used that formula?

23 A. Correct. I have never used that formula in my wind  
24 experience.

25 Q. How many projects have you been a part of?

1 A. 12 to 15.

2 Q. Have all of these utilized the ice detection system?

3 A. There were some projects that were so old they did  
4 not utilize the ice detection system, but I was not  
5 involved in the development of the site. I only came on  
6 later on as they were operational sites.

7 Q. So all of the projects that you have been a part of  
8 that you calculated distance for, all of them have  
9 intended the entire time to use an ice detection system?

10 A. Well, they're a function of the controller.

11 Q. Okay. Is there the chance that ice detection system  
12 could fail?

13 A. There's always a chance.

14 Q. Okay. Could --

15 A. But in the operation of the turbine, if that ice  
16 controller system fails, it's part of the controller of  
17 the turbine, and when that fails the safeguard is to  
18 automatically shut down the turbine.

19 Q. Okay. So any time the ice detection system would be  
20 nonfunctional the turbine would automatically shut down?

21 A. I think that would be safe to say, yes.

22 Q. Okay. You testified today a little bit about how  
23 the ice detection system would work, that when it detects  
24 something's wrong when it's not up to the RPMs it would  
25 automatically shut down; correct?

1 A. Correct.

2 Q. Okay. How long approximately would it take for the  
3 turbine sensor to realize something's wrong, send the  
4 signal, and hit the off switch on the turbine?

5 A. From startup or operation, ice coming on?

6 Q. Both, if you could.

7 A. Well, if the turbine is operating and icing  
8 conditions exist and these turbine blades start icing up,  
9 the time you're requesting would be a function of how  
10 fast the ice starts building up on the turbine blade.

11 Q. Can you provide a range for what the shutdown -- or  
12 what the notice time would be?

13 A. Can you tell me how fast the ice is accumulating on  
14 the turbine blade?

15 Q. Hypothetically say we're having an ice storm in  
16 South Dakota so ice accumulation would be very quick.  
17 And the turbine's operating at maximum capacity.

18 What would be the shutdown time?

19 A. Very quick.

20 Q. What would you equate to be very quick?

21 A. That would be a condition of how fast the ice is  
22 accumulating on the blade.

23 I don't have an exact number for the thickness of  
24 the ice that's required, but I think about a quarter of  
25 an inch of ice would have already shut that -- had the

1 turbine shut itself down. So how long it takes to  
2 accumulate a quarter of an inch of ice, I can't tell you.

3 Q. So you cannot provide any time line for what -- for  
4 the time it would take from the turbine to detect the  
5 amount of ice required to shut the turbine down to final  
6 shutoff?

7 A. I can't tell you how fast ice accumulates in  
8 South Dakota. I can tell you once the turbine detects  
9 that the RPM speed is slower than what the wind speed is  
10 telling the turbine that it should be turning, it will --  
11 it will at that point feather the blades completely out  
12 of the wind and slow itself down and safely shut itself  
13 down. And that will happen in a matter of less than two  
14 minutes.

15 Q. Did I hear you correctly that it's possible for ice  
16 to accumulate up to a quarter of an inch before it's  
17 detected on the blade?

18 A. That is -- that is my opinion of how much it is. It  
19 doesn't take very much. These blades are highly control  
20 manufactured and designed with inside wind tubes to get  
21 the maximum production from the wind.

22 Q. What's the area of a turbine rotor? Just one piece  
23 of the -- sorry. My technical knowledge has left me.

24 The rotor.

25 A. Uh-huh.

1 Q. One of those. What's the approximate area of that?

2 A. The rotor's probably got about a 10-foot diameter  
3 across it.

4 Q. And what's the width?

5 Or that's what I'm talking about. What's the length  
6 of it? 224 feet approximately?

7 A. You're referring to the blade or the rotor diameter?

8 Q. Yes. Or the rotor radius, I guess. So one blade  
9 has a width of 10 feet? One blade. A width of 10 feet  
10 and how -- what's the length of that?

11 A. Our rotor diameter on this turbine is 137 meters.

12 Q. So 137 meters times 10 feet would be the area of the  
13 blade, and it would be funky because it's not a perfect  
14 square; right?

15 A. Well, the blade is not an exact geometrical shape.  
16 Our blades are very pretty but they get real big and they  
17 taper out at the end.

18 Q. Okay. But you're not aware of the area of the  
19 blade?

20 A. I don't know the area of the blade.

21 Q. Okay. So okay. Then you wouldn't be able to  
22 calculate how much a quarter of an inch times the area of  
23 three blades would be, would you?

24 That's correct? You wouldn't be able to calculate  
25 that?

1 A. I don't know the area of the blade.

2 Q. Okay. I believe in your testimony you mentioned a  
3 blade malfunction where the blade separated from the  
4 turbine; is that correct?

5 A. I know of one of those events, yes.

6 Q. Okay. And then I'm trying to find it in your  
7 testimony. I believe you mentioned that the blade -- the  
8 blade fell 54 feet from the base of the turbine.

9 Do you recall that?

10 A. Yes.

11 Q. Can you help me understand what was the measurement  
12 of the 54 feet? What were you referring to?

13 A. Where the blade stuck into the ground.

14 Q. So the blade fell straight down and stuck in the  
15 ground 54 feet from the base of the turbine?

16 A. No. From the turbine to where the tip of the blade  
17 was was about 54 feet.

18 Q. Or 54 meters. I guess it's a -- I found it. It's  
19 on page 5. It says 54 meters.

20 A. Okay.

21 Q. Or approximately 178 feet. Would you agree with  
22 that?

23 A. Okay. Yeah.

24 Q. Okay. Do you recall how long those blades were?

25 A. The rotor diameter was 108 meters. The blade is

1     probably 51, 52 meters long.

2     Q.    Okay.  So the 54 meters was the furthest distance  
3     from the base of the turbine?  Or the closest distance to  
4     the base of the turbine?

5     A.    The furthest, yes.

6     Q.    Okay.

7           MS. REISS:  No further questions.

8           MR. DE HUECK:  That will bring us to Commission  
9     questions.  I believe we're starting with Commissioner  
10    Hanson this time around.

11           COMMISSIONER HANSON:  Mr. Creech.

12           THE WITNESS:  Yes, sir.

13           COMMISSIONER HANSON:  Good afternoon.

14           THE WITNESS:  Thank you.

15           COMMISSIONER HANSON:  Are you tired of answering  
16    questions yet?

17           THE WITNESS:  I appreciate the opportunity to  
18    brag about the safety of our industry, if you could focus  
19    your questions that way.

20           COMMISSIONER HANSON:  I'll give you one chance  
21    to brag about something else.

22           My father graduated from the University of  
23    Texas.  And I forgot as a child -- I said which --  
24    because I had heard there was a southern university down  
25    there.  And I said -- and I'm surprised here when I saw

1 Texas University because I asked him, What university did  
2 you graduate from in Texas? And he said, Son, there's  
3 only one university in Texas. So you graduated from a  
4 different one. And now you get your chance to brag.

5 THE WITNESS: Good.

6 COMMISSIONER HANSON: That's it, huh?

7 Turbines. You said turbines experience icing  
8 during conditions of freezing rain about 15 events per  
9 year. I assume you're talking about South Dakota, not  
10 Texas.

11 THE WITNESS: Yes. This specific wind site,  
12 Prevailing Winds.

13 COMMISSIONER HANSON: Okay. That's a lot when  
14 we're looking at 61 turbines and 15 icings a year.

15 THE WITNESS: Yes. It does hurt your  
16 financials.

17 COMMISSIONER HANSON: Excuse me if I'm redundant  
18 on some things. I'm sure going to try not to be. But  
19 I'm curious. I know everybody's kind of searching  
20 around. I'm trying to figure out how the velocity of the  
21 blade comes into this formula that you're using.

22 And when you look at hub height -- now when you  
23 speak of hub height, is that the nacelle, the top of the  
24 nacelle?

25 THE WITNESS: It's not the top of the nacelle.



1 COMMISSIONER HANSON: The front --

2 THE WITNESS: It's the center of the hub.

3 COMMISSIONER HANSON: Okay. Okay. So if you  
4 extend that with the length of the blade, which would be  
5 the radius of the rotor then, 225 feet; correct?

6 THE WITNESS: Yes.

7 COMMISSIONER HANSON: And then you're figuring  
8 that it's -- actually you're just adding 10 percent times  
9 the amount of the hub height and the rotor, which gives  
10 it a pretty good distance.

11 But you think that under the example that the  
12 blades are turning at a fast speed and then it builds up  
13 a quarter of an inch of ice or less, even if it's a  
14 half -- eighth of an inch, that's a lot of ice. At  
15 8 pounds a gallon, that's a lot of weight.

16 And then it starts slowing up, and then it  
17 starts throwing some ice. One would intuitively think  
18 that that's going to go a long distance.

19 From your experience, is what you're talking  
20 about, did you research other instances of ice throw from  
21 across the Northern Plains or from areas where ice  
22 throw's taken place, or are you just speaking from your  
23 own personal experience?

24 THE WITNESS: Well, I'm speaking from my own  
25 personal experience. But I have been in the industry for

1 12 years, and it's still a small industry. We talk a  
2 lot. And I have not heard of any of those conditions.

3 COMMISSIONER HANSON: I respect that. That's --  
4 12 years of experience is quite a bit. And wind turbines  
5 have advanced dramatically over the past, oh, gosh 20,  
6 25 years. And even over the past 10 years there's been a  
7 lot of changes.

8 Have you ever known of electronic controls  
9 malfunctioning?

10 THE WITNESS: Yes.

11 COMMISSIONER HANSON: And are they most likely  
12 to malfunction during adverse weather or some other  
13 situation?

14 THE WITNESS: Lightening is a bad enemy. I've  
15 known of them malfunctioning from lightening strikes.  
16 I've known them -- during normal operation possibly a  
17 short or a wire comes loose. But the safeguard in all  
18 the turbines is -- the safeguard is automatic shutdown.

19 COMMISSIONER HANSON: All right. I'll end with  
20 that.

21 Appreciate your testimony. Thank you for coming  
22 over and testifying for us.

23 THE WITNESS: Thank you. I'd like to talk to  
24 your dad about his college but --

25 COMMISSIONER NELSON: Sir, you're doing well for

1 your first time testifying.

2 One question. The icing controller system  
3 you've been talking about and the vibration detection  
4 system you've been talking about, are those going to be  
5 present on both of the models that are being talked  
6 about?

7 THE WITNESS: Yes, they will be.

8 COMMISSIONER NELSON: Thank you.

9 MR. DE HUECK: Commissioner Fiegen, do you have  
10 questions?

11 CHAIRWOMAN FIEGEN: So I'm going to look at your  
12 attorney. And I will be very cautious how I ask this.

13 MS. AGRIMONTI: Okay.

14 CHAIRWOMAN FIEGEN: It's a confidential  
15 question, but I'm going to ask it cautiously so you will  
16 stop him if we need to go into confidential.

17 MS. AGRIMONTI: My light is green, and I am  
18 ready.

19 CHAIRWOMAN FIEGEN: Okay. Here we go.

20 So the Safety Manual that was provided to us  
21 this morning -- oops. And all the sudden my computer  
22 went crazy. It was 7.4 -- 7.4.1, the seventh paragraph.

23 MS. AGRIMONTI: I'm going to ask that we go into  
24 confidential session if we're going to talk about the  
25 specific language in the document and allow him to

1 respond fully.

2 CHAIRWOMAN FIEGEN: To respond fully? Okay.

3 So I can ask it later or whatever you guys want  
4 me to do. I just want to ask if he read the seventh  
5 paragraph.

6 MS. AGRIMONTI: Oh, sorry. If it's a question  
7 if he read it -- I'm sorry. I thought you were going to  
8 ask something about it. I should have let you finish  
9 your question. My apologies.

10 CHAIRWOMAN FIEGEN: Yeah. The seventh paragraph  
11 of 7.4.1 starts with -- can I say the word "however"?

12 MS. AGRIMONTI: Yes.

13 THE WITNESS: In the Safety Manual?

14 CHAIRWOMAN FIEGEN: Yeah. The Safety Manual,  
15 Exhibit A34.

16 I have 7.4.1.

17 THE WITNESS: All right. I'm with you.

18 CHAIRWOMAN FIEGEN: Do you see the seventh  
19 paragraph down? That starts with the word "however."

20 THE WITNESS: I do.

21 CHAIRWOMAN FIEGEN: Okay. Have you read that?

22 THE WITNESS: Yes, I have.

23 CHAIRWOMAN FIEGEN: Okay. I think that's what I  
24 wanted to know. And I don't know if I need to go through  
25 any confidential.

1           THE WITNESS: I don't think so. I think I've  
2 answered that question. I will be gladly to reiterate  
3 that answer.

4           CHAIRWOMAN FIEGEN: Thank you.

5           THE WITNESS: A turbine, during operation the  
6 blades are spinning. The weather comes in. The ice  
7 starts accumulating. The ice must accumulate somewhat to  
8 break the perfect aerodynamic design of the blade. So  
9 that's going to take a bit of time depending upon how  
10 fast.

11           It's, in my opinion, that it's a quarter inch --  
12 and I'm sure it's less than that, but when that ice  
13 accumulates -- I think that's what that paragraph that  
14 you're asking about is talking about is that turbine is  
15 going to continue to operate until that ice accumulates.

16           If the -- I think the positive light on that is  
17 that the ice is accumulating and sticking to the turbine  
18 blade so it's not being thrown off. So the ice is  
19 accumulating, sticking to the blade, and then in that  
20 period of time for that ice to accumulate to the  
21 thickness that it notices the difference in the RPM of  
22 the blades versus what the anemometer wind speed is  
23 telling it that it should be turning. So there is a  
24 period of time where that turbine is operating, yes.

25           I hope that explained it.

1 CHAIRWOMAN FIEGEN: Okay.

2 COMMISSIONER HANSON: I'm not sure I understood  
3 or heard what would -- I'm trying to remember.

4 The velocity of the tip of the blade when it's  
5 at maximum speed, what would --

6 THE WITNESS: I haven't calculated it yet.

7 COMMISSIONER HANSON: Okay.

8 THE WITNESS: We could do that.

9 COMMISSIONER HANSON: I'd sure like to know  
10 that.

11 THE WITNESS: I'll bring you that answer.

12 COMMISSIONER HANSON: Thank you very much, sir.

13 MR. DE HUECK: I have a quick question for you.

14 So the vibration system, coupled with the  
15 anti-ice throw system means we should never have ice  
16 throw coming from these turbines, period. We should have  
17 ice shed only.

18 THE WITNESS: That's incorrect.

19 MR. DE HUECK: When will we have ice throw?

20 THE WITNESS: Well, if there were small pieces  
21 of that ice that stayed on that blade and it started to  
22 ramp up, then that could throw that.

23 But that setback distance that is put out by  
24 General Electric as extremely safe operating systems is  
25 the distance that they say you should not be in the

1 vicinity when the turbine is starting up to operate.

2 MR. DE HUECK: Thank you.

3 Redirect?

4 MS. AGRIMONTI: Briefly, thank you.

5 REDIRECT EXAMINATION

6 BY MS. AGRIMONTI:

7 Q. Mr. Creech, when you're talking about the buildup of  
8 the ice during an icing condition and you've used the  
9 term a "quarter-inch" that doesn't mean that the entire  
10 blade needs to be coated with a quarter-inch of ice  
11 before it shuts down; right?

12 A. No. It just means there needs to be enough ice to  
13 break the extreme precision of the aerodynamic qualities  
14 of the blade.

15 Q. So it could be a small patch of ice on any one of  
16 three blades?

17 A. Yes.

18 MS. AGRIMONTI: That's all I have. Thank you.

19 MR. DE HUECK: Recross, Mr. Almond?

20 MR. ALMOND: No.

21 MR. DE HUECK: Mr. Fuerniss.

22 MR. FUERNISS: No.

23 MR. DE HUECK: Ms. Jenkins.

24 MS. JENKINS: No.

25 MS. DE HUECK: Ms. Pazour.

1 MS. PAZOUR: No.

2 MR. DE HUECK: And Staff.

3 MS. REISS: No, thank you.

4 MR. DE HUECK: Thank you for your testimony  
5 today. You did a great job, and you may step down.

6 THE WITNESS: Thank you.

7 (The witness is excused.)

8 MR. DE HUECK: I believe we have now concluded  
9 the --

10 MS. AGRIMONTI: Our case in chief has concluded.  
11 We reserve the right to recall any rebuttal witnesses.

12 MR. DE HUECK: And with that, we'll move on to  
13 Intervenor cases in chief. And today we're going start  
14 with --

15 CHAIRWOMAN FIEGEN: A great job for like a  
16 rookie; right?

17 MR. DE HUECK: No. That was pro -- professional  
18 grade testimony.

19 CHAIRWOMAN FIEGEN: It's nice to have a rookie  
20 come in.

21 MR. CREECH: From your side, yes.

22 MR. DE HUECK: We're going to take up with  
23 Mr. Fuerniss. He needs to get his done today.

24 So, Mr. Fuerniss, if you want to take the  
25 witness stand. We'll get you sworn in.



1                   Sherman Fuerniss,  
2   called as a witness, being first duly sworn in the above  
3   cause, testified under oath as follows:

4               MR. DE HUECK: Before we begin, Mr. Fuerniss, I  
5   just want to remind you that the only exhibits that you  
6   have that have been stipulated to are your Dr. Visit 1,  
7   Dr. Visit 2, PV Map Red on Green 1, PV Map Red on  
8   Green 2. And the set of Data Requests to you from Staff.

9               So with that understanding, would you please  
10   introduce yourself for the record, and you can just begin  
11   your testimony, if you will.

12              THE WITNESS: Okay. Thank you. I've never done  
13   this before either, but that's a hard act to follow what  
14   Mr. Creech did.

15              My name is Sherman Fuerniss. I live at  
16   40263 293rd Street, Delmont, South Dakota. I'm a  
17   lifelong resident of Charles Mix County.

18              When I was in high school I was interested in a  
19   military career and eventually changed my mind, withdrew  
20   my name from consideration for appointment to West Point.  
21   You'll remember George McGovern, Denholm, Abourezk, and  
22   Abdnor at the time. So that kind of dates me.

23              After graduation from high school I earned a  
24   Bachelor of Science Degree from South Dakota State  
25   University, graduated summa com laude and Phi Kappa Phi

1 with extended studies in German, genetics, and  
2 paleobotany. My academic advisor was crushed when I  
3 refused to pursue an advanced degree at his alma mater,  
4 University of Illinois Champaign-Urbana.

5 I wanted to be like my dad so I returned to our  
6 1896 family homestead and have had the privilege to work  
7 side by side with my dad for over 30 years practicing  
8 basically animal husbandry. We don't have a lot of dirt.  
9 We didn't then. We still don't.

10 We raise registered Brown Swiss dairy cattle.  
11 We're modestly successful in that we -- we bred national  
12 production class leaders and highly classified cows that  
13 were included in national judging contests.

14 All things considered, we had to give up the  
15 dairy business because of the economics, and now we are  
16 strictly focused on purebred Braunvieh beef cattle for  
17 about the last 15 years.

18 I'm basically going to just talk about two  
19 aspects of this whole thing. First, the medical issues,  
20 and then what I consider occupational issues.

21 MS. AGRIMONTI: I understand we have kind of a  
22 narrative testimony. I would object to Mr. Fuerniss  
23 talking about medical issues related to wind turbines to  
24 the extent he does not have any personal knowledge or  
25 training to speak to those issues.

1           If it's about his individual concerns, I don't  
2     have an objection, but if he's going to opine as to  
3     health effects from wind turbines, I would argue that he  
4     is not qualified and it should be excluded.

5           MR. DE HUECK: Okay. I'm in agreement with her.  
6     But we are aware you've submitted your information so if  
7     you're speaking to your conditions and your relation to  
8     wind towers regarding your medical, I'm okay with that.  
9     But, again, you're just not an expert in health effects  
10    on wind towers. Okay?

11          MR. FUERNISS: Yeah. Well, it was my intent  
12    just to tell you what I have experienced lately. I  
13    didn't even intend to mention wind towers as far as that  
14    goes. All right?

15          So at the end of January of this year was the  
16    31st. I did not know what was happening. I thought  
17    perhaps I was having a stroke. I was dizzy. I could not  
18    walk. I wanted to throw up. My eyes kept -- I'm not  
19    sure exactly what the phrase was, but just te-te-te-te  
20    (indicating), you know, all the time as if the room was  
21    spinning.

22          I spent the night hanging onto the bed basically  
23    trying not to throw up. My wife took me to the doctor  
24    the next day, Dr. Honke in Parkston, Avera, certified  
25    rural health clinic, and he told me -- he did a number of

1 different little tests on me. He said, oh, you've got  
2 vertigo. And I'm like, Okay. What's vertigo? All I  
3 remembered about it was the old movie. And he says,  
4 Well, it could be --

5 MS. AGRIMONTI: Objection. He's now testifying  
6 about hearsay and what his doctor told him. We have  
7 medical records which are in evidence, but he can't speak  
8 to what his doctor told him.

9 MR. DE HUECK: I agree. I don't know if you're  
10 familiar with the term "hearsay."

11 THE WITNESS: No. I understand.

12 MR. DE HUECK: But you're testifying to what  
13 another -- so you need to avoid that.

14 THE WITNESS: Can I say what he put down for a  
15 diagnosis there on the exhibit?

16 MR. DE HUECK: Yes.

17 THE WITNESS: Okay. I was diagnosed with  
18 vertigo. All right.

19 He prescribed a motion sickness drug, Meclozine,  
20 for that. The basic effect of that on me was to knock me  
21 out for about eight hours at a time. He prescribed three  
22 a day. So I basically lost about three days before the  
23 world stopped spinning and I didn't want to throw up  
24 anymore.

25 After that I had a couple weeks worth of real

1     woozy days when I had to watch every step. My balance  
2     was unsteady, and I was still dizzy.

3             I had two more episodes with that, one in June,  
4     one in July, that were much shorter and not as severe.

5             I've also had a lot of trouble getting to sleep  
6     in the last 18 months or thereabouts. I've had trouble  
7     staying asleep for more than a few hours at a time. It's  
8     not uncommon for me to wake up after a couple of hours  
9     with my shoulders hunched up, my jaw is tightly clenched,  
10    and my head off the pillow.

11            After I woke up once with my teeth clenched  
12    tightly shut on my tongue I talked to my dentist. I  
13    said, Am I grinding my teeth? What's going on? They  
14    suggested I try a mouthguard because I was probably  
15    bruxing, grinding my teeth during the night. So I've  
16    been trying that. It makes it difficult for me to  
17    breathe, but I haven't bitten my tongue lately.

18            And that's -- that's been my health experience  
19    the last several months.

20            Now as far as my concern for the wind farm on my  
21    occupation, like I said, our primary means of income is  
22    our beef cow heard. We have 340 acres that we own. All  
23    but 52 of it is grass. And so I've got about 120 cows.  
24    I use intensive and rotational grazing for at least eight  
25    months of the year, nine if possible. This last year I

1 was able to graze some cows until the first of April and  
2 start again at the first of May.

3 So with that many cows and that small an acreage  
4 of ground, what we do with rotational grazing is we put  
5 up temporary fences, break wires, and we leave a group of  
6 cows on a relatively small area for a relatively short  
7 time and then move the fence.

8 The entire perimeter of the property has a  
9 relatively good fence, but inside of it we're constantly  
10 moving fences and constantly moving cattle. This  
11 obviously requires me to be out on the entire property on  
12 essentially a daily basis either moving a fence or moving  
13 the cattle or moving water tanks and so forth. So I'm  
14 continually out and about on the property.

15 We're about a mile and a quarter from the  
16 nearest Beethoven wind turbine, and we seem to get more  
17 audible noise at very least from that than other people  
18 seem to have described. So when I'm out in the pastures  
19 and so forth sometimes there will be entire days when we  
20 can hear a sound not unlike a distant jet that doesn't go  
21 away.

22 And a lot of times during the evenings and the  
23 mornings, you know, when the wind has kind of died down  
24 and you expect to have quiet it will be even louder then.

25 So my concern with this project, Prevailing

1 Winds, is that we're currently a mile and a quarter from  
2 the nearest turbine, and they would like to put five  
3 within about 1.1 miles of our residence.

4 Now our residence is essentially in the middle  
5 of our half section, very near to the middle of it. So  
6 about a half-mile of our own property is used up in that  
7 1.1 miles. And my concern is that we will be essentially  
8 surrounded if this project goes through the way that it  
9 is.

10 And so now we've got the Beethoven Wind Farm  
11 about a mile and a quarter to the northeast, and five of  
12 those turbines are within two miles. And, like I say, we  
13 sometimes hear them for the whole day.

14 So I'm thinking that if I'm totally surrounded  
15 and they're closer than a mile, which I believe at least  
16 three of them would be, we will have no direction from  
17 which there will not be some sound. And if it's  
18 comparable to the sound that we get now, it's going to be  
19 very difficult, for me at least, to be out and about on  
20 the property.

21 When I'm in the yard the roof of our main barn  
22 is white. The blades behind it are white. We have  
23 direct line of sight from our property to 35 of the 43  
24 Beethoven wind turbines. And if I'm in the yard, it's  
25 continually looking like the white sheets of steel on the

1 roof are coming off. There's just that much motion on  
2 the horizon at that time.

3 Especially when the wind is from the north, the  
4 northeast, the east-northeast. Because then the rotor  
5 diameter is faced towards our farm, so you see the  
6 whole -- you know, the whole rotor going around.

7 MR. DE HUECK: Can I ask a question?

8 THE WITNESS: Yes.

9 MR. DE HUECK: Are you at a point where it would  
10 be helpful to tell us what's on that drawing behind you?

11 MR. FUERNISS: Yes. I can do that. What I was  
12 attempting to do with the drawing, most of the  
13 topographic maps and the site layout maps that I've seen  
14 for the project are relatively small, and it's hard to  
15 tell the topography exactly. And so I just tried to blow  
16 that up a little bit.

17 Our property would be that half section right  
18 there (indicating).

19 The squiggly line is the creek that runs through  
20 our property. And the high ground is up -- that's where  
21 the Beethoven Wind Farm is from the western edge of our  
22 property where the creek runs out to there. The  
23 difference in elevation is roughly 150 feet (indicating).  
24 And so we basically live on the edge of a small valley.

25 The only other drainage from the area where



1 Beethoven is is the dry shoulder creek to the east and  
2 the Big Muddy Horn Creek to the north of us.

3 The circles that I have here, those are  
4 basically hilltops that are almost as high as the area  
5 where Beethoven is. And the circles that have the Xs in  
6 are roughly where the new turbines would be placed.

7 Now as I understand it, any sound goes out in a  
8 spherical pattern from where it's produced. And all  
9 sounds reflect off of any surfaces that they encounter.

10 MS. AGRIMONTI: I'm going to interpose an  
11 objection here to the extent he is speaking as an expert  
12 on acoustics. He does not have the qualifications to do  
13 so.

14 MR. DE HUECK: I think some of what he's saying  
15 is basically common knowledge. Sound radiates from its  
16 point outward, and that's about all he's really saying.  
17 I'm going to let him continue.

18 Do you mind if Commissioner Nelson goes ahead  
19 and asks you a couple of questions?

20 THE WITNESS: Sure.

21 COMMISSIONER NELSON: Just two questions in  
22 regard to the map. And I'm comparing it to the map that  
23 I've got here that was one of the exhibits.

24 THE WITNESS: Uh-huh.

25 COMMISSIONER NELSON: So the north quarter I'm

1 showing as Alice Fuerniss.

2 THE WITNESS: That's my mother.

3 COMMISSIONER NELSON: That's your mother, and  
4 she's the owner of that.

5 THE WITNESS: Yes.

6 COMMISSIONER NELSON: And your home is on that  
7 part of the property?

8 THE WITNESS: Yes, it is.

9 COMMISSIONER NELSON: And can you point to  
10 exactly where your home is?

11 THE WITNESS: I was coming to that.

12 The little dots, dashes here, represent our farm  
13 buildings. And our farm site is laid out kind of in the  
14 traditional German square, house on one side, barn on the  
15 other side, grain storage, machinery storage on the  
16 sides. So that rough area contains the buildings  
17 (indicating).

18 The little Y shapes around are shelter belts  
19 there (indicating). And that is all on -- would be the  
20 southwest quarter of the northeast quarter. But we own  
21 the whole half section here (indicating).

22 And just to elaborate on what Mr. de Hueck --  
23 did I say that right?

24 MR. DE HUECK: Very good.

25 MR. FUERNISS: -- was saying, we're all familiar

1 with echo. And to my thinking, the sound, especially  
2 when there's a north-northeast or east wind, from the  
3 elevation where Beethoven is, coming in that direction  
4 plus the fact that we're in a small valley, to me it  
5 seems like it's quite possible that it's bouncing back  
6 and forth off of those hills.

7           Also it seems to me that once it bounces into  
8 our yard it's essentially trapped between the buildings  
9 and the shelter belts. Because some of the very loudest  
10 sounds that we have happen between our house, which is at  
11 the northwest corner of our yard, and my mom's house,  
12 which is directly south perhaps 150 feet. And that seems  
13 to be where the very loudest sounds occur a lot of the  
14 time.

15           My son is in college. Our son, I should say.  
16 Sorry. And he would -- he would very much like to farm  
17 his grandpa's farm. He's not -- not unlike his dad in  
18 that he wants to -- he wants to come home and work with  
19 his dad, and I'm very proud of my son.

20           I told him as long as you're there, you better  
21 get a master's and you might think about a Ph.D. because  
22 if the project goes through, I really don't know if  
23 you're going to want to live here.

24           So that's -- that is my biggest concern, that  
25 we're in a somewhat unique position, going to be

1       surrounded by these turbines, and if it's like what we're  
2       exposed to now, I don't know if it will be bearable.

3               MR. DE HUECK:   Very good testimony.

4               THE WITNESS:   Thank you.

5               MR. DE HUECK:   Now if -- and I think I caught  
6       you at your conclusion.

7               THE WITNESS:   Yeah.   It's -- I could probably  
8       talk on this for a long time, but yeah.   Let's get on  
9       with it.

10              MR. DE HUECK:   And now I'll tender you for  
11       cross-examination if that's okay.   I'm going to let the  
12       Applicant go first.

13              THE WITNESS:   Okay.   Well, I have to say this.  
14       I have a great deal of respect for Ms. Agrimonti's skills  
15       as an attorney.   I've seen enough of her to know that  
16       she's good at what she does.

17              MS. AGRIMONTI:   Mr. Fuerniss, you're very kind.  
18       I do not have any questions.

19              MR. DE HUECK:   Mr. Almond, cross-examination?

20              MR. ALMOND:    Yeah.   Just a few questions.

21              MS. AGRIMONTI:   Excuse me.   Before Mr. Almond  
22       begins, is friendly cross allowed?

23              MR. DE HUECK:   I'm going to allow some friendly  
24       cross.

25              MS. AGRIMONTI:   All right.   Thank you.

CROSS-EXAMINATION

BY MR. ALMOND:

Q. Just so we can get a better idea of where you live, if you turn to Exhibit I-8 for me, please.

MR. DE HUECK: Reece, you may want to speed things up, get over there, open the book, and show him what to look at.

A. If you would, please. I have bifocals. It doesn't help.

Q. I'm not sure if I'm able to speed things up.

A. This is 2 of 2 (indicating).

Q. I might have the wrong one. Hold on.

I-11. Excuse me.

A. Okay. Okay.

Q. Does this appear to be a Google Maps image of -- is your residence on the Google Maps image?

A. Yes. It's in the lower right third of the picture there. The map actually shows three residences. On the north side is a colony. Closest to that is another farm. And we are to the lower right of that farm or in the middle of the section.

Q. So do you see the red dot with 40 --

A. 263 293rd?

Q. Yep.

A. Yes.

1 Q. Is your residence directly south of that dot?

2 A. Yes. That's where the mailbox is.

3 Q. And you can see the shelter belt there on this  
4 image; right?

5 A. Yes.

6 Q. And then are you able to point out where the wind  
7 turbines of the Beethoven project are on this map?

8 A. Yeah. If you -- if you go by the white spot on our  
9 farm there, that's the biggest barn, and you go  
10 northeast, you will just miss the intersection of the  
11 highways there on the south. And it looks like a little  
12 tail hanging down there in the -- not quite the center of  
13 the section there, but it would be in the -- the  
14 southwest corner of that section way at the north edge  
15 there's a turbine and the curved white line is a road.  
16 There's a second turbine there before you get to the  
17 township road.

18 Q. And then are there additional turbines as you  
19 head --

20 A. Yes. Across the road then it's like -- to the north  
21 there are three more turbines, and then you can just see  
22 at the top of the page another turbine of a pair.  
23 There's another one that's just off the page there.

24 Q. And those turbines are from the Beethoven project?

25 A. Yes.

1 Q. How many turbines are you able to view from your  
2 residence?

3 A. Well, from our property we can see 35 of the 43.

4 Q. Do you know how tall the Beethoven turbines are?

5 A. I probably did once. Off the top of my head, I'm  
6 kind of thinking they're between 450 and 500 feet  
7 possibly.

8 Q. And if we can turn to the noise study of Mr. Howell,  
9 which is Exhibit A10.

10 Well, actually in order to find the receptor you  
11 were at, we need to use the Application so --

12 Looking at Exhibit A-1, the Application,  
13 specifically Appendix M thereof, looking at that sound  
14 study are you able to identify which receptor is your  
15 residence?

16 A. Well, the two that are close together there, 68 and  
17 69, would be my mother's house and ours, and I'm not sure  
18 which number we are right now. I think we're 68.

19 Q. Okay. So your residence is 68 or 69?

20 A. Yes.

21 Q. And do you know what the modeled levels are for your  
22 residence?

23 A. Well, I could look on the chart here. I thought I  
24 saw it.

25 Q. And I think the updated model is Exhibit A10 now.

1 A. Okay. Okay. I'm looking at page 15 of 34. It's  
2 Table 4-1, Ambient Measurements Data. Is that it?

3 Q. No.

4 A. No.

5 Q. Let's go to page 30.

6 A. All right.

7 Q. And for Receptor 68 and 69 can you read the modeled  
8 sound levels for those two receptors?

9 A. For 68 LAeq is 35.8, and for 69 LAeq is 36.

10 Q. And now if you can go back to page -- I didn't write  
11 those down. You said 36 and -- can you repeat it for me?

12 A. Yeah. 35.8 and 36.

13 Q. If you can go back to page 14 of that same exhibit,  
14 A10-2.

15 A. Okay. The map?

16 Q. Which measurement location is closest to your  
17 residence?

18 A. Measurement point 2 would be slightly closer than 3,  
19 I would say. 2 would be the closest one.

20 Q. Your residence is in between 2 and 3? Is that what  
21 you're saying?

22 A. Yes. 2 would be the closest one.

23 Q. And if you go to the next page of that exhibit.

24 A. Uh-huh.

25 Q. For the MP2 modeled levels, can you read off the



1 different Leqs for MP2?

2 A. Do you want the Leqs or the L90s?

3 Q. Why don't you do both.

4 A. Okay. For MP2 the ambient 5:00 p.m., 36.5; L90,  
5 29.6; ambient 12:00 a.m., 35.7 Leq; L90, 28.6.

6 10:00 a.m. Leq 39, L90, 30.2.

7 Q. You described various health issues you've been  
8 experiencing in the last I think you said 18 months.  
9 Were you experiencing any of those same issues at any  
10 time in the last 10 years prior to that -- the last 18  
11 months?

12 A. Nothing like what's happened recently, no.

13 Q. And how have those issues affected your quality of  
14 life and your relations with your family?

15 A. Well, from not sleeping well, obviously I'm -- I  
16 seem to be more fatigued. Tired a lot. I had a couple  
17 of instances this summer when I regretfully was with --  
18 short with one or the other of my children because I was  
19 out of sorts and crabby. My wife tells me I'm crabby a  
20 lot.

21 My wife and I are both heavily involved in our  
22 church, especially in the youth group and we do a lot of  
23 activities through the year and I've been on the board  
24 for quite some time and it usually falls to me to put the  
25 write-ups in the Sunday bulletin, thank yous or notices

1 or things like that. And I wrote one last fall to  
2 e-mail to the pastor to put in, and my wife says we're  
3 not sending that. That doesn't sound like you. And I  
4 got to thinking, yeah, I've been edgy.

5 Q. And you describe your business practices and the  
6 fact that you're constantly out on your property. Given  
7 that business, would you like to request any particular  
8 change to the project as proposed as it relates to  
9 setbacks from property lines or right of ways?

10 A. Well, and I think I've probably put this in my data  
11 responses. Measurements, whether it be physical distance  
12 setback or sound level setbacks, that don't apply to my  
13 residence because I don't spend much time in the  
14 residence. I'm out and about on the property. And I  
15 would like to see -- and I understand through some  
16 reading that this has happened in other places that those  
17 setbacks can be applied to property lines rather than the  
18 side of a house or something like that.

19 Because in my case for at least two of the turbines  
20 a half a mile or more of my own ground is being used at  
21 the -- as the setback. And if I'm at the distal end of  
22 that half-mile, I've given up a lot of the setback just  
23 by being present at the perimeter of my property because  
24 I --

25 The only way for me to move break wires and cattle

1 is on foot. My last horse is long gone. So the only way  
2 to move the fences is on foot so it requires that you be  
3 out on all parts of the property.

4 MR. ALMOND: Thank you, Mr. Fuerniss. No other  
5 questions.

6 MR. DE HUECK: Ms. Jenkins, would you like to  
7 cross-examine Mr. Fuerniss on any issues?

8 MS. JENKINS: No. I don't have any questions.

9 MR. DE HUECK: Ms. Pazour.

10 MS. PAZOUR: Yeah.

11 CROSS-EXAMINATION

12 BY MS. PAZOUR:

13 Q. With the wind turbines that are already there  
14 weren't they like 450 or down?

15 A. I don't remember off the top of my head what the  
16 height of those ones is. I don't.

17 MS. PAZOUR: That's it.

18 MR. DE HUECK: Staff.

19 MS. REISS: Briefly. Thank you.

20 CROSS-EXAMINATION

21 BY MS. REISS:

22 Q. Mr. Fuerniss, have you had the chance to review  
23 Exhibit A32 at all? It would be the conditions  
24 proposed -- or agreed to with Staff and Prevailing Winds.

25 A. I have looked at it. I haven't read it word for

1 word.

2 Q. In your review do any of the conditions address some  
3 of your concerns?

4 A. I guess I didn't actually see a distance setback.  
5 Is there one in here somewhere?

6 Q. Let me pull it up quickly.

7 I believe the distance setbacks are the county  
8 ordinances, but let me verify.

9 That would be it. It would just be compliance with  
10 the county requirements.

11 A. Okay. And so that would -- would be the Bon Homme  
12 County 1,000 feet, I believe? Or the -- if the Charles  
13 Mix County wants their 2,000 as per Mr. Pawlowski's  
14 Affidavit.

15 Q. Correct.

16 A. Yes.

17 Q. And the commitment's been made by the Applicant in  
18 the Application as well so --

19 A. Okay. Yeah. I guess I'm familiar with that.

20 Q. Okay. Are there any conditions in the document that  
21 you do not agree with?

22 A. Well, I wouldn't -- I wouldn't agree with that  
23 distance --

24 Q. Right.

25 A. -- to start with. I've advocated for two miles from

1 a residence or two kilometers from a property line in  
2 order to -- since it seems to me that there is not a  
3 great deal of consensus on the sound pressure levels, the  
4 acoustic energy and its potential effects, to me it seems  
5 prudent to err on the side of caution and go with a  
6 little greater distance because it seems to me that there  
7 is no other protection.

8 Q. Okay. Have you had a chance to speak with  
9 Prevailing Winds about your concerns with the project?

10 A. We have never actually been contacted by Prevailing  
11 Winds. We did get the letter about the public input  
12 meeting that was in Avon. My mother had a phone call at  
13 one point wondering if she was interested in putting a  
14 met tower on the hill to the north of our houses.

15 Q. Uh-huh.

16 A. My mother's 83 years old. She was not interested in  
17 anybody doing anything on her ground.

18 Other than that, no. We have had no contact with  
19 Prevailing Winds other than having met -- you know, some  
20 of their people at Commission meetings and the Avon  
21 meeting and like that.

22 Q. Okay.

23 MS. REISS: No further questions.

24 MR. DE HUECK: Okay. Sherman, that will bring  
25 us to Commission questions, and we're down here with

1 Commissioner Nelson to kick things off.

2 COMMISSIONER NELSON: Just one question. At  
3 some point you and I are going to talk cattle but not  
4 right now.

5 Have you measured the decibel level at your  
6 property since the Beethoven towers went up?

7 THE WITNESS: I've been asked that question,  
8 and -- but, I mean, I don't have the financial means to  
9 get any what you might call legitimate equipment to do  
10 that or to hire someone to do that. And people said,  
11 Well, just use your phone. I'm sorry. I'm a little  
12 old-fashioned. I don't have a phone that can do that.

13 And I don't know that I would trust it if it did  
14 because I've listened to my wife's phone tell us where to  
15 drive, and that was obviously not correct. So, no, we  
16 have not taken any kind of measurements.

17 If I could elaborate on that just a bit, part of  
18 my thinking was, well, if the new project is built,  
19 what's already there isn't going to matter anyway, if you  
20 understand what I mean.

21 COMMISSIONER NELSON: I do. But what I'm trying  
22 to do is get an understanding of the effects that you are  
23 claiming, and I'd like to relate that to what the actual  
24 sound level is at your place today. That's the  
25 relationship that I'm trying to establish.

1           THE WITNESS: Yes. No. I cannot give you any  
2 numbers like that.

3           COMMISSIONER NELSON: Thank you.

4           MR. DE HUECK: Chair Fiegen.

5           CHAIRWOMAN FIEGEN: No questions.

6           MR. DE HUECK: Commissioner Hanson.

7           COMMISSIONER HANSON: Thank you very much for  
8 your presentation and your participation here. I know  
9 it's challenging. I'm very impressed with your  
10 educational background and the way you've presented  
11 yourself. You've done an excellent job.

12           I believe it was Karen Cremer who started a  
13 tradition here, and that was that when a layperson comes  
14 before us and their spouse is in the audience that you're  
15 sworn to tell the truth right now and we give the spouse  
16 an opportunity to ask any questions that she wants to.

17           MRS. FUERNISS: I kind of have one thing to say.  
18 He is wrong on the size of the turbines in Beethoven.  
19 He's off quite a few feet. They're 405 feet, not 450.

20           THE WITNESS: See the can of worms you've opened  
21 here.

22           COMMISSIONER HANSON: I was going to ask the  
23 good doctor that presented from the other side if there  
24 was such a thing -- if he would acknowledge that there is  
25 a chronic medical condition called husband hearing so

1       that we could use that, but I passed on that one.

2               Sorry I got you in trouble, but thank you very  
3 much for your participation.

4               MR. DE HUECK: So, Sherman, with that, that will  
5 conclude your testimony today. And I want to thank you  
6 very much. You did a fine job.

7               THE WITNESS: Thank you. It's been an  
8 interesting experience to say the least. And as far --  
9 Commissioner Hanson, as my education, I do a lot of  
10 reading but that's long past history and I tend not to  
11 bring that up anymore because, to be honest, a lot of  
12 people have been disappointed in my choices and so I -- I  
13 usually don't say too much about that anymore.

14              So thank you.

15              MR. ALMOND: Do we want to ask if he wants to  
16 take the opportunity to move the exhibits that weren't  
17 stipulated to?

18              MR. FUERNISS: I guess I would do that. I'm not  
19 sure --

20              MR. DE HUECK: Well, go ahead. Voice your  
21 objection.

22              MS. AGRIMONTI: I will continue to maintain an  
23 objection on the other exhibits because they rely on  
24 third-party hearsay.

25              MR. DE HUECK: And I'm in agreement so I'm going



1 to exclude those exhibits at this time.

2 MR. FUERNISS: The last ones that I added the  
3 data responses are they --

4 MR. DE HUECK: They're admitted. Stipulated to,  
5 and they have already been --

6 MR. FUERNISS: Okay. That's what I thought.

7 MR. DE HUECK: I could take your picture right  
8 now and e-mail it to you if you'd like.

9 No. I don't think we need to capture that at  
10 all.

11 THE WITNESS: And I don't need it anymore. My  
12 point is just that the maps are small and hard to read  
13 the topographical lines.

14 MR. DE HUECK: You did a very nice job. Thank  
15 you.

16 With that, we're going to take a recess. It's  
17 4:56. If we could come back here at, say, 5:10.

18 (A short recess is taken.)

19 MR. DE HUECK: We'll go back into session. And,  
20 Ms. Kelli Pazour, would you like to take the witness  
21 stand.

22 Kelli Pazour,  
23 called as a witness, being first duly sworn in the above  
24 cause, testified under oath as follows:

25 MR. DE HUECK: While you were present with

1 Sherman's testimony, we'll just kind of go along the same  
2 route we did with him. So I'm just going to ask you to  
3 introduce yourself for the record and then tell us your  
4 testimony.

5 THE WITNESS: Okay. My name is Kelli Pazour.  
6 My address is 29668 402nd Avenue, Wagner.

7 Basically the beginning of February of 2014 my  
8 daughter was getting sick. We ended up finding out she  
9 ended up with cancer. Because of the complications with  
10 the surgery, she lost her hearing in her left ear.  
11 Because of that we ended up having to figure out a  
12 hearing device, which ended up being a bone attached  
13 hearing aid.

14 Basically I started noticing last year -- we  
15 have ground to the north of us -- just subtle little  
16 things that, Mom, can we go home? I don't want to be  
17 here. I just want to go home. Didn't think anything of  
18 it. Just thought, okay, she wanted to go home like a  
19 normal kid. Okay.

20 This year we had a Make A Wish for her. It was  
21 a fundraiser. The noise around her, Mom, can we please  
22 go home? It's too loud in here. Okay. This was a  
23 fundraiser for you. We really need to stay here. I have  
24 started noticing subtle but more -- like she's more  
25 sensitive to more noise than I've noticed in the past. I

1 guess I didn't put two and two together. I just started  
2 noticing more and more things.

3 This year we were up there doing farm work. Can  
4 we please go home? I don't want to be here. We've got  
5 to pick your dad up. We've just got to go home. You  
6 know, We'll go home as soon as he's -- you know, parked  
7 the tractor, we'll go ride home.

8 It's got to the point where it's easier leaving  
9 her home because she doesn't want to be up there anymore.  
10 She loves being outside. She loves being active. I  
11 don't know -- I've asked her, you know, What is it? I  
12 just don't know. I just don't want to be up here.

13 As a parent, I don't know what's going on. I'm  
14 worried. I'm trying to figure out what's going on.  
15 These are my concerns. What is going on with her?

16 Having more turbines, could there be more  
17 problems with her? I don't know. That's why I'm  
18 concerned.

19 MR. DE HUECK: When you say "up here" where are  
20 you talking about?

21 THE WITNESS: We had purchased some ground to  
22 the north up by Beethoven. It is a mile north of the  
23 north quarter of the colony ground. It's 40 acres.  
24 We've been up there in the past. We've farmed this  
25 ground for four years. But in the last two -- well, last

1 year and this year there's just been subtle -- more  
2 things we've noticed, you know, subtle things that was  
3 just starting to add up. And in my mind I'm like what is  
4 this?

5 MR. DE HUECK: So how close to a turbine are you  
6 when you're noticing these things?

7 THE WITNESS: I'm guessing a mile, mile and a  
8 half.

9 MR. DE HUECK: Okay. And the Make A Wish  
10 celebrate -- not celebrate. The fundraiser that you were  
11 referring to, were you again in this same vicinity?

12 THE WITNESS: No. We were down in Vermillion.  
13 And it was like a big art gallery, which it's loud. It  
14 echoes. I don't know how to explain something like this.  
15 It's not like this -- like in this courtroom. It's more.

16 And I'm not an expert, but it almost sounded  
17 like there was more echoing in that building.

18 MR. DE HUECK: I'm tracking you. Yep.

19 THE WITNESS: Okay.

20 MR. DE HUECK: Excellent. I don't want to get  
21 myself involved in starting to cross-examine you so I'm  
22 just going to do some more open-ended questions for you.

23 THE WITNESS: Okay.

24 MR. DE HUECK: I want to make sure you have the  
25 opportunity to provide all the testimony you want to

1 provide to these three Commissioners.

2 So what else would you like to say in terms of  
3 your testimony before I turn you over to be  
4 cross-examined?

5 THE WITNESS: I know we go to Rochester  
6 through -- on the interstate. She will wear -- plug like  
7 her tablet in on her good ear and just listen to music  
8 when we're going through the interstate. There's a lot  
9 of wind turbines in there, you know. But she's also  
10 doing homework.

11 We've been going there for the last four years.  
12 I don't know. Going through there could there be stuff  
13 going on driving the interstate? I don't know.

14 Like I said, I have noticed the last year, year  
15 and a half, just little subtleties more and more with her  
16 that noise is more sensitive to her. And it's like  
17 certain -- certain -- certain places. It's not -- like  
18 out in the outside if something's loud outside, like a  
19 vehicle going by, it doesn't bother her. Lightening, you  
20 know, the thunder, that doesn't bother her. So I'm not  
21 sure exactly what it is.

22 MR. DE HUECK: Perhaps you already said this,  
23 but where do you live in relation to a wind farm?

24 THE WITNESS: Where we live right now is about  
25 4 miles.

1           MR. DE HUECK: And in terms of the proposed wind  
2 facility that we're here today for, would a turbine be  
3 coming close?

4           THE WITNESS: I will have two on my section.  
5 Within the three mile, I figured 19 of them.

6           MR. DE HUECK: And Ms. Smith is putting a map  
7 behind you. Could you just identify your location?

8           THE WITNESS: Right here (indicating).

9           No. That's -- it would be -- this map is wrong.  
10 We'd be right here. We're a mile from where the curve  
11 goes. We're right on this section right here. Because  
12 this would be the next mile to the west of my house  
13 (indicating).

14           Because this is the eight-mile corner right here  
15 (indicating). We live on the seven-mile corner. We live  
16 right here. Right here. (Indicating).

17           MR. DE HUECK: So can you tell me what's wrong  
18 with the map?

19           THE WITNESS: It's shifted a whole mile, if that  
20 helps anything.

21           MR. DE HUECK: Well, actually it scares me to  
22 death. We've been relying on that map all day.

23           THE WITNESS: Yeah. This is the eight-mile  
24 corner right here (indicating). I live at the seven-mile  
25 corner just seven miles from Wagner.

1           If I had the back of a pen or something, this  
2 one should be right here (indicating). No, that is not  
3 my place.

4           MR. ALMOND: Who's on the deed?

5           THE WITNESS: My folks are because it's -- I  
6 will end up inheriting this ground from my folks, which  
7 would be the second generation. My kids will be third  
8 generation owning this land.

9           MS. AGRIMONTI: Mr. de Hueck, could we go off  
10 line for a few minutes so we can look at the map and see  
11 if we can figure this out?

12          MR. DE HUECK: I want to go off record mostly  
13 for our court reporter.

14                   (A short recess is taken.)

15          MR. DE HUECK: Ms. Agrimonti, it looks like  
16 you've got the reigns on the discrepancy that was  
17 previously identified by Ms. Pazour.

18               Can you straighten things out for us on the  
19 record?

20          MS. AGRIMONTI: I will let Ms. Pazour straighten  
21 out, if that would be okay.

22          MR. DE HUECK: That will work. Ms. Pazour, can  
23 you -- first of all, is that map correct?

24          THE WITNESS: Yes, it is.

25          MR. DE HUECK: And what was the discrepancy that

1 occurred?

2 THE WITNESS: It looked like a mile when it was  
3 actually a half a mile.

4 MR. DE HUECK: Okay. Wonderful. So, with that,  
5 you've now identified your residence on the map. And  
6 you've also provided testimony.

7 THE WITNESS: Yes, sir.

8 MR. DE HUECK: Are you satisfied with your  
9 Direct Testimony that you've provided, or would you like  
10 to add anything else before I turn you over for  
11 cross-examination?

12 THE WITNESS: I guess I would like more studies  
13 done with children with hearing aids. I really would.

14 MR. DE HUECK: Thank you very much.

15 THE WITNESS: Thank you.

16 MR. DE HUECK: You're welcome. I'm going to now  
17 turn you over for cross-examination, and I'll begin with  
18 the Applicant.

19 MS. AGRIMONTI: I have no questions. Thank you.

20 MR. DE HUECK: I'll move over to Mr. Almond.

21 CROSS-EXAMINATION

22 BY MR. ALMOND:

23 Q. We need to clear up this record.

24 So the map that you've identified your residence on  
25 is Exhibit A20-2. And to confirm where your residence



1 is, if you turn around and Ms. Agrimonti will help you  
2 point to it?

3 MS. AGRIMONTI: Yeah. I just want to note she's  
4 looking at a document that's 4-2. It's the same exhibit  
5 that you've provided as 22; right?

6 MR. ALMOND: I have it as A20-2 is what I have.

7 MS. AGRIMONTI: Hold on. I don't think you've  
8 got the right -- okay. It's the same map. We just have  
9 some labeling -- so yeah. A20-2.

10 And I'm going to write it up here, A20-2 so you  
11 know he's asking about this map. And he has a copy  
12 there.

13 THE WITNESS: Thank you.

14 (Discussion off the record.)

15 Q. So on Exhibit A20-2, is your residence the orange or  
16 red dot located to the left or to the west of Turbine No.  
17 49?

18 A. It is red.

19 Q. The red dot pretty much directly west of Turbine  
20 No. 49, is that your residence?

21 A. That's my residence, yes.

22 Q. And the name on that property, is that Brown, Karen  
23 M. And --

24 A. Yes. That's my folks.

25 Q. Those are your folks?

1 A. Yes.

2 Q. So we've located your residence?

3 A. Yes.

4 Q. Can you turn to the Application for me, which I  
5 believe I already have open for you. We're in Exhibit  
6 A1, Appendix M. It's already open to the page. I'm just  
7 establishing the record here.

8 A. Okay.

9 Q. Exhibit A1, Appendix M, the sound study performed by  
10 Mr. Howell, are you looking at a map that shows the  
11 different receptors of the sound study?

12 A. Where the numbers are or --

13 Q. Do you see where it identifies the receptors on that  
14 map?

15 A. REC?

16 Q. Yes.

17 A. Yes.

18 Q. And is it correct that your residence is marked as  
19 Receptor 24?

20 A. Yes.

21 Q. Okay. Now turn to page 4-2 or Figure 4.1 of that  
22 exhibit you're looking at, please.

23 Looking at the map on page 4-2, which MP is closest  
24 to your residence?

25 A. It would be the MP4 would be closer.

1 Q. Okay. And I'm looking at Exhibit A10. Page 29.  
2 Can you tell us what the predicted modeled LAeq for  
3 Receptor 24 is?

4 A. The LAeq?

5 Q. Correct.

6 A. 32.4.

7 Q. Are you looking at Receptor 24?

8 A. No. I'm not looking at -- sorry. 34.2.

9 Q. So I'm curious about your -- we're done with that  
10 exhibit so you don't need to focus on that anymore.

11 I'm curious about this hearing device that your  
12 daughter has. Can you explain that more to me, what it  
13 looks like, how it works. I know you don't know the  
14 science of how it works, but just a layperson's  
15 description of how this hearing device works.

16 A. She's deaf on her left side. So this hearing aid  
17 will -- it sits like with a rubber band around like right  
18 here (indicating). So if somebody's sitting here, here,  
19 or behind her on her left side, the vibrations go on her  
20 skull across over here to her good ear so she can hear  
21 what's going on around her on her left side (indicating).

22 I know it's a vibration. That's how she gets her  
23 sounds. I don't know how it works. I'm not a hearing  
24 specialist. But that's how she -- she can hear what's  
25 going on on her left side. So this way if somebody's

1 talking, she can hear them. Like if somebody was on her  
2 right side, she could hear them with her good ear.

3 Q. So does the device take the noise that's coming from  
4 the left side of her head, around to her right ear, and  
5 then put that noise there?

6 A. It puts the noise on her right side, what's on her  
7 left side.

8 Q. Because the right ear's the good ear --

9 A. The right ear's the good ear, yes.

10 Q. Okay. Do you want to tell the Commission any other  
11 concerns that you have about this project related to your  
12 other children or not?

13 I just want to make sure you tell them everything  
14 you want to before we're done here this evening because I  
15 don't think you'll have the opportunity again.

16 A. I do have four children. Three of them with a form  
17 of ADHD, one with cancer. I've been blessed. I've got  
18 four lovely children. I wouldn't trade them for the  
19 world.

20 But in life you get your ups and you get your downs.  
21 I mean, did I ever think I would have four kids? No.  
22 Did I ever thought I was going to have three kids with a  
23 form of ADHD? No. Did I ever think I was going to have  
24 a child with cancer? No. But that's what makes life  
25 interesting. Definitely, interesting.

1           My biggest concern is, I guess, my daughter because  
2 of her hearing aid. Living on a farm she wants to live  
3 there. She wants to farm. This piece is what she wants  
4 when she gets older so her family can raise kids there  
5 too.

6           I don't want her to lose her hearing. That's my  
7 biggest fear because she's only got one ear left. She's  
8 very protective of it. There's a lot of times where she  
9 will put like headphones on. You know, the ones that  
10 really mute noise.

11          If -- like Fourth of July weekend, bottle rockets,  
12 binge bangs, she will wear really protective hearing,  
13 hearing things, so she could watch without having the  
14 effects of worrying about her ear. I guess how many 10  
15 years old out there are that protective of their hearing?  
16 That's my concern.

17          It's been a long road since she's been six to now.  
18 I guess looking back, yeah, it's our new normal, but  
19 she's very more aware of what she's been through. She's  
20 very protective of her surroundings and what she's gone  
21 through.

22          That's what I'm trying to do is trying to -- I  
23 guess, trying to protect her if I need to protect her.  
24 Just by doing the research, there's not a lot of  
25 information with kids with hearing devices. There's a

1 lot of studies, 18 years old on up. Not of this age  
2 group.

3 I guess I would want more studies done. I'd feel  
4 more safer knowing there is more studies out there.  
5 That's what I would like.

6 Q. Thank you, Kelli.

7 Just so the Commissioners are clear, during your  
8 original testimony you were talking about another field  
9 that you and your daughter --

10 A. Yes.

11 Q. -- will go to on occasion. Can you point to it on  
12 Exhibit A20-1 so the Commissioners know exactly where  
13 that is?

14 MS. AGRIMONTI: Mr. de Hueck and Mr. Almond, I  
15 think we've had an exhibit labeling description mismatch.  
16 I've been corrected that is I-29.

17 There are some additional figures in the number  
18 that you gave, but that's not the map. So we'd like to  
19 use I-29 for that blowup, and I'll relabel it.

20 MR. ALMOND: Okay.

21 MS. AGRIMONTI: Would you like to take a minute  
22 and check to see if my numbering is correct now so we're  
23 all on the same page?

24 MR. ALMOND: We'll talk about this later, but  
25 we'll refer to this as what?

1 MS. AGRIMONTI: I-29.

2 MR. ALMOND: I-29.

3 A. It would be up in this top corner (indicating).

4 Q. So the northwest top corner of the project area?

5 A. It would be just a mile north of the colony in that  
6 northeast corner.

7 Q. Just to make sure the record's clear here, is the  
8 Rodney Beason [phonetic] property the property you were  
9 referring to in the northeast?

10 A. Yes.

11 Q. Okay.

12 MR. ALMOND: Nothing further.

13 MR. DE HUECK: Mr. Fuerniss, do you have any  
14 cross-examination?

15 CROSS-EXAMINATION

16 BY MR. FUERNISS:

17 Q. Yeah. I just have one question, Kelli. And I  
18 apologize for asking it but your daughter is 10 and as  
19 far as her hearing is concerned, this is as good as it  
20 gets; right? With the bone attached hearing aid? It's  
21 not going to get better.

22 A. With the bone attached is her only option we had  
23 because of all of her MRIs that she has to still go  
24 through. Yes.

25 MR. FUERNISS: Thank you.

1 MR. DE HUECK: Ms. Jenkins.

2 MS. JENKINS: I don't have any questions.

3 MR. DE HUECK: Staff.

4 MS. REISS: Yes, just briefly. Thank you.

5 CROSS-EXAMINATION

6 BY MS. REISS:

7 Q. Ms. Pazour, have you discussed your concerns with  
8 the -- with Prevailing Winds prior to this process?

9 A. They have never come even back. And when they first  
10 started back in '16 they've never come to the place,  
11 never called, nothing.

12 Q. Did you reach out to them at all?

13 A. If there was people -- because my kids go to Avon  
14 school. There's been times where I've stopped there.  
15 The building is locked. So never had a chance.

16 Q. Okay. Did you make your concerns known at the first  
17 public input hearing for this project? Well, I guess let  
18 me rephrase.

19 Did you make your concerns known at any of the  
20 public input hearings?

21 A. About the hearing aid?

22 Q. Yes.

23 A. Yes.

24 Q. Which public input hearing was that?

25 A. I think the last one, which would have been this --



1 was it in June, I think, or July.

2 Q. Of 2018?

3 A. Yes.

4 Q. Okay. Are there any conditions that can be placed  
5 on the permit that would address your concerns?

6 A. I definitely would like a farther setback.

7 Q. Okay. Anything else?

8 A. Noise more. I guess, the -- like a nighttime and a  
9 daytime noise. You know, dB(A)s. That would be great.  
10 Yeah. I know two miles -- I guess would three miles be  
11 asking too much to protect -- to protect her?

12 Q. Okay. Based on your testimony is it seems that the  
13 majority of your testimony you're asking for more  
14 information; is that correct?

15 A. Just the research that I've looked at, I've not come  
16 across studies with kids, you know, with the type of bone  
17 attached hearing aid. Most of the studies I've come  
18 across are 18 and over. You know, not children.

19 I guess in my eyes our children are our future. You  
20 know, they're the next generations.

21 MS. REISS: Nothing further.

22 MR. DE HUECK: That will bring us to Commission  
23 questions.

24 And I think we're at Commissioner Hanson.

25 COMMISSIONER HANSON: Good evening. Thank you

1 very much for attending and participating and you have a  
2 very heart-wrenching story to tell us and I appreciate  
3 hearing about it.

4 THE WITNESS: Thank you.

5 COMMISSIONER HANSON: I hope everything works  
6 out well for you.

7 THE WITNESS: Thank you.

8 COMMISSIONER HANSON: I don't have any questions  
9 for you.

10 MR. DE HUECK: Commissioner Nelson.

11 COMMISSIONER NELSON: Thank you, but no  
12 questions.

13 THE WITNESS: Thank you.

14 MR. DE HUECK: Commissioner Fiegen.

15 CHAIRWOMAN FIEGEN: Thank you.

16 How many acres do you own in that area by your  
17 home and then your parents own or whatever? How many  
18 acres is that?

19 THE WITNESS: The home place that I live on is  
20 159. And the acres that are to the north is roughly 40.

21 CHAIRWOMAN FIEGEN: So the 159, that's what you  
22 will inherit? Is that what you were talking about?

23 THE WITNESS: Both.

24 CHAIRWOMAN FIEGEN: Oh, okay. All right. I  
25 think that's my only question. Thank you.

1 MR. DE HUECK: Well, Ms. Pazour, thank you very  
2 much for your testimony. You may step down.

3 THE WITNESS: Thank you.

4 (The witness is excused.)

5 MR. ALMOND: Can we clear up the record here?

6 MR. DE HUECK: And what kind of cleaning would  
7 you like to do?

8 MR. ALMOND: So the exhibit that the witnesses  
9 have been referring to throughout the last two days, the  
10 demonstrative exhibit is Exhibit I-29, Attachment 4-2?

11 MS. AGRIMONTI: Agreed.

12 MR. DE HUECK: Ms. Jenkins, would you like to  
13 take the stand and be sworn in?

14 MS. JENKINS: Sure.

15 Karen Jenkins,  
16 called as a witness, being first duly sworn in the above  
17 cause, testified under oath as follows:

18 MR. DE HUECK: Ms. Jenkins, just before we get  
19 going, I would note that there were objections to your  
20 Exhibits 1, 2, and 3, the conference program information  
21 and report. All your other exhibits were stipulated to  
22 and have been admitted into the record.

23 So, with that, would you please identify  
24 yourself for the record, tell us a little bit about who  
25 you are, and then move into what it is you would like the

1 Commission to hear today.

2 THE WITNESS: Karen Jenkins, and I live at  
3 289th and 410th Avenue in Hutchinson County just south of  
4 Tripp. And I'm here because I currently live three miles  
5 from the Beethoven Wind Farm.

6 I'm east of the north boundary, and there's  
7 16 turbines in Hutchinson County. Three of them -- or  
8 probably about five of them are three miles from me.

9 And the proposed wind farm will introduce nine  
10 that will be within 1.07 and 3.3 miles of our home. I'll  
11 show you where we live. We're this dot right here, and  
12 this is the Beethoven -- or the proposed. And then the  
13 Beethoven is right here (indicating).

14 Sorry. I wasn't prepared for today. I thought  
15 we were going to be short on time.

16 The Beethoven Wind Farm has 43 turbines in the  
17 project. And I see -- I can't tell you how many, but a  
18 lot. And the main concern I have with that project is  
19 when -- we moved to the country to enjoy the country and  
20 the rural life. We moved from California. We've grown,  
21 both my husband and I -- when I say "me" or "I" I speak  
22 for us both.

23 We both grew up in small towns and lived in  
24 neighborhoods, and then as we were married and we moved  
25 to -- bought our first house in another neighborhood, we

1     were able to move from there to a more rural  
2     neighborhood. We acquired a third acre property. Lots  
3     of trees and very secluded kind of thing that we like.

4             And then my husband worked for the State of  
5     California on the highway department. He was a -- when  
6     he started his career he worked on the highway as a  
7     maintenance person. He would be actually on the road  
8     when the -- in California the highway is different. I'm  
9     sure you have an idea of that. But he would work on the  
10    road with all the noise and everything going by him, cars  
11    at 70 miles an hour and that.

12            And then as he went on in his career he became a  
13    supervisor and he was responsible for the striping of the  
14    highways for the large district.

15            And when it came time that he could retire and  
16    make as much working -- retired as he did working, it was  
17    right after the 2008 housing crisis and that, and we were  
18    right in the middle of that in the Stockton area, which  
19    was one of the worst in the country. And the properties  
20    were going downhill, and the neighborhoods were going  
21    down. And we just decided, you know, it's time to start  
22    thinking about leaving.

23            And we had always planned since we were married  
24    that we would -- when he retired we would go out of  
25    California, and we would live in the -- we would try to

1 get a small property, live in the country, experience the  
2 seasons, and live somewhere else besides California.

3 So we found this property that we own now in  
4 2010, and we went and bought it. We went out and looked  
5 at it. We bought it just like that and we went back and  
6 worked nine months before he retired and then we moved  
7 out in 2011.

8 And then the -- it was all pretty good until I  
9 believe it was 2013 I was sitting on the couch reading  
10 the paper and noticed a Conditional Use Permit -- a  
11 hearing for a Conditional Use Permit, and it just caught  
12 my eye for some reason. And the further I looked at it  
13 the more I realized it was for a wind farm -- or wind  
14 towers, I should say.

15 And so I did a little digging, and I looked  
16 up -- I found B&H Wind and I found the compass points for  
17 the project and I was sitting there with my iPhone  
18 looking everything up. And that compass said it was just  
19 about the same coordinates. And that was a real hard  
20 moment.

21 So, you know, I got on the phone and I called  
22 Mr. Jurgens at that number for B&H Wind in Minnesota.  
23 And I asked him, Do you have -- I said, I'm wondering  
24 about this wind farm -- or these turbines at that point.  
25 I knew that it was -- I can't say I knew there was 43 at

1     that point, but I just asked him for that meeting in  
2     Hutchinson County, I said, are you only putting five  
3     turbines in Hutchinson County and -- excuse me. Six  
4     turbines in Hutchinson County? And he said, yes. Only  
5     six.

6             And I was looking out the window at my horizon  
7     that was not an industrial park yet, and I said, Well,  
8     they'll be in my sunset. And he said, Well, probably in  
9     the -- I don't remember if he said summer or winter, but  
10    he knew my property. He knew where the sun would be and  
11    where the towers would be.

12            MS. AGRIMONTI: Mr. de Hueck, I would ask that  
13    the witness speak to her personal knowledge and not  
14    recount conversations she had with those who are not  
15    here.

16            MR. DE HUECK: Did you understand her objection?  
17            Let's not talk about what Roland Jurgens  
18    actually said verbatim. Just your experience without  
19    trying to say what he said.

20            MS. JENKINS: Okay. Even if it --

21            MR. ALMOND: Can I get some clarification on  
22    that ruling?

23            MR. DE HUECK: Sure.

24            MR. ALMOND: At the time I do believe Roland  
25    Jurgens was a representative of Prevailing Winds, LLC,

1     which was the owner of this project at the time.  Him  
2     having communications with people like Ms. Peters [sic]  
3     would, therefore, be a party admission and not be hearsay  
4     and, therefore, she is able to recount exactly what  
5     Mr. Jurgens said.

6             MS. AGRIMONTI:  Prevailing Winds is not the  
7     Applicant in this proceeding so that exception to the  
8     hearsay rule would not apply.

9             MR. DE HUECK:  You're talking Beethoven?

10            THE WITNESS:  Yes.

11            MR. DE HUECK:  Okay.

12            MR. ALMOND:  She's talking about conversations  
13     with Jurgens who at the time was with Prevailing Winds  
14     and the Beethoven project making representations on  
15     behalf of those projects.

16            MR. DE HUECK:  Okay.  Here's what we're going to  
17     do.

18            You're on the phone with Roland Jurgens, and  
19     you're discussing the wind turbines that are coming  
20     because you had just seen it in the paper so you made a  
21     phone call; correct?

22            THE WITNESS:  Yes.

23            MR. DE HUECK:  So let's just continue to give  
24     your Direct Testimony.

25            MS. JENKINS:  Okay.



1           MR. DE HUECK: Keep in mind, try not to repeat  
2 what you think someone else said. If that makes --

3           MS. JENKINS: What I think they said or what  
4 they said?

5           MR. DE HUECK: What they said. That would be,  
6 you know -- just focus on yourself.

7           MS. JENKINS: Okay.

8           So I went to the hearing, and it was my first  
9 time in that setting. And I just basically looked --  
10 listened to them. And I believe I asked if there were  
11 only going to be six. And I didn't object or anything.  
12 And they approved that Conditional Use Permit, and I went  
13 home.

14           And then about -- I was under the impression  
15 that there were only going to be six. So a few months  
16 later I'm looking in the paper again, and I see another  
17 public hearing for Conditional Use Permits for 10  
18 turbines. And I located them, and they were north of --  
19 north and west of the turbines that I knew about the six.

20           And in between this time I had started  
21 researching because my gut feeling was it wasn't a good  
22 thing, besides the fact that it was not anything I would  
23 ever want to come in to us when we were trying to live in  
24 the country.

25           I didn't mention that I worked in an industrial

1 park for 25 years in steel metal buildings and gates and  
2 fences and, you know, the country was a good place to  
3 retire to.

4 So I went to that meeting, and I raised my  
5 objections. I asked about the setbacks and, you know,  
6 property value, all the issues that we all have been  
7 talking about, and they didn't -- they didn't give it a  
8 second thought, and they permitted all 10 of them.

9 MS. AGRIMONTI: Mr. de Hueck, may I ask a  
10 clarifying question as to whether the witness is talking  
11 about the permitting of the Beethoven Wind Farm, which is  
12 not part of this proceeding?

13 MR. DE HUECK: Yes.

14 MS. AGRIMONTI: Ms. Jenkins, is the testimony  
15 that you've just been providing about your interactions  
16 with the permitting process related to the Beethoven Wind  
17 Project?

18 THE WITNESS: Yes.

19 MS. AGRIMONTI: I'm going to object to further  
20 testimony regarding the Beethoven Wind Project to the  
21 extent she's just recounting what occurred in that  
22 permitting process.

23 MR. DE HUECK: Okay. Here's what I'll do. I'm  
24 going to agree we won't need to go down a further road of  
25 Beethoven. I think you've successfully set the stage for

1 the culmination of you've got Beethoven, and now you're  
2 dealing with Prevailing Winds. So I think that's been  
3 set.

4 If we can move on to Direct Testimony more  
5 specific to this particular Application for the  
6 Prevailing Wind Park.

7 MS. JENKINS: Okay. I would say that my  
8 testimony is relevant because the -- parts of the  
9 conditions of granting this permit is how a wind farm  
10 affects you or the social -- you know the four criteria.

11 And it was devastating. I'll say that. And  
12 that's my experience. It's been hard accepting it. I  
13 feel like I was deceived, not told the truth, kept in the  
14 dark, and as a result of that because the developers of  
15 this project were the same developers of Beethoven, I'm  
16 leery of this project.

17 I'm doing okay on -- I'm not overstepping my  
18 bounds?

19 MR. DE HUECK: You're doing fine.

20 MS. JENKINS: Okay. All right.

21 So I'll say devastating in that just seeing the  
22 cranes in the background like for -- I still when I see a  
23 crane just driving in the road, you know, traveling it  
24 brings the negative feeling to you. To me. And I get  
25 over that pretty quick but -- and the same thing with

1     seeing a windmill, one of those old ones. Like that's  
2     the common decor now for farm style houses, and I could  
3     care less about seeing any windmill again.

4             So I'll go on and tell you that my main concerns  
5     that you probably could relate to is that the wildlife --  
6     because we witnessed the migration of the ducks and the  
7     geese twice a year. The red lights. They disturb -- you  
8     know, it's never the same. And scenery is changed  
9     forever.

10            And most importantly with Beethoven is that I  
11     can hear them. When I'm outside -- not always but I can  
12     hear them sometimes, and almost always I can hear them  
13     inside my house when I'm on our second floor on the west  
14     side of the house.

15            My concern is if I can hear them, these existing  
16     turbines that are three miles and further from me, what  
17     will it be like when the -- if this project is approved  
18     and they're constructed, what will the noise be like  
19     then? And what will my quality of life be then?

20            And I can tell you it will substantially alter  
21     my quality of life because I did not -- I didn't want to  
22     live in an industrial park. The cumulative effect of  
23     both of these projects is -- it's hard for me to fathom.

24            And then there's the looming threat that another  
25     wind farm is in the -- we'll call it the pipeline.

1     Because I've come to understand -- and I'm not quite as  
2     naive as I was first -- that they don't just put up 42  
3     turbines.

4             So, first of all, will we even want to live  
5     there? Then will it be livable? Will we be affected by  
6     the noise, the audible noise, the low frequency noise,  
7     the infrasound, and the effects that it can cause on our  
8     health? Will one of us be affected?

9             And if we are and we would need to move or if we  
10    decide we don't want to live there, would we be able to  
11    market the house? And ethically how would we -- if one  
12    of us were having trouble, how would we ethically try to  
13    sell it to somebody else? And we do depend on our home  
14    as our biggest asset.

15            So my other concern is the experience that I've  
16    had with the representation of the county government --  
17    governments and the process of the development of this  
18    project. Excuse me a minute.

19            The way this went, I know it was now a different  
20    company, but it's always been the same developers. So  
21    the Prevailing Winds all of a sudden comes up, and they  
22    apply to the PUC. Then after the public hearing they  
23    withdraw their Application, and it is stated that it's to  
24    educate the misinformed community. It's stated that they  
25    would not divide it into smaller projects, and then

1       they --

2               MS. AGRIMONTI:   Mr. de Hueck, I'm going to  
3       object again.   The witness is testifying about what other  
4       entities may have said.

5               MR. DE HUECK:   Yeah.   Again, kind of going down  
6       that same road.   But I understand what you're trying to  
7       say.   If you can just do it without saying it in terms of  
8       they said this.

9               MS. JENKINS:   Okay.   Thank you.   I'm sorry.  
10              So it gets divided into 13 companies for the  
11       purpose of the -- selling the power, I guess.   And when  
12       that happened not they -- when that happened I was  
13       concerned about it because I thought that the project  
14       would come in as Beethoven did, without PUC approval.   So  
15       I sent an e-mail over here and asked if they -- if this  
16       was going to be considered one project or 13, and my  
17       response -- the response I received, that in the aspect  
18       of the 13 PURPA -- or 13 companies to sell the power the  
19       PUC still considered it one project.

20              And that -- to me, I don't understand that, and  
21       feel like it may have been against the law would be the  
22       way I would state that.

23              And then the sketchiness of how the easements  
24       for the project -- the rest of the people signed up for,  
25       the false press releases about the project being a go, a

1     done deal and that, which I feel coerced people into  
2     thinking why not sign up.

3             My concern is that not only as a resident, as a  
4     taxpayer, that my money is -- my taxes and my enjoyment  
5     of property, my rights are being taken advantage of and  
6     for the purpose of the production tax credit, what it  
7     offers to the companies that have a lot of money that  
8     build these -- or finance these wind farms.

9             And then in the county government I've -- I  
10    truly feel from my experience that we were not  
11    represented properly in each county. I had a right to  
12    speak and to advocate for our protection, which  
13    protection has always been what we would ask for. In my  
14    experience, it was that they really -- or my experience  
15    was there was no interest in assisting us to be  
16    protected.

17            I believe that the county -- counties were  
18    pressured. The zoning people didn't have this kind of  
19    experience with the big companies and --

20            MS. AGRIMONTI: Mr. de Hueck, I apologize,  
21    Ms. Jenkins, for interrupting again. There are a lot of  
22    beliefs blurring into conclusions of which the witness  
23    doesn't have any personal knowledge. And I don't mean to  
24    continue to interrupt, but I have to object at this  
25    point.

1 MR. DE HUECK: That's fine. I'm in agreement.

2 Did you understand what Ms. Agrimonti just said?  
3 To some degree the easiest way to summarize that is  
4 you're kind of speculating as to what others did and why.  
5 So if you can avoid that.

6 MS. JENKINS: Okay. What I witnessed was when  
7 an attorney -- when we were in meetings with developers  
8 and the citizens they would -- we were listened to a  
9 little bit. And when the developers' attorney was  
10 present in the meetings, then any concern for our -- our  
11 request became ignored.

12 I feel there were -- in one county a conflict of  
13 interest. I experienced a public meeting, a public  
14 hearing, for zoning -- I believe it was zoning --  
15 advertised in the paper with two different start times,  
16 which resulted in me -- my husband and I arriving at 7:30  
17 instead of 7:00 and no explanation as to -- or no good  
18 explanation, I should say.

19 MS. AGRIMONTI: Mr. de Hueck, I object again to  
20 the scope of this testimony. We're now getting into how  
21 Bon Homme or other counties may have adopted their zoning  
22 ordinances, and I believe that is outside the scope of  
23 the PUC's jurisdiction.

24 MR. DE HUECK: I'm going to go ahead and allow  
25 that testimony.



1 MS. JENKINS: Thank you.

2 COMMISSIONER NELSON: I guess I'd like for a  
3 vote. I would agree that that is outside of our  
4 jurisdiction. It is not anything that we would consider  
5 in determining whether or not the permit would be granted  
6 or any of the conditions that we might attach to it.

7 So I do think it's outside our jurisdiction.

8 MR. DE HUECK: Yeah. I'd ask that we take a  
9 Commission vote on that.

10 COMMISSIONER NELSON: Yeah. I'd certainly be  
11 open to listening to my fellow Commissioners if they feel  
12 otherwise.

13 MR. DE HUECK: So the reason I would have  
14 allowed the testimony was just based on the motion that  
15 we had before us at an earlier date. So I understand why  
16 you would want to do that.

17 So if we just put it up for a vote, basically  
18 I'll keep it simple. Do we allow Ms. Jenkins to continue  
19 down the road of describing the process that took place  
20 at the county level?

21 CHAIRWOMAN FIEGEN: Fiegen votes aye.

22 COMMISSIONER NELSON: Nelson votes nay.

23 COMMISSIONER HANSON: I was interested in where  
24 she was going, but I'll vote aye.

25 MR. DE HUECK: Okay. So, with that,

1 Ms. Jenkins, again try to keep in mind hearsay and  
2 speculation and whatnot. Please stick to your personal  
3 experience.

4 MS. JENKINS: I will tell you that was my  
5 experience. The public hearing was posted as at --

6 MR. DE HUECK: That's good.

7 MS. JENKINS: A late time, 7:30 and then later  
8 posted at 7:00. And I went by the 7:30 time. And I  
9 experienced that in Stockton when we were trying to  
10 protect our rights.

11 In Bon Homme County I went -- when the developer  
12 was trying to get the CUP for the met tower, the last met  
13 tower that they put up -- that was put up, and the board  
14 denied that permit in a few weeks.

15 We adamantly talked to the zoning board to  
16 understand our concerns and to try to educate themselves.  
17 And the Applicant -- or the developer moved the met tower  
18 location a few feet, submitted another Application for a  
19 Conditional Use Permit, and I returned to that meeting.  
20 Their attorney was present with a court reporter, and the  
21 board approved the met tower.

22 A board member told me --

23 MS. AGRIMONTI: Objection.

24 MS. JENKINS: Okay. It came to my attention  
25 that a board member had met with one of the developers in

1 order to educate herself.

2 MS. AGRIMONTI: I'm going to object and move to  
3 strike. She has merely restated a hearsay statement.

4 MR. DE HUECK: Yeah. I'm going to strike that  
5 as well.

6 MS. JENKINS: Okay.

7 I'll say I believe I witnessed the lack of  
8 transparency or ex parte communication on the part of a  
9 board member. I think it may have been innocent but --

10 MS. AGRIMONTI: Objection. Her interpretation  
11 of an event that she saw, it is not relevant to this  
12 proceeding, and it's inadmissible hearsay.

13 MR. DE HUECK: We'll go with the striking the  
14 innocent part, and her observation of ex parte meeting is  
15 fine to stay in the record.

16 With that, let's just continue. I think you  
17 have given a really good flavor of what's led up to your  
18 distrust. So just continue.

19 MS. JENKINS: So I went one time to get the  
20 minutes from that meeting that I spoke of that was  
21 advertised at two different start times and they were not  
22 available printed and we needed to bring a flash drive.  
23 And so I did that and paid for that and got it home and  
24 there was nothing on it.

25 Then the -- that would be specifically with the

1 auditor. That's who I dealt with there.

2 The chair of the zoning board, I felt like he  
3 was rude to me. That's my perception.

4 In Charles Mix County I went one time when  
5 they -- they were meeting after -- there was a regular  
6 meeting, and it was to -- they did some business in the  
7 morning and then at 1 o'clock Brian McGinnis came in and  
8 the board commissioners went over zoning ordinances that  
9 they were trying to get going for the county.

10 And I had the opportunity to speak to the  
11 Commissioners before that meeting started and I gave them  
12 a quicker testimony about my experience and I asked them  
13 to protect me, that their decision they made would affect  
14 me.

15 And the reason I went to that meeting -- one of  
16 the reasons -- came to my attention that an agreement  
17 was -- that the deputy attorney and the attorney for  
18 Prevailing Winds were meeting to come up with some kind  
19 of agreement on setbacks and noise levels and that so  
20 I -- that struck me as very odd.

21 So I went to that meeting and witnessed all of  
22 that, which was alarming because in my eyes when I went  
23 back home and after two or three days it was still  
24 nagging at me, I looked up the laws, and it felt to me I  
25 believe they were doing zoning without a public hearing.

1           So I contacted the deputy attorney and asked him  
2 for a copy of the agreement, and he said it wasn't an  
3 agreement. I asked him for a copy of the -- I called the  
4 auditor first. She didn't have one. She said she'd call  
5 the deputy attorney. I said I'll call him. I asked him  
6 for it. And he said --

7           MS. AGRIMONTI: Objection. The witness is  
8 testifying about a series of conversations with people  
9 who are not here, and it's hearsay.

10          MR. DE HUECK: Yes.

11          MS. JENKINS: Okay.

12           So that -- apparently what I was seeking was the  
13 signed agreement, and apparently it was not available.  
14 Nobody -- the auditor didn't know about it.

15           So then I go to Hutchinson County. I think I  
16 actually was in Hutchinson County the Tuesday before this  
17 Charles Mix meeting. And at that -- I just went there to  
18 ask them for protection because I knew that Prevailing  
19 Winds was going to be filing their Application shortly.  
20 And they were there, the representatives, and I gave my  
21 two cents there.

22           And then I went back. I sent some e-mails to  
23 the zoning administrator to make sure that whatever I  
24 wanted to -- the information I wanted the zoning board  
25 members to look at to educate themselves of the concerns,

1     that I had I sent it through the zoning board  
2     administrator so that he would be a filter because I knew  
3     they would be hearing the -- or deciding on the permits,  
4     and I didn't want to be dishonest.

5             So then I go to the public hearing for the five  
6     conditional use permits that the developer had filed for  
7     and gave them my -- I had a written statement with my  
8     concerns, and it's an exhibit. I can get you that number  
9     later.

10            I read it to them to save time. And I feel like  
11     all the answers -- what I witnessed was my concerns were  
12     addressed to the Applicant or Prevailing Winds and not to  
13     me. And I was given very little time to speak.

14            They went ahead and voted for the permit. They  
15     did a -- they put them all in one, voted and approved the  
16     permits, and they added one, a sixth permit, that was  
17     not -- there was no hearing for that -- or notice of a  
18     public hearing. It must have been something they forgot  
19     so they put it in without any explanation.

20            And after all of those permits, the six permits,  
21     were approved, five of them had been public noticed, and  
22     one of them had not. I think maybe it was before.  
23     Before they approved them they wanted -- the Applicant  
24     made a comment like do you have the 509 or some form that  
25     they wanted to make sure, and then they voted it all in.

1 Without any conditions.

2 So, to summarize slowly, I believe this will  
3 substantially affect my life in one way or another and --  
4 if the project is built and it will not be -- either way  
5 it would not be what I would choose to do. And I think I  
6 was here first.

7 I'm concerned about the public -- the  
8 governmental process I experienced, I feel that I have  
9 not been represented correctly. I feel that -- I believe  
10 the PUC would, if they saw any trouble in this, be able  
11 to refer it to a higher court.

12 I believe the cumulative effect of these  
13 additional turbines will be awful.

14 And I would just ask that you read over -- once  
15 you've had a little distance from me, read over the  
16 comments I've submitted, my data responses, my exhibits,  
17 and consider them.

18 And thank you for your time.

19 MR. DE HUECK: Thank you very much. I'm going  
20 to now tender you for cross-examination, beginning with  
21 the Applicant. Prevailing Winds.

22 MS. AGRIMONTI: Thank you, Mr. de Hueck.

23 CROSS-EXAMINATION

24 BY MS. AGRIMONTI:

25 Q. Many Jenkins, I heard you testify regarding your

1 participation in Charles Mix County regarding potential  
2 zoning changes. Do you recall that?

3 A. Yes.

4 Q. And I believe you testified that you talked to the  
5 county board of commissioners before a meeting that was  
6 going to be held publicly; is that correct?

7 A. It was a regular meeting.

8 Q. But I believe your testimony was that you talked to  
9 them before the regular meeting. Is that accurate?

10 A. Yes.

11 Q. And who did you talk to before the regular meeting  
12 who was on the board of commissioners?

13 A. I talked to -- the board was in their commissioners  
14 room meeting so I just walked in -- there was a big delay  
15 so I went in there and sat just to hear what their agenda  
16 was. And they came upon a -- in between the one person  
17 on the agenda, the highway man, they were waiting for  
18 another person to come in from the building, and I said  
19 would it be okay if I spoke to you while you're waiting?  
20 And they allowed me to address them.

21 Q. Okay. So, to be clear, that was still during an  
22 open meeting?

23 A. Open meeting.

24 Q. All right. Thank you.

25 A. You're welcome.



1 Q. Who was the developer of the Beethoven project?

2 A. Keith Thorstad.

3 Q. More specifically, a number of your statements were  
4 about the developer without a name. I'm asking you if  
5 you know the entity that developed the Beethoven project?

6 A. B&H Wind, LLC.

7 Q. All right. And do you know when the Applicant here,  
8 Prevailing Wind Park, LLC, was formed?

9 A. That's this Applicant here?

10 Q. Yes.

11 A. In September or December of last year.

12 Q. When you were talking about activities that occurred  
13 at the county level with respect to the Prevailing Wind  
14 Park Project, do you know if you were referring to  
15 Prevailing Wind Park, LLC or Prevailing Winds?

16 A. In Bon Homme County?

17 Q. I'm trying to understand the different entities.  
18 And I apologize if I'm not asking the most specific  
19 question.

20 You provided some information about, for example, in  
21 Bon Homme the development of the zoning ordinance. That  
22 was in 2015; is that correct?

23 A. Yes. I believe so.

24 Q. All right. And that would not have been Prevailing  
25 Wind Park in the conversations that you were -- or the --

1 your participation that you are discussing did not  
2 involve the developer who is the Applicant in this  
3 proceeding; is that right?

4 A. I believe you're correct.

5 Q. It couldn't have been; right? Because Prevailing  
6 Wind Park, LLC, the Applicant here, wasn't formed until  
7 2017; right?

8 A. Yeah.

9 Q. I have no further -- sorry. Go ahead.

10 A. The legal entity, yeah.

11 MS. AGRIMONTI: Thank you. I have no further  
12 questions.

13 MR. DE HUECK: Mr. Almond, do you have any  
14 cross-examination?

15 MR. ALMOND: One quick one.

16 CROSS-EXAMINATION

17 BY MR. ALMOND:

18 Q. You said you can hear the Beethoven turbines in your  
19 house currently. Can you describe what the sound is  
20 like.

21 A. It's a low hum. And I only notice it when I'm on  
22 the west side, and it's in the -- or it's a 100 year old  
23 house, and the rooms are -- they're small rooms. And  
24 it's when I'm in the two small rooms that are on the west  
25 side of the house.

1 Q. Are there any conditions, either climate conditions  
2 or any parts of the day, when the noise is worse than  
3 others that you've been able to identify?

4 A. I've noticed that this year with all the humidity  
5 and low clouds and that, that it has increased. More  
6 noticeable.

7 Q. Do you hear it more during the day or during the  
8 night?

9 A. More during the night.

10 MR. ALMOND: Nothing further.

11 A. Or early morning.

12 MR. ALMOND: Nothing further.

13 MR. DE HUECK: Mr. Fuerniss, do you have any  
14 cross-examination?

15 MR. FUERNISS: No.

16 MR. DE HUECK: Ms. Pazour, do you have any  
17 cross-examination?

18 MS. PAZOUR: No.

19 MR. DE HUECK: Staff, do you have any  
20 cross-examination?

21 MS. REISS: No. Thank you.

22 MR. DE HUECK: Okay. With that, Ms. Jenkins,  
23 thank you for your -- oh, hey. I forgot about the three  
24 most important people in this room.

25 CHAIRWOMAN FIEGEN: That is totally not true.

1           MR. DE HUECK: Commissioners, does anyone have  
2 any cross-examination? Starting with Commissioner  
3 Nelson.

4           COMMISSIONER NELSON: It's one thing to forget  
5 Staff but --

6           I'm just trying to orient myself. You live off  
7 of 289th Street; correct?

8           THE WITNESS: Yes.

9           COMMISSIONER NELSON: Which street is the county  
10 line between Hutchinson and Bon Homme County?

11          THE WITNESS: I believe it's 291st.

12          COMMISSIONER NELSON: Thank you.

13          MR. DE HUECK: Down to Commissioner Fiegen.

14          CHAIRWOMAN FIEGEN: Thank you. At one point --  
15 I just need to clarify what you meant by that. You  
16 talked about the 13 companies and that you called the --  
17 contacted the Public Utilities Commission. I thought  
18 that's what I heard. I don't know exactly how you  
19 contacted them.

20                 And then you said something about but it's  
21 against the law, I believe. The Public Utilities  
22 Commission's done something against the law? Or I don't  
23 know what the context of against the law meant.

24          THE WITNESS: I'm sorry. I don't really have  
25 anything to support it. I couldn't find any in the PURPA

1 law. I believe that there's probably something there so  
2 I guess that would be objected to as hearsay. But I just  
3 found it odd that it could be split up into 13 different  
4 LLCs for the purpose of selling the power, yet during  
5 that time the PUC -- that aspect of it the PUC considered  
6 it one project.

7 CHAIRWOMAN FIEGEN: So you thought it was  
8 against the law that we're siting them today or you think  
9 it's against the law that they divided? Who is breaking  
10 the law, the Public Utilities Commission, or you believe  
11 these 13 companies? I couldn't quite understand what --  
12 who was breaking the law?

13 THE WITNESS: I can't really say. I don't know.

14 CHAIRWOMAN FIEGEN: Okay.

15 MS. JENKINS: Could I ask for an explanation as  
16 to why the PUC would consider it one project when it was  
17 broken into 13 LLCs?

18 CHAIRWOMAN FIEGEN: You know, I'm not here to  
19 testify.

20 MS. JENKINS: Okay.

21 CHAIRWOMAN FIEGEN: I just wanted to clarify who  
22 you thought was breaking the law. I couldn't quite  
23 figure that out. And I'm not for sure if your statement  
24 right now is helping me figure that out either.

25 MS. JENKINS: Yeah. Sorry. I don't have any

1 support for it.

2 MR. DE HUECK: Commissioner Hanson.

3 COMMISSIONER HANSON: I didn't have any  
4 questions. Just a comment.

5 The PUC doesn't break those projects down into  
6 small -- if you're talking about the Beethoven or  
7 those -- the other projects? They made their choices,  
8 and the state law is such that we regulate 100 megawatts  
9 or over 100 megawatts for siting purposes for a wind  
10 farm.

11 So if they decide to do a 20-megawatt wind farm,  
12 we don't have any jurisdiction to go through a siting  
13 permit with them.

14 MS. JENKINS: I understand. And that's why I  
15 made that -- that's why I asked that question was why --  
16 because I was concerned that that's what was going to  
17 happen, that it would not come before your Commission.

18 COMMISSIONER HANSON: That's a decision that  
19 they made.

20 MS. JENKINS: Right.

21 COMMISSIONER HANSON: All right. Thank you.

22 MS. JENKINS: But during that time the PUC  
23 considered it one project. That was my answer.

24 COMMISSIONER HANSON: We considered it one  
25 project when they were first working on it because, as I

1 recall, recollect, and maybe I'm recalling incorrectly,  
2 but that's why we went through the process in Avon with  
3 the public hearing and the -- because it was over  
4 100 megawatts. It was like 120 or something like that.  
5 I forget what it was.

6 MS. JENKINS: I understand that. This happened  
7 after.

8 COMMISSIONER HANSON: However, then they  
9 withdrew it, and they made the decision to parcel it up  
10 into small projects.

11 MS. JENKINS: Yes. And then I asked the PUC if  
12 they -- if this would be considered one project or 13  
13 projects, and they said that that aspect it would be  
14 considered one project.

15 COMMISSIONER HANSON: Well, it would depend upon  
16 how the animal was put together afterwards, if it were  
17 pieced together with different substations or different  
18 lines or -- you know, it depends.

19 I'll just say that there's some game playing  
20 that could take place in order to fashion it so that it  
21 doesn't fall under our jurisdiction. Okay?

22 MS. JENKINS: I understand what you're saying.  
23 I still have the question of -- lingering.

24 COMMISSIONER HANSON: I'll just say from my  
25 standpoint, I don't like that. I'm not thrilled about

1 going through hearings of this nature, but I'd rather do  
2 that than have it piecemealed like that. I'd much rather  
3 talk to them about whooping cranes and such.

4 MS. JENKINS: I'd rather not be here too. Thank  
5 you.

6 (The witness is excused.)

7 MR. DE HUECK: Okay. So on that note, if it's  
8 okay with the Commission, I'm going to call it a day, and  
9 we'll crank up tomorrow. And we'll begin with  
10 Mr. Reece's case in chief.

11 Ms. Smith, do you have something to add?

12 MS. SMITH: I just wanted to ask, are we  
13 starting at 8:30?

14 MR. DE HUECK: Let me get there. I'll see  
15 everyone tomorrow at 8:30.

16 (The hearing is in recess at 6:45 p.m.)

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1 STATE OF SOUTH DAKOTA)

2 :SS

CERTIFICATE

3 COUNTY OF SULLY )

4

5 I, CHERI MCCOMSEY WITTLER, a Registered  
6 Professional Reporter, Certified Realtime Reporter and  
7 Notary Public in and for the State of South Dakota:

8 DO HEREBY CERTIFY that as the duly-appointed  
9 shorthand reporter, I took in shorthand the proceedings  
10 had in the above-entitled matter on the 10th day of  
11 October, 2018, and that the attached is a true and  
12 correct transcription of the proceedings so taken.

13 Dated at Onida, South Dakota this 31st day of  
14 October, 2018.

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/s/ Cheri McComsey Wittler  
Cheri McComsey Wittler,  
Notary Public and  
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<b>\$</b>	<b>10-2</b> [1] - 500:15	<b>1144</b> [1] - 339:11	534:15, 554:25,	344:24, 345:3,
<b>\$500</b> [1] - 356:9	<b>10-dBA</b> [1] - 520:7	<b>1145</b> [1] - 339:12	555:1, 578:23,	345:4, 345:5, 345:6,
<b>'</b>	<b>10-decibel</b> [1] - 520:6	<b>1147</b> [1] - 339:12	581:12	345:9, 345:12,
<b>'16</b> [1] - 610:10	<b>10-foot</b> [1] - 559:2	<b>1149</b> [1] - 339:13	<b>153</b> [1] - 333:13	345:15, 345:18,
<b>'18</b> [1] - 343:23	<b>10-minute</b> [1] - 507:4	<b>1154</b> [1] - 339:13	<b>159</b> [2] - 612:20,	345:21, 345:22,
<b>/</b>	<b>100</b> [12] - 340:20,	<b>1155</b> [3] - 346:22	612:21	345:24, 346:3,
<b>/s</b> [1] - 643:17	381:17, 461:23,	<b>117</b> [1] - 504:16	<b>16</b> [20] - 413:21,	346:4, 346:7, 346:8,
<b>0</b>	514:24, 527:11,	<b>1173</b> [2] - 343:10	413:22, 443:5,	346:9, 346:10,
<b>0.0</b> [1] - 498:24	538:9, 547:24,	<b>1174</b> [6] - 346:17,	443:8, 466:8,	346:12, 347:3,
<b>0.5</b> [2] - 498:13, 499:7	548:6, 636:22,	346:19	477:16, 495:9,	347:4, 347:5, 347:5,
<b>1</b>	640:8, 640:9, 641:4	<b>1175</b> [11] - 347:14,	496:18, 534:12,	347:7, 347:8, 347:8,
<b>1</b> [30] - 340:4, 340:5,	<b>1008</b> [1] - 338:8	347:14, 347:15,	540:4, 540:7,	347:9, 347:10,
340:7, 341:16,	<b>1016</b> [1] - 338:8	347:18, 347:19,	540:12, 545:9,	347:12, 347:13,
342:19, 343:7,	<b>1019</b> [1] - 338:9	347:20, 347:20,	545:11, 545:21,	347:14, 347:14,
343:11, 343:12,	<b>1021</b> [1] - 338:9	347:21, 347:21,	546:17, 546:19,	347:15, 347:17,
343:15, 343:17,	<b>1023</b> [2] - 338:10,	348:3, 348:6	546:20, 547:4, 614:7	347:18, 347:19,
343:18, 343:20,	338:10	<b>1176</b> [11] - 347:14,	<b>16-2088</b> [1] - 346:21	347:20, 347:20,
343:22, 344:23,	<b>1029</b> [1] - 338:11	347:14, 347:15,	<b>169</b> [1] - 333:13	347:21, 347:21,
344:24, 347:8,	<b>1032</b> [1] - 338:13	347:18, 347:19,	<b>16th</b> [1] - 533:10	347:22, 348:3,
347:14, 347:19,	<b>1037</b> [1] - 338:13	347:20, 347:20,	<b>174</b> [1] - 549:12	348:5, 348:6, 348:8,
349:9, 349:10,	<b>1038</b> [1] - 338:14	347:21, 347:21,	<b>177</b> [1] - 333:14	348:9, 348:9,
367:19, 489:7,	<b>1041</b> [1] - 338:14	348:3, 348:6	<b>178</b> [1] - 560:21	348:10, 348:12,
511:9, 512:13,	<b>1042</b> [1] - 338:15	<b>12</b> [11] - 349:11,	<b>18</b> [6] - 443:8, 575:6,	348:13, 348:14,
547:14, 571:6,	<b>1045</b> [1] - 338:17	380:25, 381:14,	587:8, 587:10,	348:14, 348:16,
571:7, 613:20, 630:7	<b>1054</b> [1] - 338:17	381:18, 453:22,	608:1, 611:18	348:16, 348:17,
<b>1,000</b> [3] - 365:12,	<b>1056</b> [3] - 346:20	522:25, 534:18,	<b>182</b> [1] - 333:14	348:18, 348:19,
549:25, 590:12	<b>1057</b> [1] - 338:18	544:8, 556:1, 564:1,	<b>183</b> [1] - 448:13	348:20, 348:21,
<b>1-6a</b> [1] - 347:19	<b>1060</b> [1] - 338:18	564:4	<b>185</b> [1] - 333:16	348:22, 348:23,
<b>1-6e</b> [1] - 347:19	<b>1069</b> [1] - 338:19	<b>12/12/24</b> [1] - 349:4	<b>188</b> [1] - 333:17	348:24, 349:9,
<b>1.0</b> [3] - 499:13,	<b>1070</b> [1] - 338:21	<b>120</b> [2] - 575:23, 641:4	<b>1896</b> [1] - 572:6	349:10, 349:10,
499:16, 499:22	<b>108</b> [1] - 560:25	<b>1275990</b> [1] - 346:15	<b>19</b> [138] - 340:3, 340:3,	349:11, 349:11,
<b>1.07</b> [1] - 614:10	<b>1084</b> [1] - 338:21	<b>12:00</b> [3] - 472:8,	340:4, 340:4, 340:5,	349:12, 349:13,
<b>1.1</b> [2] - 577:3, 577:7	<b>1087</b> [1] - 338:22	497:19, 587:5	340:6, 340:7, 340:7,	349:16, 349:18,
<b>1.5</b> [4] - 531:14,	<b>1089</b> [1] - 338:22	<b>13</b> [13] - 341:15,	340:8, 340:11,	349:19, 349:21,
531:24, 554:25	<b>10:00</b> [1] - 587:6	349:12, 377:9,	340:14, 340:17,	456:19, 600:5
<b>10</b> [31] - 332:7, 342:23,	<b>10:10</b> [1] - 406:23	497:22, 624:10,	340:19, 340:24,	<b>195-206</b> [1] - 342:25
343:23, 346:7,	<b>10th</b> [2] - 350:4,	624:16, 624:18,	341:3, 341:7,	<b>198</b> [1] - 333:17
358:20, 360:16,	643:10	638:16, 639:3,	341:10, 341:13,	<b>199</b> [1] - 333:18
377:10, 377:11,	<b>11</b> [8] - 343:3, 409:3,	639:11, 639:17,	341:15, 341:16,	<b>1999</b> [1] - 348:23
387:17, 396:9,	409:8, 409:9,	641:12	341:21, 341:23,	<b>1:15</b> [1] - 476:14
396:11, 430:21,	452:12, 495:20,	<b>13.2</b> [1] - 413:23	342:3, 342:7,	<b>1:30</b> [1] - 476:17
449:19, 467:22,	496:1, 552:11	<b>1341</b> [1] - 347:23	342:10, 342:13,	
472:8, 482:16,	<b>110</b> [5] - 375:23,	<b>136</b> [2] - 409:5, 409:6	342:17, 342:19,	<b>2</b>
489:6, 495:18,	526:14, 529:5,	<b>137</b> [3] - 529:7,	342:23, 343:3,	<b>2</b> [30] - 340:6, 340:8,
507:12, 536:13,	554:1, 554:4	559:11, 559:12	343:6, 343:7, 343:7,	341:21, 342:25,
552:11, 559:9,	<b>1100</b> [1] - 339:4	<b>14</b> [4] - 349:13,	343:9, 343:10,	343:7, 343:14,
559:12, 563:8,	<b>1104</b> [1] - 339:4	485:15, 533:11,	343:10, 343:11,	343:16, 343:21,
564:6, 587:10,	<b>111</b> [2] - 505:24,	586:13	343:11, 343:12,	344:3, 347:8,
607:14, 609:18,	505:25	<b>140</b> [1] - 375:24	343:12, 343:14,	347:15, 347:20,
619:17, 620:8	<b>111.5</b> [2] - 474:11,	<b>144</b> [1] - 333:12	343:14, 343:15,	349:10, 349:11,
<b>10,000</b> [1] - 409:16	529:6	<b>15</b> [15] - 382:15, 387:5,	343:16, 343:17,	358:12, 358:13,
<b>10-1</b> [1] - 500:16	<b>1110</b> [2] - 339:5, 339:5	406:23, 454:18,	343:17, 343:18,	489:20, 531:10,
	<b>1112</b> [1] - 339:6	480:24, 482:16,	343:18, 343:20,	534:16, 552:4,
	<b>1129</b> [1] - 339:6	525:13, 536:13,	343:20, 343:21,	571:7, 571:8,
	<b>1133</b> [2] - 339:7, 339:7	543:23, 556:1,	343:22, 343:22,	583:11, 586:18,
	<b>1134</b> [1] - 339:8	562:8, 562:14,	344:3, 344:7,	586:19, 586:20,
	<b>1138</b> [1] - 339:11	572:17, 586:1	344:11, 344:15,	586:22, 613:20
	<b>1141</b> [3] - 346:17	<b>15-decibel</b> [1] -	344:18, 344:22,	<b>2,000</b> [2] - 549:25,
	<b>1143</b> [3] - 346:16	480:25	344:22, 344:23,	590:13
		<b>150</b> [7] - 333:12,	344:23, 344:24,	<b>20</b> [10] - 382:15, 387:5,

400:3, 400:20, 430:13, 516:6, 516:7, 516:8, 552:3, 564:5 <b>20,000</b> [1] - 516:6 <b>20-megawatt</b> [1] - 640:11 <b>200</b> [3] - 422:25, 426:2, 516:7 <b>2000</b> [1] - 430:7 <b>2003</b> [1] - 342:11 <b>2005</b> [1] - 551:23 <b>2006</b> [1] - 532:11 <b>2008</b> [2] - 342:24, 615:17 <b>2009</b> [2] - 341:24, 348:22 <b>201</b> [2] - 333:18, 333:19 <b>2010</b> [4] - 340:9, 342:7, 342:10, 616:4 <b>2011</b> [1] - 616:7 <b>2012</b> [4] - 341:11, 344:4, 344:6, 358:9 <b>2013</b> [3] - 344:12, 344:15, 616:9 <b>2014</b> [7] - 340:12, 340:24, 342:20, 344:19, 353:8, 367:21, 596:7 <b>2015</b> [7] - 340:15, 340:18, 341:8, 380:17, 437:14, 470:18, 635:22 <b>2016</b> [16] - 341:18, 342:14, 344:8, 344:10, 346:15, 346:15, 346:19, 361:15, 427:10, 431:20, 437:17, 447:6, 447:19, 470:12, 470:13, 470:22 <b>2017</b> [9] - 341:3, 341:15, 341:21, 342:5, 346:21, 348:5, 439:7, 439:8, 636:7 <b>2018</b> [13] - 332:7, 342:19, 343:19, 350:4, 427:13, 430:21, 431:20, 473:20, 484:7, 485:15, 611:2, 643:11, 643:14 <b>203</b> [1] - 333:21 <b>20th</b> [1] - 342:9 <b>21</b> [2] - 348:4, 500:24 <b>211</b> [1] - 333:21 <b>213</b> [1] - 332:25	<b>22</b> [2] - 509:24, 603:5 <b>224</b> [1] - 559:6 <b>225</b> [1] - 563:5 <b>237</b> [1] - 333:22 <b>24</b> [4] - 444:3, 604:19, 605:3, 605:7 <b>24/7</b> [5] - 520:10, 520:22, 542:2, 550:22, 550:23 <b>240</b> [2] - 333:22, 333:23 <b>25</b> [12] - 481:13, 481:16, 481:20, 481:21, 482:4, 482:11, 482:13, 515:4, 520:1, 520:2, 564:6, 620:1 <b>253</b> [1] - 333:23 <b>26</b> [158] - 340:3, 340:3, 340:4, 340:4, 340:5, 340:6, 340:7, 340:7, 340:8, 340:11, 340:14, 340:17, 340:19, 340:24, 341:3, 341:7, 341:10, 341:13, 341:15, 341:16, 341:21, 341:23, 342:3, 342:7, 342:10, 342:13, 342:17, 342:19, 342:23, 343:3, 343:6, 343:7, 343:7, 343:9, 343:10, 343:11, 343:11, 343:14, 343:15, 343:16, 343:17, 343:17, 343:18, 343:18, 343:20, 343:20, 343:21, 343:22, 343:22, 344:3, 344:7, 344:11, 344:15, 344:18, 344:22, 344:22, 344:23, 344:23, 344:24, 344:24, 345:3, 345:4, 345:5, 345:6, 345:9, 345:12, 345:15, 345:18, 345:21, 345:22, 345:24, 346:3, 346:4, 346:7, 346:8, 346:9, 346:10, 346:12, 431:1, 473:20 <b>263</b> [1] - 583:23 <b>27</b> [1] - 408:5 <b>270</b> [1] - 548:4 <b>28</b> [9] - 346:15, 347:3,	347:4, 347:5, 347:5 <b>28.1</b> [1] - 496:3 <b>28.6</b> [1] - 587:5 <b>282</b> [1] - 333:24 <b>284</b> [1] - 360:17 <b>285</b> [1] - 333:24 <b>287</b> [1] - 333:25 <b>289</b> [1] - 334:4 <b>289th</b> [2] - 614:3, 638:7 <b>29</b> [39] - 347:17, 347:22, 348:5, 348:8, 348:9, 348:10, 348:12, 348:13, 348:14, 348:14, 348:16, 348:17, 348:18, 348:19, 348:20, 348:21, 348:22, 348:23, 348:24, 605:1 <b>29.6</b> [1] - 587:5 <b>291st</b> [1] - 638:11 <b>293</b> [1] - 334:4 <b>293rd</b> [2] - 571:16, 583:23 <b>29668</b> [1] - 596:6 <b>2:220</b> [1] - 342:22 <b>2a</b> [1] - 340:11 <b>2b</b> [1] - 340:14 <b>2c</b> [1] - 340:17	519:25, 520:3, 520:4, 520:6, 572:7, 586:5 <b>30,000</b> [1] - 551:15 <b>30.2</b> [1] - 587:6 <b>300</b> [1] - 452:23 <b>30049</b> [1] - 392:20 <b>305</b> [1] - 334:5 <b>306</b> [1] - 334:5 <b>307</b> [1] - 334:6 <b>309</b> [1] - 334:8 <b>31</b> [16] - 342:24, 349:9, 349:10, 349:10, 349:11, 349:11, 349:12, 349:13, 516:25 <b>31.6</b> [1] - 496:3 <b>313</b> [1] - 334:8 <b>314</b> [1] - 334:9 <b>316</b> [1] - 334:9 <b>318</b> [1] - 334:11 <b>31st</b> [2] - 573:16, 643:13 <b>32.4</b> [1] - 605:6 <b>33</b> [1] - 526:25 <b>330</b> [1] - 548:7 <b>332</b> [1] - 453:23 <b>332-643</b> [1] - 332:8 <b>34</b> [14] - 349:16, 349:18, 349:19, 349:21, 464:15, 522:8, 527:1, 528:1, 528:7, 586:1 <b>34.2</b> [1] - 605:8 <b>340</b> [1] - 575:22 <b>35</b> [16] - 481:20, 481:21, 483:12, 483:15, 501:6, 501:7, 501:9, 510:11, 520:1, 520:2, 522:9, 528:1, 528:7, 577:23, 585:3 <b>35.7</b> [1] - 587:5 <b>35.8</b> [2] - 586:9, 586:12 <b>351</b> [1] - 334:12 <b>358(6359):44</b> [1] - 343:6 <b>36</b> [3] - 586:9, 586:11, 586:12 <b>36.5</b> [1] - 587:4 <b>37</b> [2] - 398:1, 496:21 <b>37.7</b> [1] - 495:24 <b>370</b> [1] - 334:12 <b>371</b> [2] - 334:13, 334:13 <b>374</b> [1] - 334:14 <b>379</b> [1] - 334:14 <b>38</b> [2] - 407:18, 501:10 <b>380</b> [1] - 334:15	<b>383</b> [1] - 334:15 <b>384</b> [1] - 334:16 <b>386</b> [1] - 334:16 <b>388</b> [1] - 334:17 <b>39</b> [1] - 587:6 <b>392</b> [1] - 334:19 <b>399</b> [1] - 334:19 <b>3:05</b> [1] - 528:19
<b>4</b>				
<b>4</b> [12] - 340:24, 342:3, 344:11, 347:10, 347:21, 349:11, 447:4, 458:7, 458:8, 458:11, 538:12, 599:25 <b>4-1</b> [3] - 494:24, 494:25, 586:2 <b>4-2</b> [4] - 603:4, 604:21, 604:23, 613:10 <b>4-2018</b> [2] - 349:10, 349:11 <b>4.1</b> [1] - 604:21 <b>40</b> [29] - 333:4, 363:22, 364:1, 364:7, 364:18, 365:14, 365:25, 444:23, 458:6, 458:8, 493:1, 493:2, 493:5, 493:8, 494:19, 501:11, 510:11, 514:3, 514:8, 519:3, 520:1, 520:5, 520:6, 523:2, 583:22, 597:23, 612:20 <b>40,000</b> [3] - 534:19, 534:23, 537:22 <b>400</b> [2] - 452:24, 454:2 <b>40263</b> [1] - 571:16 <b>402nd</b> [1] - 596:6 <b>405</b> [1] - 593:19 <b>407</b> [1] - 334:20 <b>407th</b> [1] - 392:20 <b>410th</b> [1] - 614:3 <b>416</b> [1] - 334:20 <b>417</b> [1] - 334:21 <b>418</b> [1] - 334:21 <b>419</b> [2] - 334:22, 454:23 <b>42</b> [2] - 408:3, 623:2 <b>420</b> [1] - 454:23 <b>424</b> [1] - 454:24 <b>425</b> [2] - 334:22, 334:23 <b>427</b> [1] - 334:23 <b>429</b> [1] - 335:4 <b>43</b> [8] - 333:4, 407:22, 407:23, 501:12, 577:23, 585:3,				

614:16, 616:25 <b>433</b> [1] - 335:4 <b>437</b> [1] - 335:5 <b>438</b> [1] - 335:5 <b>44</b> [1] - 408:1 <b>44.9</b> [1] - 509:15 <b>445</b> [1] - 335:6 <b>45</b> [25] - 360:12, 360:13, 360:25, 361:9, 366:18, 387:20, 456:20, 481:14, 482:6, 486:20, 486:23, 493:21, 495:14, 495:19, 495:22, 496:2, 496:6, 496:22, 497:17, 509:19, 510:11, 511:7, 512:23, 515:19, 515:23 <b>45.0</b> [1] - 509:15 <b>450</b> [3] - 585:6, 589:14, 593:19 <b>46</b> [4] - 361:3, 365:14, 365:16, 377:16 <b>468</b> [1] - 335:6 <b>469</b> [2] - 335:7, 335:7 <b>47</b> [1] - 496:20 <b>471</b> [1] - 335:8 <b>473</b> [1] - 335:10 <b>474</b> [3] - 343:12, 343:12, 343:14 <b>475</b> [3] - 343:12, 343:12, 343:14 <b>477</b> [1] - 335:10 <b>48</b> [6] - 454:25, 496:16, 496:20, 508:9, 519:15, 519:17 <b>49</b> [2] - 603:17, 603:20 <b>4:56</b> [1] - 595:17	585:6 <b>504</b> [1] - 335:11 <b>509</b> [2] - 335:11, 632:24 <b>51</b> [1] - 561:1 <b>511</b> [1] - 335:12 <b>514</b> [1] - 335:12 <b>518</b> [1] - 335:13 <b>52</b> [6] - 333:5, 333:6, 408:7, 408:10, 561:1, 575:23 <b>522</b> [1] - 335:15 <b>527</b> [4] - 346:13, 346:13 <b>528</b> [2] - 346:13, 346:13 <b>529</b> [1] - 335:15 <b>532</b> [2] - 348:9 <b>54</b> [8] - 333:6, 560:8, 560:12, 560:15, 560:17, 560:18, 560:19, 561:2 <b>550</b> [1] - 335:16 <b>553</b> [1] - 335:16 <b>561</b> [1] - 335:17 <b>569</b> [1] - 335:17 <b>571</b> [1] - 335:20 <b>58</b> [5] - 333:7, 368:6, 368:7, 519:14, 519:17 <b>583</b> [1] - 335:21 <b>589</b> [2] - 335:21, 335:22 <b>59</b> [4] - 342:24, 368:5, 368:21, 368:22 <b>590</b> [2] - 488:16, 549:1 <b>590-foot</b> [1] - 550:1 <b>592</b> [1] - 335:22 <b>596</b> [1] - 336:4 <b>5:00</b> [2] - 496:1, 587:4 <b>5:10</b> [1] - 595:17	<b>636</b> [1] - 336:10 <b>638</b> [1] - 336:10 <b>64</b> [2] - 442:23, 443:1 <b>643</b> [2] - 526:15, 554:19 <b>65</b> [1] - 387:23 <b>663</b> [1] - 336:13 <b>674</b> [2] - 348:16 <b>68</b> [5] - 585:16, 585:18, 585:19, 586:7, 586:9 <b>6808:2010</b> [1] - 342:8 <b>69</b> [4] - 585:17, 585:19, 586:7, 586:9 <b>690</b> [2] - 336:14, 554:7 <b>692</b> [1] - 336:14 <b>695</b> [1] - 336:16 <b>6:45</b> [1] - 642:16	628:7, 628:8	<b>A</b>
		<b>7</b>	<b>8</b>	<b>A&amp;M</b> [1] - 522:24 <b>A-1</b> [1] - 585:12 <b>A-18</b> [1] - 351:18 <b>A-weighted</b> [1] - 517:2 <b>A-weighting</b> [1] - 516:17 <b>a.m</b> [5] - 332:7, 350:5, 497:19, 587:5, 587:6 <b>A1</b> [3] - 340:3, 604:6, 604:9 <b>A10</b> [10] - 343:12, 473:23, 474:22, 483:24, 485:14, 500:24, 504:15, 585:9, 585:25, 605:1 <b>A10-1</b> [4] - 343:12, 473:23, 473:25, 474:22 <b>A10-2</b> [4] - 343:14, 474:3, 474:22, 586:14 <b>A11</b> [1] - 343:14 <b>A11-1</b> [1] - 343:15 <b>A11-2</b> [1] - 343:16 <b>A12</b> [4] - 343:17, 430:18, 431:14, 470:10 <b>A12-1</b> [2] - 343:17, 430:18 <b>A13</b> [2] - 343:18, 430:23 <b>A13-1</b> [2] - 343:18, 430:23 <b>A14</b> [4] - 343:20, 431:3, 442:24, 443:3 <b>A14-1</b> [2] - 343:20, 431:3 <b>A14-2</b> [2] - 343:21, 431:3 <b>A15</b> [1] - 343:22 <b>A15-1</b> [1] - 343:22 <b>A15-2</b> [1] - 344:3 <b>A15-3</b> [1] - 344:7 <b>A15-4</b> [1] - 344:11 <b>A15-5</b> [1] - 344:15 <b>A15-6</b> [1] - 344:18 <b>A15-7</b> [1] - 344:22 <b>A16R</b> [1] - 344:22 <b>A17</b> [6] - 344:23, 523:6, 523:14, 523:19, 523:24, 524:2 <b>A17-1</b> [4] - 344:23, 523:6, 523:15, 523:17 <b>A18</b> [1] - 344:24 <b>A18-1</b> [1] - 344:24 <b>A19</b> [1] - 345:3
<b>5</b>	<b>6</b>	<b>7</b>	<b>9</b>	
<b>5</b> [14] - 341:3, 342:7, 344:15, 347:12, 347:21, 348:5, 481:8, 482:15, 499:5, 499:11, 500:5, 519:8, 549:25, 560:19 <b>50</b> [11] - 333:5, 360:3, 360:20, 360:22, 360:23, 361:6, 377:11, 444:22, 483:14, 515:3, 520:13 <b>50,000</b> [2] - 409:24, 456:21 <b>500</b> [3] - 350:3, 356:8,	<b>6</b> [5] - 341:7, 342:10, 344:18, 347:13, 362:24 <b>6.5</b> [1] - 538:12 <b>60</b> [5] - 387:22, 393:13, 414:23, 414:24, 515:3 <b>600</b> [1] - 538:9 <b>602</b> [1] - 336:4 <b>609</b> [1] - 336:5 <b>61</b> [4] - 409:1, 409:25, 456:23, 562:14 <b>610</b> [1] - 336:5 <b>611</b> [1] - 336:6 <b>614</b> [1] - 336:9 <b>633</b> [1] - 336:9	<b>7</b> [4] - 341:10, 342:13, 343:19, 534:12 <b>7.4</b> [1] - 565:22 <b>7.4.1</b> [3] - 565:22, 566:11, 566:16 <b>70</b> [3] - 461:23, 534:10, 615:11 <b>700</b> [1] - 534:13 <b>703</b> [1] - 336:17 <b>704</b> [1] - 336:17 <b>707</b> [2] - 336:18, 336:18 <b>708</b> [1] - 336:19 <b>709</b> [1] - 336:19 <b>710</b> [1] - 336:20 <b>711</b> [1] - 336:20 <b>712</b> [1] - 336:21 <b>713</b> [1] - 337:4 <b>72</b> [2] - 442:23, 443:1 <b>724</b> [1] - 337:4 <b>731</b> [1] - 337:5 <b>749</b> [3] - 349:4 <b>756</b> [3] - 349:5 <b>758</b> [1] - 337:5 <b>759</b> [1] - 337:6 <b>765</b> [1] - 337:6 <b>782</b> [1] - 337:7 <b>784</b> [1] - 337:7 <b>786</b> [1] - 337:8 <b>788</b> [1] - 337:8 <b>790</b> [1] - 337:9 <b>792</b> [1] - 337:12 <b>797</b> [14] - 347:7, 347:8, 347:8, 347:9, 347:10, 347:12, 347:13 <b>7:00</b> [2] - 626:17, 628:8 <b>7:30</b> [3] - 626:16,	<b>8</b> [9] - 341:13, 342:17, 346:21, 397:22, 483:25, 484:1, 485:14, 499:16, 563:15 <b>8.3</b> [1] - 480:13 <b>8/22/18</b> [1] - 348:14 <b>80</b> [3] - 333:7, 547:25, 548:4 <b>81</b> [1] - 333:8 <b>819</b> [1] - 337:12 <b>82</b> [1] - 333:8 <b>83</b> [2] - 504:15, 591:16 <b>837</b> [1] - 337:13 <b>84</b> [1] - 448:13 <b>842</b> [1] - 337:13 <b>85</b> [1] - 333:9 <b>869</b> [1] - 337:14 <b>87</b> [1] - 333:11 <b>871</b> [1] - 337:14 <b>880</b> [1] - 337:15 <b>881</b> [1] - 337:17 <b>896</b> [1] - 337:17 <b>8:30</b> [4] - 332:7, 350:5, 642:13, 642:15	<b>9</b> [6] - 342:19, 358:10, 412:18, 412:19, 448:9, 552:11 <b>9.4</b> [1] - 412:19 <b>9/25/18</b> [1] - 347:18 <b>90</b> [2] - 420:20, 495:17 <b>916</b> [2] - 337:18, 337:18 <b>921</b> [1] - 337:20 <b>935</b> [1] - 337:21 <b>936</b> [1] - 337:21 <b>937</b> [1] - 337:22 <b>941</b> [1] - 337:22 <b>95</b> [1] - 333:11 <b>951</b> [1] - 337:23 <b>952</b> [1] - 338:4 <b>9613</b> [4] - 505:3, 505:7, 506:22, 516:24 <b>9613-2</b> [2] - 493:14, 494:11 <b>966</b> [3] - 349:7 <b>973</b> [1] - 338:4 <b>979</b> [2] - 338:5, 338:5 <b>981</b> [1] - 338:6 <b>986</b> [3] - 346:14

<p><b>A2</b> [1] - 340:3  <b>A2-1</b> [1] - 340:4  <b>A20-1</b> [2] - 345:4, 608:12  <b>A20-2</b> [12] - 345:5, 407:15, 436:3, 436:10, 436:13, 436:15, 436:17, 602:25, 603:6, 603:9, 603:10, 603:15  <b>A21-1</b> [1] - 345:6  <b>A21-2</b> [1] - 345:9  <b>A22-1</b> [1] - 345:12  <b>A22-2</b> [1] - 345:15  <b>A22-3</b> [1] - 345:18  <b>A23</b> [1] - 345:21  <b>A24</b> [1] - 345:22  <b>A25</b> [1] - 345:24  <b>A27</b> [1] - 346:3  <b>A28</b> [4] - 346:4, 533:5, 533:8, 538:7  <b>A29</b> [1] - 346:7  <b>A3</b> [1] - 340:4  <b>A3-1</b> [1] - 340:5  <b>A3-2</b> [1] - 340:6  <b>A30</b> [1] - 346:8  <b>A31</b> [1] - 346:9  <b>A32</b> [2] - 346:10, 589:23  <b>A33</b> [2] - 346:12, 527:23  <b>A34</b> [3] - 346:13, 527:23, 566:15  <b>A35</b> [1] - 346:13  <b>A36</b> [1] - 346:14  <b>A37</b> [1] - 346:16  <b>A38</b> [1] - 346:17  <b>A39</b> [1] - 346:17  <b>A4</b> [1] - 340:7  <b>A4-1</b> [1] - 340:7  <b>A4-2</b> [1] - 340:8  <b>A4-2a</b> [1] - 340:11  <b>A4-2b</b> [1] - 340:14  <b>A4-2c</b> [1] - 340:17  <b>A4-3</b> [1] - 340:19  <b>A4-4</b> [2] - 340:24, 367:8  <b>A4-5</b> [1] - 341:3  <b>A4-6</b> [1] - 341:7  <b>A4-7</b> [3] - 341:10, 356:15, 358:10  <b>A4-8</b> [1] - 341:13  <b>A40</b> [1] - 346:19  <b>A41</b> [1] - 346:20  <b>A42</b> [1] - 346:22  <b>A5</b> [1] - 341:15  <b>A5-1</b> [1] - 341:16  <b>A5-10</b> [1] - 342:23</p>	<p><b>A5-11</b> [1] - 343:3  <b>A5-2</b> [1] - 341:21  <b>A5-3</b> [1] - 341:23  <b>A5-4</b> [1] - 342:3  <b>A5-5</b> [1] - 342:7  <b>A5-6</b> [1] - 342:10  <b>A5-7</b> [1] - 342:13  <b>A5-8</b> [1] - 342:17  <b>A5-9</b> [1] - 342:19  <b>A6</b> [1] - 343:6  <b>A6-1</b> [1] - 343:7  <b>A6-2</b> [1] - 343:7  <b>A6-3</b> [1] - 343:9  <b>A7</b> [1] - 343:10  <b>A8</b> [1] - 343:10  <b>A9</b> [3] - 343:11, 473:15, 489:17  <b>A9-1</b> [2] - 343:11, 473:16  <b>AARON</b> [1] - 333:3  <b>Abdnor</b> [1] - 571:22  <b>ability</b> [2] - 434:12, 518:24  <b>able</b> [25] - 359:4, 361:5, 361:9, 373:24, 381:2, 404:16, 406:16, 409:9, 437:1, 462:19, 503:4, 546:15, 546:18, 559:21, 559:24, 576:1, 583:10, 584:6, 585:1, 585:14, 615:1, 618:4, 623:10, 633:10, 637:3  <b>Abourezk</b> [1] - 571:21  <b>above-entitled</b> [2] - 350:2, 643:10  <b>absent</b> [1] - 527:24  <b>absentee</b> [2] - 428:13, 428:15  <b>absolute</b> [1] - 516:12  <b>absolutely</b> [3] - 390:7, 404:23, 442:22  <b>absorptions</b> [1] - 498:22  <b>abstract</b> [3] - 517:25, 534:5, 538:7  <b>abuse</b> [1] - 373:12  <b>academic</b> [3] - 477:17, 478:1, 572:2  <b>acceptable</b> [1] - 387:18  <b>Acceptance</b> [1] - 341:4  <b>accepted</b> [4] - 372:4, 474:21, 477:18, 480:17  <b>accepting</b> [1] - 621:12</p>	<p><b>access</b> [2] - 368:4, 406:17  <b>accessible</b> [1] - 443:10  <b>accomplished</b> [1] - 448:19  <b>accordance</b> [1] - 440:21  <b>according</b> [4] - 413:9, 421:6, 457:3, 482:21  <b>accordingly</b> [1] - 525:1  <b>account</b> [2] - 474:12, 483:19  <b>accumulate</b> [13] - 530:6, 530:13, 530:16, 530:17, 530:20, 531:1, 531:2, 531:3, 539:4, 558:2, 558:16, 567:7, 567:20  <b>accumulated</b> [2] - 530:11, 545:23  <b>accumulates</b> [5] - 544:23, 545:2, 558:7, 567:13, 567:15  <b>accumulating</b> [5] - 557:13, 557:22, 567:7, 567:17, 567:19  <b>accumulation</b> [3] - 530:10, 542:7, 557:16  <b>accuracy</b> [3] - 505:12, 511:19, 512:11  <b>accurate</b> [8] - 355:9, 408:23, 436:1, 438:16, 440:24, 456:25, 500:13, 634:9  <b>achieve</b> [1] - 547:4  <b>acknowledge</b> [1] - 593:24  <b>acoustic</b> [2] - 504:10, 591:4  <b>acoustical</b> [1] - 494:2  <b>Acoustical</b> [1] - 480:2  <b>acoustician</b> [7] - 382:1, 477:13, 477:14, 477:19, 477:21, 494:15, 501:20  <b>acoustician's</b> [1] - 387:12  <b>acousticians</b> [5] - 483:18, 491:2, 491:8, 491:9, 491:11  <b>Acoustics</b> [1] - 342:10  <b>acoustics</b> [2] -</p>	<p>477:23, 579:12  <b>acquire</b> [1] - 450:23  <b>acquired</b> [1] - 615:2  <b>acre</b> [2] - 448:16, 615:2  <b>acreage</b> [2] - 448:12, 576:3  <b>acreages</b> [1] - 437:5  <b>acres</b> [14] - 393:13, 409:24, 414:9, 414:23, 414:24, 436:18, 437:7, 456:21, 508:23, 575:22, 597:23, 612:16, 612:18, 612:20  <b>Act</b> [2] - 440:22, 471:19  <b>act</b> [1] - 571:13  <b>action</b> [3] - 454:20, 455:20, 464:23  <b>active</b> [3] - 405:20, 471:3, 597:10  <b>actively</b> [1] - 404:15  <b>activities</b> [2] - 587:23, 635:12  <b>activity</b> [3] - 447:12, 453:9, 470:15  <b>actual</b> [9] - 465:19, 465:23, 466:23, 483:14, 500:1, 500:11, 539:15, 540:15, 592:23  <b>Adam</b> [2] - 332:12, 351:2  <b>adamantly</b> [1] - 628:15  <b>adapt</b> [1] - 384:4  <b>adaptive</b> [1] - 465:17  <b>add</b> [9] - 389:23, 396:2, 405:8, 462:10, 501:8, 554:3, 598:3, 602:10, 642:11  <b>ADD</b> [1] - 377:24  <b>added</b> [3] - 501:12, 595:2, 632:16  <b>adding</b> [1] - 563:8  <b>addition</b> [6] - 462:12, 501:9, 501:13, 518:12, 525:2, 550:25  <b>Additional</b> [2] - 347:5, 347:5  <b>additional</b> [7] - 425:23, 465:25, 541:22, 542:5, 584:18, 608:17, 633:13  <b>additionally</b> [2] -</p>	<p>451:24, 474:12  <b>additions</b> [1] - 476:2  <b>address</b> [8] - 386:1, 440:2, 442:21, 525:16, 590:2, 596:6, 611:5, 634:20  <b>addressed</b> [7] - 395:9, 412:16, 425:5, 436:24, 439:17, 455:2, 632:12  <b>addresses</b> [2] - 527:13, 527:15  <b>Add'l</b> [1] - 340:12  <b>ADHD</b> [3] - 377:24, 606:17, 606:23  <b>adherence</b> [1] - 524:13  <b>adhering</b> [1] - 385:3  <b>adjacent</b> [1] - 465:9  <b>adjusted</b> [1] - 485:20  <b>adjustments</b> [1] - 505:10  <b>Administration</b> [1] - 343:8  <b>administrator</b> [2] - 631:23, 632:2  <b>admission</b> [4] - 474:22, 527:23, 532:7, 618:3  <b>admit</b> [1] - 475:15  <b>admitted</b> [7] - 475:4, 479:6, 528:10, 532:19, 533:4, 595:4, 613:22  <b>adopted</b> [2] - 498:9, 626:21  <b>adults</b> [3] - 377:24, 378:6, 383:5  <b>advanced</b> [2] - 564:5, 572:3  <b>advantage</b> [3] - 453:16, 537:5, 625:5  <b>adverse</b> [9] - 354:21, 355:12, 355:19, 355:23, 355:24, 356:25, 379:23, 453:20, 564:12  <b>advertise</b> [1] - 434:13  <b>advertised</b> [2] - 626:15, 629:21  <b>advisor</b> [1] - 572:2  <b>advocate</b> [1] - 625:12  <b>advocated</b> [1] - 590:25  <b>aerial</b> [2] - 470:3, 470:17  <b>aerodynamic</b> [6] - 489:22, 539:11, 541:4, 567:8, 569:13  <b>affect</b> [13] - 383:14,</p>
--	---	---	--	--



<p>383:15, 383:19, 383:25, 385:7, 400:18, 404:20, 442:2, 442:17, 488:24, 537:17, 630:13, 633:3</p> <p><b>affected</b> [11] - 377:25, 378:3, 378:10, 378:12, 428:16, 428:20, 448:12, 448:22, 587:13, 623:5, 623:8</p> <p><b>affects</b> [3] - 384:25, 488:23, 621:10</p> <p><b>Affidavit</b> [2] - 348:15, 590:14</p> <p><b>afternoon</b> [2] - 476:19, 561:13</p> <p><b>afterwards</b> [1] - 641:16</p> <p><b>age</b> [2] - 445:21, 608:1</p> <p><b>Agency</b> [3] - 340:19, 341:23, 342:13</p> <p><b>agenda</b> [2] - 634:15, 634:17</p> <p><b>agents</b> [2] - 434:18, 437:4</p> <p><b>ago</b> [6] - 353:8, 402:8, 411:21, 421:25, 449:18, 549:5</p> <p><b>agree</b> [35] - 359:14, 359:21, 366:4, 367:5, 369:23, 370:13, 372:3, 399:18, 413:4, 418:22, 421:3, 428:7, 428:9, 436:17, 453:20, 455:16, 461:10, 465:6, 475:9, 475:11, 488:3, 493:11, 496:7, 502:4, 504:7, 518:19, 518:23, 532:24, 537:14, 560:21, 574:9, 590:21, 590:22, 620:24, 627:3</p> <p><b>agreed</b> [6] - 432:14, 435:24, 524:14, 547:11, 589:24, 613:11</p> <p><b>agreement</b> [19] - 409:7, 410:23, 411:3, 411:11, 412:1, 412:4, 412:8, 412:13, 414:8, 440:12, 555:11, 573:5, 594:25, 626:1, 630:16,</p>	<p>630:19, 631:2, 631:3, 631:13</p> <p><b>Agreement</b> [1] - 348:13</p> <p><b>agreements</b> [2] - 434:10, 434:14</p> <p><b>agrees</b> [1] - 464:15</p> <p><b>Agrimonti</b> [23] - 332:15, 333:11, 333:13, 333:21, 334:4, 334:11, 335:15, 335:17, 336:9, 336:17, 337:21, 338:4, 338:13, 338:17, 339:11, 351:23, 359:18, 429:16, 529:3, 532:19, 601:15, 603:1, 626:2</p> <p><b>agrimonti</b> [1] - 338:21</p> <p><b>AGRIMONTI</b> [63] - 364:20, 366:1, 379:15, 388:5, 406:15, 521:22, 522:4, 522:18, 525:24, 527:22, 527:25, 528:6, 528:15, 532:8, 533:6, 537:25, 538:16, 543:6, 549:13, 549:17, 550:3, 554:12, 554:18, 565:13, 565:17, 565:23, 566:6, 566:12, 569:4, 569:6, 569:18, 570:10, 572:21, 574:5, 579:10, 582:17, 582:21, 582:25, 594:22, 601:9, 601:20, 602:19, 603:3, 603:7, 608:14, 608:21, 609:1, 613:11, 617:12, 618:6, 620:9, 620:14, 620:19, 624:2, 625:20, 626:19, 628:23, 629:2, 629:10, 631:7, 633:22, 633:24, 636:11</p> <p><b>Agrimonti's</b> [3] - 518:12, 553:20, 582:14</p> <p><b>ahead</b> [10] - 364:22, 366:21, 472:9, 473:16, 497:10, 579:18, 594:20,</p>	<p>626:24, 632:14, 636:9</p> <p><b>aid</b> [10] - 385:3, 385:11, 385:14, 385:21, 596:13, 605:16, 607:2, 609:20, 610:21, 611:17</p> <p><b>aids</b> [1] - 602:13</p> <p><b>air</b> [1] - 490:1</p> <p><b>airplane</b> [1] - 505:6</p> <p><b>Akira</b> [1] - 341:21</p> <p><b>al</b> [1] - 346:17</p> <p><b>Al</b> [2] - 342:19, 342:23</p> <p><b>alarmed</b> [2] - 537:12</p> <p><b>alarming</b> [1] - 630:22</p> <p><b>alcohol</b> [4] - 373:5, 373:8, 373:14, 373:15</p> <p><b>alcoholism</b> [1] - 373:2</p> <p><b>Alex</b> [1] - 380:5</p> <p><b>Alice</b> [1] - 580:1</p> <p><b>alleviated</b> [1] - 427:1</p> <p><b>allow</b> [7] - 489:1, 537:18, 539:4, 565:25, 582:23, 626:24, 627:18</p> <p><b>allowed</b> [5] - 391:9, 515:18, 582:22, 627:14, 634:20</p> <p><b>allowing</b> [1] - 546:22</p> <p><b>allows</b> [2] - 458:18, 545:9</p> <p><b>alma</b> [1] - 572:3</p> <p><b>ALMOND</b> [62] - 351:14, 364:21, 366:6, 370:15, 379:19, 380:11, 388:6, 388:9, 390:16, 390:21, 391:17, 407:5, 416:18, 425:14, 427:5, 433:1, 433:5, 437:9, 469:3, 474:24, 475:4, 475:11, 477:2, 479:8, 479:12, 479:17, 497:9, 503:24, 504:13, 518:12, 518:17, 521:3, 528:8, 529:2, 532:6, 532:12, 532:14, 533:8, 538:2, 549:15, 550:6, 569:20, 582:20, 583:2, 589:4, 594:15, 601:4, 602:22, 603:6, 608:20, 608:24, 609:2,</p>	<p>609:12, 613:5, 613:8, 617:21, 617:24, 618:12, 636:15, 636:17, 637:10, 637:12</p> <p><b>almond</b> [3] - 333:24, 336:4, 338:4</p> <p><b>Almond</b> [52] - 332:16, 333:4, 333:7, 333:11, 333:14, 333:17, 333:21, 334:12, 334:14, 334:17, 334:20, 334:23, 335:4, 335:10, 335:13, 335:15, 335:21, 336:10, 336:13, 336:16, 336:20, 337:5, 337:7, 337:12, 337:14, 337:17, 337:20, 338:8, 338:13, 338:17, 338:21, 339:4, 339:7, 339:11, 351:11, 398:22, 407:3, 432:25, 469:1, 476:23, 479:10, 522:11, 528:24, 532:25, 554:20, 555:20, 569:19, 582:19, 582:21, 602:20, 608:14, 636:13</p> <p><b>almost</b> [3] - 579:4, 598:16, 622:12</p> <p><b>alone</b> [1] - 424:14</p> <p><b>alter</b> [1] - 622:20</p> <p><b>Amanda</b> [1] - 332:23</p> <p><b>ambient</b> [17] - 481:15, 481:18, 482:3, 482:5, 494:23, 495:2, 496:25, 497:12, 497:16, 507:20, 508:6, 519:24, 519:25, 520:4, 586:2, 587:4, 587:5</p> <p><b>ambiguous</b> [2] - 451:18, 537:25</p> <p><b>Amended</b> [1] - 349:19</p> <p><b>America</b> [1] - 480:2</p> <p><b>America's</b> [1] - 494:3</p> <p><b>American</b> [1] - 341:3</p> <p><b>amount</b> [6] - 393:20, 428:12, 490:1, 508:18, 558:5, 563:9</p> <p><b>amounts</b> [1] - 536:8</p> <p><b>amplify</b> [1] - 385:12</p> <p><b>amplifying</b> [1] - 385:2</p>	<p><b>Amsterdam</b> [1] - 342:4</p> <p><b>analogous</b> [1] - 386:17</p> <p><b>analysis</b> [12] - 474:8, 478:20, 483:22, 485:6, 485:11, 486:10, 504:1, 511:5, 516:14, 517:21, 533:16, 547:11</p> <p><b>Analysis</b> [5] - 340:5, 340:6, 341:5, 343:16, 343:23</p> <p><b>analyze</b> [3] - 454:19, 478:17, 480:9</p> <p><b>analyzed</b> [3] - 358:5, 363:10, 525:9</p> <p><b>analyzing</b> [2] - 455:23, 516:11</p> <p><b>AND</b> [1] - 332:4</p> <p><b>ANDERSH</b> [1] - 338:12</p> <p><b>Andersh's</b> [1] - 348:8</p> <p><b>ANDERSON</b> [1] - 333:3</p> <p><b>Anderson</b> [3] - 340:3, 340:4, 340:4</p> <p><b>anecdotal</b> [4] - 536:1, 536:3, 538:15, 538:18</p> <p><b>anemometer</b> [3] - 539:21, 543:19, 567:22</p> <p><b>anesthetic</b> [1] - 549:23</p> <p><b>angle</b> [1] - 488:24</p> <p><b>animal</b> [3] - 386:21, 572:8, 641:16</p> <p><b>animals</b> [5] - 386:15, 388:11, 404:6, 404:16, 423:24</p> <p><b>annoyance</b> [7] - 363:23, 364:1, 364:4, 365:3, 365:18, 515:10</p> <p><b>Annoyance</b> [1] - 342:11</p> <p><b>annoying</b> [1] - 401:12</p> <p><b>annual</b> [3] - 483:12, 514:16, 514:22</p> <p><b>ANSES</b> [1] - 340:21</p> <p><b>ANSES")(2017</b> [1] - 340:20</p> <p><b>ANSI</b> [16] - 478:22, 479:3, 479:7, 479:23, 480:1, 480:22, 481:2, 481:25, 482:2, 482:7, 482:15,</p>
--	---	---	---	---

<p>482:21, 482:25, 483:2, 483:6, 483:18</p> <p><b>answer</b> [30] - 364:21, 364:23, 366:5, 366:8, 375:19, 382:6, 389:20, 417:10, 420:8, 428:8, 428:11, 434:7, 437:1, 437:2, 439:19, 439:24, 449:3, 466:4, 466:5, 472:16, 482:23, 497:10, 503:18, 538:3, 551:22, 552:22, 555:13, 567:3, 568:11, 640:23</p> <p><b>answered</b> [12] - 364:20, 366:1, 366:7, 366:10, 366:13, 366:20, 375:16, 412:11, 439:21, 457:4, 538:2, 567:2</p> <p><b>answering</b> [2] - 456:17, 561:15</p> <p><b>answers</b> [4] - 432:20, 476:6, 528:13, 632:11</p> <p><b>anti</b> [1] - 568:15</p> <p><b>anti-ice</b> [1] - 568:15</p> <p><b>anticipate</b> [3] - 442:14, 444:10, 521:18</p> <p><b>anticipated</b> [3] - 452:1, 452:2, 546:17</p> <p><b>anxiety</b> [1] - 371:21</p> <p><b>anyway</b> [1] - 592:19</p> <p><b>apart</b> [2] - 413:7, 447:9</p> <p><b>apartment</b> [1] - 446:17</p> <p><b>apologies</b> [3] - 473:10, 528:1, 566:9</p> <p><b>apologize</b> [6] - 440:17, 467:6, 505:17, 609:18, 625:20, 635:18</p> <p><b>App</b> [1] - 346:21</p> <p><b>appear</b> [3] - 437:18, 533:23, 583:15</p> <p><b>appeared</b> [1] - 492:8</p> <p><b>appearing</b> [6] - 332:15, 332:17, 332:19, 332:20, 332:22, 332:23</p> <p><b>Appendix</b> [3] - 585:13, 604:6, 604:9</p> <p><b>appendix</b> [1] - 496:10</p> <p><b>applicable</b> [3] - 369:6, 441:3, 471:24</p>	<p><b>Applicant</b> [23] - 346:11, 438:5, 440:20, 464:14, 464:15, 471:14, 471:17, 471:19, 471:21, 471:23, 472:15, 582:12, 590:17, 602:18, 618:7, 628:17, 632:12, 632:23, 633:21, 635:7, 635:9, 636:2, 636:6</p> <p><b>APPLICANTS</b> [11] - 333:2, 334:2, 335:2, 339:9, 340:2, 341:2, 342:2, 343:2, 344:2, 345:2, 346:2</p> <p><b>Applicant's</b> [21] - 345:3, 345:4, 345:5, 345:6, 345:9, 345:14, 345:17, 345:20, 345:21, 345:23, 345:24, 346:8, 346:9, 346:12, 348:16, 348:17, 348:18, 348:19, 349:13, 349:18, 476:21</p> <p><b>Application</b> [13] - 340:3, 430:16, 431:8, 470:8, 473:13, 585:11, 585:12, 590:18, 604:4, 621:5, 623:23, 628:18, 631:19</p> <p><b>APPLICATION</b> [1] - 332:2</p> <p><b>applications</b> [1] - 493:20</p> <p><b>applied</b> [5] - 480:14, 480:25, 494:12, 501:1, 588:17</p> <p><b>applies</b> [3] - 352:19, 531:20, 531:24</p> <p><b>apply</b> [10] - 472:1, 483:7, 498:11, 499:19, 544:11, 544:12, 555:7, 588:12, 618:8, 623:22</p> <p><b>appointed</b> [1] - 643:8</p> <p><b>appointment</b> [1] - 571:20</p> <p><b>Appraisal</b> [1] - 340:21</p> <p><b>appreciate</b> [13] - 407:16, 419:2, 440:3, 446:8, 451:15, 456:18, 457:7, 466:5, 467:7,</p>	<p>501:14, 561:17, 564:21, 612:2</p> <p><b>approach</b> [4] - 447:24, 471:7, 501:22, 534:2</p> <p><b>approached</b> [1] - 354:9</p> <p><b>appropriate</b> [6] - 352:17, 370:8, 390:10, 439:18, 483:2, 504:11</p> <p><b>appropriately</b> [2] - 352:16, 493:20</p> <p><b>approval</b> [2] - 454:20, 624:14</p> <p><b>approvals</b> [2] - 412:23, 412:24</p> <p><b>approved</b> [6] - 619:12, 622:17, 628:21, 632:15, 632:21, 632:23</p> <p><b>approximate</b> [2] - 554:17, 559:1</p> <p><b>April</b> [6] - 346:15, 431:20, 460:13, 470:13, 576:1</p> <p><b>Aransas</b> [1] - 459:14</p> <p><b>ARANSAS</b> [1] - 459:15</p> <p><b>archaeological</b> [1] - 441:9</p> <p><b>architectural</b> [1] - 442:4</p> <p><b>Area</b> [1] - 348:11</p> <p><b>area</b> [65] - 393:9, 393:23, 394:2, 395:16, 397:10, 401:19, 404:3, 405:19, 409:24, 415:11, 415:24, 419:15, 419:20, 424:5, 432:9, 437:4, 437:18, 441:18, 449:24, 450:1, 451:9, 452:4, 456:21, 462:3, 464:8, 464:10, 464:12, 465:7, 467:22, 482:15, 486:4, 486:12, 486:19, 488:10, 492:21, 494:23, 495:5, 495:13, 497:2, 497:12, 499:2, 507:7, 507:21, 507:24, 508:1, 508:20, 508:24, 509:13, 519:22, 525:10, 526:20, 558:22, 559:1, 559:12, 559:18, 559:20,</p>	<p>559:22, 560:1, 576:6, 578:25, 579:4, 580:16, 609:4, 612:16, 615:18</p> <p><b>areas</b> [12] - 436:9, 441:17, 444:9, 447:25, 448:4, 450:14, 450:17, 456:1, 482:15, 483:20, 498:17, 563:21</p> <p><b>argue</b> [2] - 413:10, 573:3</p> <p><b>argumentative</b> [2] - 497:7, 538:17</p> <p><b>arise</b> [1] - 434:8</p> <p><b>Arizona</b> [1] - 449:12</p> <p><b>arrive</b> [3] - 460:10, 460:14, 460:19</p> <p><b>arriving</b> [1] - 626:16</p> <p><b>art</b> [1] - 598:13</p> <p><b>ASA</b> [1] - 499:6</p> <p><b>aside</b> [9] - 365:22, 411:9, 450:14, 450:23, 485:9, 486:23, 495:22, 529:18, 537:20</p> <p><b>asleep</b> [1] - 575:7</p> <p><b>aspect</b> [4] - 422:11, 624:17, 639:5, 641:13</p> <p><b>aspects</b> [1] - 572:19</p> <p><b>assessing</b> [1] - 465:19</p> <p><b>Assessment</b> [8] - 340:22, 344:5, 344:6, 344:7, 344:9, 344:10, 344:11, 471:23</p> <p><b>assessment</b> [2] - 447:24, 551:12</p> <p><b>assessments</b> [1] - 455:9</p> <p><b>asset</b> [1] - 623:14</p> <p><b>assets</b> [3] - 438:25, 439:9, 440:13</p> <p><b>assignment</b> [1] - 524:10</p> <p><b>assist</b> [4] - 412:21, 413:5, 413:13, 429:16</p> <p><b>assisted</b> [1] - 385:24</p> <p><b>assisting</b> [1] - 625:15</p> <p><b>associated</b> [3] - 422:6, 489:21, 534:24</p> <p><b>Association</b> [1] - 348:24</p> <p><b>association</b> [1] - 417:17</p>	<p><b>assume</b> [12] - 355:15, 6 404:18, 408:17, 410:25, 478:22, 487:2, 491:21, 515:15, 530:24, 542:24, 545:8, 562:9</p> <p><b>assumed</b> [4] - 394:18, 414:10, 414:15, 414:20</p> <p><b>assumes</b> [2] - 405:24, 513:9</p> <p><b>assuming</b> [3] - 376:16, 399:7, 422:18</p> <p><b>assumption</b> [1] - 450:7</p> <p><b>assumptions</b> [2] - 500:11, 500:25</p> <p><b>assured</b> [2] - 399:24, 405:10</p> <p><b>asynchronized</b> [1] - 492:14</p> <p><b>Atkinson</b> [1] - 344:18</p> <p><b>Atkinson-Palombo</b> [1] - 344:18</p> <p><b>atmospheric</b> [1] - 487:20</p> <p><b>attach</b> [2] - 361:19, 627:6</p> <p><b>attached</b> [9] - 367:13, 376:17, 477:6, 526:2, 596:12, 609:20, 609:22, 611:17, 643:11</p> <p><b>attaching</b> [1] - 361:21</p> <p><b>Attachment</b> [1] - 613:10</p> <p><b>attachment</b> [1] - 393:3</p> <p><b>attempt</b> [1] - 438:22</p> <p><b>attempting</b> [1] - 578:12</p> <p><b>attended</b> [3] - 410:11, 421:23, 422:18</p> <p><b>attending</b> [1] - 612:1</p> <p><b>attention</b> [5] - 376:19, 406:18, 471:15, 628:24, 630:16</p> <p><b>attenuated</b> [1] - 506:10</p> <p><b>attitude</b> [2] - 364:3, 365:5</p> <p><b>attorney</b> [9] - 565:12, 582:15, 626:7, 626:9, 628:20, 630:17, 631:1, 631:5</p> <p><b>attorney's</b> [1] - 522:12</p> <p><b>attorneys</b> [1] - 354:20</p> <p><b>attribute</b> [1] - 355:8</p> <p><b>attributing</b> [1] - 379:12</p>
--	--	--	---	---

<p><b>audible</b> [5] - 508:8, 508:9, 518:24, 576:17, 623:6</p> <p><b>audience</b> [1] - 593:14</p> <p><b>audio</b> [1] - 406:17</p> <p><b>auditor</b> [3] - 630:1, 631:4, 631:14</p> <p><b>Aug</b> [1] - 343:23</p> <p><b>August</b> [2] - 430:21, 447:6</p> <p><b>Australian</b> [4] - 340:8, 340:11, 340:14, 340:17</p> <p><b>author's</b> [1] - 459:11</p> <p><b>automatic</b> [1] - 564:18</p> <p><b>automatically</b> [5] - 498:21, 542:3, 556:18, 556:20, 556:25</p> <p><b>available</b> [6] - 351:20, 432:23, 434:7, 434:18, 629:22, 631:13</p> <p><b>Ave</b> [1] - 347:23</p> <p><b>avenue</b> [3] - 392:20, 596:6, 614:3</p> <p><b>Avenue</b> [1] - 350:3</p> <p><b>avenues</b> [1] - 415:9</p> <p><b>Avera</b> [1] - 573:24</p> <p><b>average</b> [12] - 480:14, 481:4, 482:10, 482:11, 482:12, 482:20, 493:18, 500:5, 514:22, 515:5, 515:23, 519:21</p> <p><b>averages</b> [2] - 514:25, 515:7</p> <p><b>avian</b> [3] - 459:12, 464:16, 465:21</p> <p><b>Aviation</b> [1] - 343:8</p> <p><b>avoid</b> [6] - 397:25, 444:8, 451:17, 529:25, 574:13, 626:5</p> <p><b>avoidable</b> [1] - 441:19</p> <p><b>avoidance</b> [1] - 441:3</p> <p><b>Avon</b> [23] - 392:20, 394:12, 396:11, 396:21, 397:13, 398:12, 402:19, 402:20, 403:25, 415:18, 416:3, 417:5, 417:8, 420:24, 421:11, 424:8, 424:10, 424:12, 427:11, 591:12, 591:20, 610:13, 641:2</p> <p><b>awaiting</b> [1] - 444:4</p>	<p><b>aware</b> [33] - 359:1, 364:6, 364:17, 365:22, 366:16, 366:23, 379:9, 380:4, 386:8, 390:5, 391:3, 391:10, 395:15, 395:17, 399:21, 401:18, 401:20, 402:5, 402:25, 418:16, 440:5, 441:16, 442:9, 444:2, 485:13, 490:20, 492:1, 492:2, 529:8, 559:18, 573:6, 607:19</p> <p><b>awful</b> [1] - 633:13</p> <p><b>awkward</b> [1] - 391:1</p> <p><b>axis</b> [5] - 381:11, 381:12, 381:14, 381:15, 533:17</p> <p><b>aye</b> [2] - 627:21, 627:24</p>	<p>355:1, 357:10, 358:19, 369:6, 379:16, 384:18, 388:6, 408:23, 409:12, 435:4, 437:2, 443:16, 447:12, 447:13, 469:1, 487:13, 487:18, 503:24, 504:9, 518:10, 538:15, 538:20, 611:12, 627:14</p> <p><b>basic</b> [1] - 574:20</p> <p><b>basis</b> [6] - 475:5, 477:15, 483:12, 520:21, 522:12, 576:12</p> <p><b>bat</b> [2] - 437:14, 437:17</p> <p><b>bats</b> [1] - 453:24</p> <p><b>batteries</b> [1] - 546:10</p> <p><b>bearable</b> [1] - 582:2</p> <p><b>bearing</b> [1] - 544:18</p> <p><b>Beason</b> [1] - 609:8</p> <p><b>beauty</b> [1] - 396:4</p> <p><b>became</b> [4] - 365:2, 381:18, 615:12, 626:11</p> <p><b>become</b> [8] - 369:16, 380:23, 381:10, 401:12, 402:25, 422:23, 450:25, 544:21</p> <p><b>becomes</b> [1] - 545:7</p> <p><b>bed</b> [2] - 551:1, 573:22</p> <p><b>bedroom</b> [1] - 491:4</p> <p><b>beef</b> [2] - 572:16, 575:22</p> <p><b>beer</b> [1] - 373:20</p> <p><b>Beethoven</b> [48] - 348:14, 397:24, 402:17, 405:15, 405:18, 415:12, 415:20, 415:23, 416:4, 416:16, 426:3, 463:18, 465:8, 507:16, 508:4, 508:8, 508:9, 576:16, 577:10, 577:24, 578:21, 579:1, 579:5, 581:3, 584:7, 584:24, 585:4, 592:6, 593:18, 597:22, 614:5, 614:12, 614:13, 614:16, 618:9, 618:14, 620:11, 620:16, 620:20, 620:25, 621:1, 621:15,</p>	<p>622:10, 624:14, 635:1, 635:5, 636:18, 640:6</p> <p><b>BEFORE</b> [1] - 332:9</p> <p><b>begin</b> [6] - 375:25, 476:23, 571:4, 571:10, 602:17, 642:9</p> <p><b>beginning</b> [7] - 366:2, 438:11, 454:22, 555:14, 555:17, 596:7, 633:20</p> <p><b>begins</b> [1] - 582:22</p> <p><b>behalf</b> [4] - 332:15, 332:17, 332:23, 618:15</p> <p><b>behavior</b> [2] - 457:25, 460:25</p> <p><b>behavioral</b> [1] - 378:15</p> <p><b>behind</b> [7] - 414:20, 462:13, 542:16, 577:22, 578:10, 600:7, 605:19</p> <p><b>beholder</b> [1] - 396:5</p> <p><b>beliefs</b> [1] - 625:22</p> <p><b>below</b> [4] - 360:20, 380:25, 497:25, 552:3</p> <p><b>belt</b> [1] - 584:3</p> <p><b>belts</b> [2] - 580:18, 581:9</p> <p><b>Ben</b> [1] - 344:19</p> <p><b>benefit</b> [1] - 367:25</p> <p><b>benefiting</b> [1] - 398:15</p> <p><b>Benjamin</b> [1] - 407:8</p> <p><b>Berg</b> [1] - 342:3</p> <p><b>Berkeley</b> [2] - 341:6, 344:21</p> <p><b>best</b> [5] - 360:25, 387:13, 389:20, 391:8, 444:8</p> <p><b>bet</b> [1] - 366:14</p> <p><b>better</b> [16] - 365:8, 374:12, 415:10, 415:14, 422:13, 425:18, 448:8, 458:9, 459:25, 481:25, 515:10, 548:12, 554:9, 581:20, 583:3, 609:21</p> <p><b>between</b> [21] - 382:8, 382:11, 387:2, 387:16, 389:21, 452:23, 454:3, 465:22, 482:9, 498:18, 513:12, 513:13, 518:2, 524:16, 581:8,</p>	<p>581:10, 585:6, 586:20, 619:20, 634:16, 638:10</p> <p><b>Between</b> [2] - 342:20, 344:19</p> <p><b>beyond</b> [10] - 389:24, 390:7, 395:11, 395:13, 399:6, 410:7, 426:9, 426:18, 506:1, 506:5</p> <p><b>bifocals</b> [1] - 583:8</p> <p><b>Big</b> [1] - 579:2</p> <p><b>big</b> [11] - 398:5, 420:16, 422:8, 423:3, 426:4, 535:7, 535:11, 559:16, 598:13, 625:19, 634:14</p> <p><b>bigger</b> [4] - 394:7, 415:14, 510:18, 510:25</p> <p><b>biggest</b> [6] - 490:21, 581:24, 584:9, 607:1, 607:7, 623:14</p> <p><b>binder</b> [7] - 356:14, 367:9, 410:18, 410:19, 429:13, 436:21, 525:19</p> <p><b>binge</b> [1] - 607:12</p> <p><b>binoculars</b> [1] - 457:17</p> <p><b>Bio</b> [1] - 347:8</p> <p><b>biologist</b> [2] - 430:8, 432:12</p> <p><b>biology</b> [3] - 430:3, 446:6</p> <p><b>bird</b> [2] - 445:16, 457:12</p> <p><b>birds</b> [4] - 445:16, 453:24, 496:14, 496:15</p> <p><b>bit</b> [30] - 354:18, 382:17, 392:18, 396:6, 396:7, 401:4, 408:9, 416:15, 429:17, 429:24, 448:7, 448:8, 454:17, 457:14, 473:9, 481:16, 485:4, 486:25, 488:21, 496:6, 499:11, 506:9, 556:22, 564:4, 567:9, 578:16, 592:17, 613:24, 626:9</p> <p><b>bitten</b> [1] - 575:17</p> <p><b>black</b> [2] - 403:19, 552:20</p> <p><b>black-and-white</b> [1] -</p>
---	--	--	--	---



403:19 <b>blade</b> [55] - 488:24, 489:1, 489:4, 489:6, 489:25, 490:2, 490:3, 490:4, 526:22, 530:5, 530:6, 530:20, 533:25, 534:11, 534:16, 535:23, 536:2, 536:4, 539:12, 539:13, 541:4, 542:9, 544:23, 547:17, 551:8, 551:19, 557:10, 557:14, 557:22, 558:17, 559:7, 559:8, 559:9, 559:13, 559:15, 559:19, 559:20, 560:1, 560:3, 560:7, 560:8, 560:13, 560:14, 560:16, 560:25, 562:21, 563:4, 567:8, 567:18, 567:19, 568:4, 568:21, 569:10, 569:14 <b>Blade</b> [1] - 347:12 <b>blade's</b> [2] - 530:20, 542:16 <b>blades</b> [30] - 487:7, 524:19, 524:22, 524:23, 527:17, 530:4, 530:18, 540:24, 542:4, 542:7, 542:10, 542:17, 542:19, 543:2, 543:22, 545:2, 546:2, 547:5, 552:23, 557:8, 558:11, 558:19, 559:16, 559:23, 560:24, 563:12, 567:6, 567:22, 569:16, 577:22 <b>Blank</b> [1] - 348:13 <b>blast</b> [1] - 376:4 <b>blends</b> [1] - 492:14 <b>blessed</b> [1] - 606:17 <b>blood</b> [2] - 371:23, 373:15 <b>blow</b> [1] - 578:15 <b>blowing</b> [5] - 513:10, 513:14, 513:20, 520:24, 539:22 <b>blown</b> [1] - 407:14 <b>blown-up</b> [1] - 407:14 <b>blowup</b> [1] - 608:19 <b>blue</b> [1] - 510:10 <b>blunt</b> [1] - 468:17	<b>blurring</b> [1] - 625:22 <b>BMPs</b> [1] - 456:9 <b>board</b> [15] - 418:7, 587:23, 628:13, 628:15, 628:21, 628:22, 628:25, 629:9, 630:2, 630:8, 631:24, 632:1, 634:5, 634:12, 634:13 <b>Bon</b> [7] - 348:9, 590:11, 626:21, 628:11, 635:16, 635:21, 638:10 <b>BON</b> [1] - 332:4 <b>bone</b> [5] - 385:3, 596:12, 609:20, 609:22, 611:16 <b>book</b> [2] - 531:8, 583:6 <b>boom</b> [1] - 416:1 <b>born</b> [2] - 404:9, 424:9 <b>borne</b> [1] - 506:7 <b>bother</b> [3] - 451:18, 599:19, 599:20 <b>bottle</b> [1] - 607:11 <b>bottom</b> [4] - 358:11, 358:17, 412:19, 531:11 <b>bought</b> [4] - 424:14, 614:25, 616:4, 616:5 <b>bounce</b> [1] - 490:6 <b>bounces</b> [2] - 490:4, 581:7 <b>bouncing</b> [1] - 581:5 <b>bound</b> [4] - 373:22, 413:4, 413:8, 413:12 <b>boundary</b> [4] - 447:23, 447:25, 465:9, 614:6 <b>bounds</b> [1] - 621:18 <b>Bowdler</b> [1] - 380:17 <b>box</b> [1] - 544:19 <b>boxes</b> [1] - 435:14 <b>Bradfield</b> [2] - 344:4, 344:8 <b>brag</b> [3] - 561:18, 561:21, 562:4 <b>brain</b> [2] - 384:3, 390:2 <b>brains</b> [1] - 541:10 <b>brake</b> [1] - 527:20 <b>Brandt</b> [15] - 392:10, 392:11, 392:19, 398:19, 407:1, 407:6, 407:8, 407:10, 408:18, 408:20, 409:2, 409:20, 410:2, 425:3, 425:15 <b>BRANDT</b> [1] - 334:18	<b>Brandts</b> [2] - 409:8, 409:9 <b>Braunvieh</b> [1] - 572:16 <b>break</b> [9] - 446:21, 472:20, 476:10, 541:4, 567:8, 569:13, 576:5, 588:25, 640:5 <b>breaking</b> [3] - 639:9, 639:12, 639:22 <b>breaks</b> [2] - 539:10, 552:14 <b>breathe</b> [1] - 575:17 <b>bred</b> [1] - 572:11 <b>Brian</b> [2] - 344:3, 630:7 <b>BRIDGET</b> [1] - 335:3 <b>Bridget</b> [4] - 429:7, 429:8, 429:20, 469:10 <b>brief</b> [2] - 474:15, 523:12 <b>briefly</b> [11] - 351:24, 375:2, 384:20, 471:16, 498:14, 501:23, 502:18, 503:22, 569:4, 589:19, 610:4 <b>bring</b> [12] - 376:19, 401:15, 406:17, 415:23, 418:24, 440:1, 561:8, 568:11, 591:24, 594:11, 611:22, 629:22 <b>bringing</b> [1] - 373:11 <b>brings</b> [2] - 445:8, 621:24 <b>broad</b> [1] - 482:19 <b>broader</b> [1] - 364:4 <b>broadly</b> [1] - 456:5 <b>Brochure</b> [1] - 348:13 <b>broken</b> [1] - 639:17 <b>Brookings</b> [1] - 535:10 <b>brother</b> [5] - 393:17, 393:24, 395:24, 396:1, 407:6 <b>brought</b> [3] - 418:15, 490:23, 516:21 <b>brown</b> [1] - 603:22 <b>Brown</b> [1] - 572:10 <b>bruxing</b> [1] - 575:15 <b>bucket</b> [1] - 396:10 <b>Buffalo</b> [1] - 459:16 <b>build</b> [4] - 397:7, 524:13, 524:21, 625:8 <b>Building</b> [1] - 350:3 <b>building</b> [11] - 416:1, 417:25, 470:14, 549:10, 549:11, 549:18, 557:10, 598:17, 610:15, 634:18 <b>buildings</b> [8] - 402:13, 402:14, 526:17, 535:16, 580:13, 580:16, 581:8, 620:1 <b>builds</b> [1] - 563:12 <b>buildup</b> [3] - 547:15, 550:15, 569:7 <b>built</b> [8] - 401:19, 415:21, 420:2, 511:25, 513:9, 551:25, 592:18, 633:4 <b>bulletin</b> [1] - 587:25 <b>bunch</b> [1] - 533:20 <b>Burns</b> [3] - 343:20, 473:5, 485:18 <b>business</b> [6] - 477:23, 522:25, 572:15, 588:5, 588:7, 630:6 <b>businesses</b> [1] - 394:13 <b>busy</b> [1] - 423:23 <b>butcher</b> [1] - 477:12 <b>buttons</b> [1] - 527:20 <b>BY</b> [46] - 332:3, 351:14, 370:18, 371:2, 371:14, 379:19, 380:14, 383:2, 384:23, 388:9, 392:15, 399:2, 407:5, 416:21, 417:13, 418:5, 425:2, 425:14, 427:8, 429:12, 433:5, 437:12, 438:2, 468:9, 469:9, 469:23, 471:10, 473:2, 477:2, 504:24, 509:9, 514:14, 518:17, 522:18, 529:2, 550:12, 553:19, 569:6, 583:2, 589:12, 589:21, 602:22, 609:16, 610:6, 633:24, 636:17	555:3, 555:5, 559:22, 559:24 <b>calculated</b> [2] - 556:8, 568:6 <b>calculates</b> [1] - 498:22 <b>calculation</b> [1] - 500:1 <b>Calculations</b> [1] - 348:10 <b>calculator</b> [1] - 554:9 <b>California</b> [5] - 614:20, 615:5, 615:8, 615:25, 616:2 <b>Canada</b> [10] - 344:18, 361:15, 364:9, 365:11, 365:21, 365:23, 366:16, 459:17, 460:10, 460:14 <b>Canadian</b> [1] - 363:3 <b>cancer</b> [4] - 372:13, 596:9, 606:17, 606:24 <b>cannot</b> [10] - 389:4, 434:17, 436:16, 439:11, 452:10, 461:21, 489:8, 505:13, 558:3, 593:1 <b>Canty</b> [12] - 343:17, 343:18, 343:20, 429:7, 429:8, 429:18, 429:20, 432:23, 433:6, 445:6, 471:11, 472:5 <b>CANTY</b> [1] - 335:3 <b>cap</b> [2] - 415:14, 417:15 <b>capabilities</b> [1] - 544:21 <b>capability</b> [1] - 516:22 <b>capable</b> [1] - 352:13 <b>capacities</b> [1] - 545:25 <b>capacity</b> [4] - 392:2, 520:12, 543:23, 557:17 <b>Capitol</b> [2] - 350:3 <b>capture</b> [3] - 507:7, 508:15, 595:9 <b>car</b> [1] - 382:13 <b>carbon</b> [1] - 371:23 <b>cardinal</b> [1] - 448:1 <b>care</b> [3] - 352:16, 462:8, 622:3 <b>career</b> [6] - 375:12, 522:24, 547:25, 571:19, 615:6, 615:12 <b>Carol</b> [1] - 344:18 <b>carry</b> [1] - 506:14 <b>cars</b> [1] - 615:10 <b>Case</b> [1] - 346:21
<b>C</b>			
<b>C-weighting</b> [1] - 516:17 <b>Cadna</b> [1] - 512:2 <b>calculate</b> [5] - 517:2,			

<p><b>case</b> [15] - 351:6, 373:10, 373:20, 394:25, 476:21, 487:16, 488:14, 491:15, 500:21, 501:1, 514:23, 523:3, 570:10, 588:19, 642:10</p> <p><b>cases</b> [3] - 355:10, 538:8, 570:13</p> <p><b>catching</b> [2] - 542:17, 543:22</p> <p><b>categories</b> [2] - 371:19, 450:22</p> <p><b>categorize</b> [1] - 452:8</p> <p><b>cattle</b> [6] - 572:10, 572:16, 576:10, 576:13, 588:25, 592:3</p> <p><b>caught</b> [2] - 582:5, 616:11</p> <p><b>causal</b> [1] - 352:12</p> <p><b>Causation</b> [1] - 348:24</p> <p><b>causation</b> [1] - 375:10</p> <p><b>caused</b> [8] - 352:24, 353:1, 355:3, 375:6, 467:6, 489:22, 524:20, 532:17</p> <p><b>causes</b> [2] - 491:16, 542:4</p> <p><b>causing</b> [2] - 352:13, 403:16</p> <p><b>caution</b> [1] - 591:5</p> <p><b>cautions</b> [1] - 505:11</p> <p><b>cautious</b> [1] - 565:12</p> <p><b>cautiously</b> [1] - 565:15</p> <p><b>ceiling</b> [3] - 487:15, 487:22</p> <p><b>celebrate</b> [2] - 598:10</p> <p><b>center</b> [6] - 548:5, 550:19, 550:22, 550:23, 563:2, 584:12</p> <p><b>central</b> [1] - 550:18</p> <p><b>cents</b> [1] - 631:21</p> <p><b>CenturyLink</b> [1] - 549:10</p> <p><b>certain</b> [18] - 369:15, 390:7, 396:24, 413:19, 436:16, 436:20, 472:17, 483:7, 489:25, 502:20, 502:21, 508:22, 518:4, 519:14, 599:17</p> <p><b>certainly</b> [13] - 361:19, 380:7, 383:11, 424:7, 431:13, 448:19, 461:7,</p>	<p>466:7, 467:3, 472:13, 482:25, 537:7, 627:10</p> <p><b>CERTIFICATE</b> [1] - 643:2</p> <p><b>certified</b> [1] - 573:24</p> <p><b>Certified</b> [2] - 643:6, 643:19</p> <p><b>CERTIFY</b> [1] - 643:8</p> <p><b>cetera</b> [11] - 412:23, 413:1, 447:9, 454:4, 456:24, 498:21, 509:16, 516:18, 538:22</p> <p><b>Chair</b> [4] - 374:23, 388:2, 593:4</p> <p><b>chair</b> [1] - 630:2</p> <p><b>CHAIRMAN</b> [1] - 332:10</p> <p><b>Chairman</b> [6] - 376:23, 418:25, 420:11, 445:13, 467:9, 511:13</p> <p><b>CHAIRWOMAN</b> [56] - 332:10, 366:11, 366:19, 376:24, 377:5, 377:9, 377:15, 377:18, 420:12, 420:17, 420:20, 421:4, 421:9, 421:12, 421:15, 421:18, 422:17, 423:5, 423:12, 423:19, 424:1, 424:4, 424:7, 424:17, 424:22, 446:21, 511:14, 511:16, 511:22, 512:6, 512:10, 512:18, 565:11, 565:14, 565:19, 566:2, 566:10, 566:14, 566:18, 566:21, 566:23, 567:4, 568:1, 570:15, 570:19, 593:5, 612:15, 612:21, 612:24, 627:21, 637:25, 638:14, 639:7, 639:14, 639:18, 639:21</p> <p><b>challenges</b> [2] - 378:6, 378:15</p> <p><b>challenging</b> [1] - 593:9</p> <p><b>chamber</b> [1] - 502:3</p> <p><b>Champaign</b> [1] - 572:4</p> <p><b>Champaign-Urbana</b></p>	<p>[1] - 572:4</p> <p><b>chance</b> [8] - 375:18, 556:11, 556:13, 561:20, 562:4, 589:22, 591:8, 610:15</p> <p><b>change</b> [22] - 371:23, 384:25, 395:21, 403:3, 403:9, 403:10, 403:11, 480:20, 482:17, 484:16, 485:3, 485:12, 486:17, 488:24, 489:7, 498:4, 520:5, 520:6, 520:7, 528:6, 588:8</p> <p><b>changed</b> [6] - 405:23, 447:23, 474:10, 484:19, 571:19, 622:8</p> <p><b>changes</b> [7] - 432:18, 474:6, 481:18, 484:24, 564:7, 634:2</p> <p><b>changing</b> [2] - 488:21, 507:13</p> <p><b>chaperone</b> [1] - 445:22</p> <p><b>characteristic</b> [1] - 541:4</p> <p><b>characteristics</b> [2] - 491:2, 539:12</p> <p><b>characterize</b> [5] - 373:8, 387:14, 403:14, 403:16, 434:4</p> <p><b>charged</b> [1] - 356:4</p> <p><b>charges</b> [1] - 546:10</p> <p><b>charismatic</b> [1] - 460:23</p> <p><b>CHARLES</b> [1] - 332:4</p> <p><b>Charles</b> [6] - 348:14, 571:17, 590:12, 630:4, 631:17, 634:1</p> <p><b>chart</b> [2] - 447:4, 585:23</p> <p><b>charts</b> [1] - 376:14</p> <p><b>chat</b> [1] - 445:18</p> <p><b>check</b> [5] - 360:3, 460:13, 464:3, 527:25, 608:22</p> <p><b>checking</b> [2] - 411:22, 418:12</p> <p><b>cheerleaders</b> [1] - 460:24</p> <p><b>CHERI</b> [1] - 643:5</p> <p><b>Cheri</b> [4] - 332:24, 390:16, 643:17, 643:18</p> <p><b>chicken</b> [1] - 446:19</p> <p><b>chief</b> [4] - 476:21,</p>	<p>570:10, 570:13, 642:10</p> <p><b>child</b> [4] - 377:24, 383:8, 561:23, 606:24</p> <p><b>children</b> [11] - 371:3, 371:4, 383:4, 397:13, 587:18, 602:13, 606:12, 606:16, 606:18, 611:18, 611:19</p> <p><b>Chiles</b> [1] - 342:7</p> <p><b>choices</b> [2] - 594:12, 640:7</p> <p><b>choir</b> [1] - 633:5</p> <p><b>choosing</b> [1] - 470:14</p> <p><b>chose</b> [1] - 475:7</p> <p><b>chosen</b> [2] - 498:6, 498:8</p> <p><b>CHRIS</b> [2] - 332:11, 335:9</p> <p><b>Chris</b> [5] - 374:24, 472:21, 472:22, 473:5, 481:22</p> <p><b>chronic</b> [1] - 593:25</p> <p><b>chronically</b> [1] - 373:16</p> <p><b>chunk</b> [1] - 551:9</p> <p><b>church</b> [1] - 587:22</p> <p><b>circles</b> [3] - 512:24, 579:3, 579:5</p> <p><b>circular</b> [1] - 513:18</p> <p><b>circumstance</b> [1] - 384:4</p> <p><b>circumstances</b> [2] - 372:3, 531:18</p> <p><b>cite</b> [2] - 361:16, 390:23</p> <p><b>cited</b> [2] - 462:13, 482:25</p> <p><b>citizens</b> [1] - 626:8</p> <p><b>city</b> [1] - 398:10</p> <p><b>City</b> [1] - 550:22</p> <p><b>claim</b> [3] - 370:10, 490:20, 491:7</p> <p><b>claimed</b> [2] - 355:2, 375:10</p> <p><b>claiming</b> [2] - 358:2, 592:23</p> <p><b>clarification</b> [3] - 472:14, 517:18, 617:21</p> <p><b>clarify</b> [4] - 352:3, 438:22, 638:15, 639:21</p> <p><b>clarifying</b> [2] - 359:19, 620:10</p> <p><b>class</b> [1] - 572:12</p> <p><b>classified</b> [1] - 572:12</p> <p><b>classify</b> [1] - 447:17</p>	<p><b>claws</b> [1] - 480:11</p> <p><b>cleaning</b> [1] - 613:6</p> <p><b>clear</b> [8] - 411:15, 522:10, 554:13, 602:23, 608:7, 609:7, 613:5, 634:21</p> <p><b>clearly</b> [1] - 499:1</p> <p><b>clenched</b> [2] - 575:9, 575:11</p> <p><b>client</b> [2] - 485:15, 485:16</p> <p><b>climate</b> [3] - 453:7, 540:19, 637:1</p> <p><b>Climate</b> [1] - 341:16</p> <p><b>climb</b> [1] - 527:10</p> <p><b>climbed</b> [1] - 547:24</p> <p><b>clinic</b> [1] - 573:25</p> <p><b>clinical</b> [1] - 371:4</p> <p><b>close</b> [8] - 369:21, 485:23, 493:9, 539:5, 553:7, 585:16, 598:5, 600:3</p> <p><b>closely</b> [1] - 444:15</p> <p><b>closer</b> [6] - 392:18, 429:25, 481:23, 577:15, 586:18, 604:25</p> <p><b>closest</b> [7] - 399:15, 561:3, 583:19, 586:16, 586:19, 586:22, 604:23</p> <p><b>cloud</b> [2] - 487:15, 487:22</p> <p><b>clouds</b> [1] - 637:5</p> <p><b>clue</b> [1] - 410:5</p> <p><b>Co</b> [2] - 348:9, 348:15</p> <p><b>coated</b> [1] - 569:10</p> <p><b>coauthored</b> [1] - 494:11</p> <p><b>coerced</b> [1] - 625:1</p> <p><b>cold</b> [1] - 552:12</p> <p><b>colleague</b> [1] - 367:12</p> <p><b>collect</b> [3] - 357:17, 536:15, 537:23</p> <p><b>collected</b> [5] - 357:24, 495:3, 535:17, 536:17, 543:2</p> <p><b>collecting</b> [1] - 539:10</p> <p><b>collection</b> [4] - 542:4, 542:13, 543:11, 544:12</p> <p><b>collects</b> [1] - 543:12</p> <p><b>college</b> [2] - 564:24, 581:15</p> <p><b>Colloca</b> [1] - 343:3</p> <p><b>colony</b> [3] - 583:19, 597:23, 609:5</p> <p><b>colored</b> [1] - 435:14</p> <p><b>colors</b> [1] - 510:7</p> <p><b>column</b> [1] - 531:11</p>
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<p><b>com</b> <sup>[1]</sup> - 571:25</p> <p><b>combine</b> <sup>[1]</sup> - 537:23</p> <p><b>comfort</b> <sup>[2]</sup> - 386:16, 466:5</p> <p><b>comfortable</b> <sup>[3]</sup> - 400:21, 454:23, 457:14</p> <p><b>coming</b> <sup>[17]</sup> - 372:15, 372:17, 415:3, 422:24, 446:18, 457:19, 459:4, 543:20, 557:5, 564:21, 568:16, 578:1, 580:11, 581:3, 600:3, 606:3, 618:19</p> <p><b>Comm</b> <sup>[1]</sup> - 341:7</p> <p><b>commencing</b> <sup>[1]</sup> - 350:5</p> <p><b>comment</b> <sup>[5]</sup> - 418:6, 451:5, 514:2, 632:24, 640:4</p> <p><b>comments</b> <sup>[10]</sup> - 357:23, 380:16, 423:13, 423:17, 423:20, 427:9, 434:16, 485:15, 485:16, 633:16</p> <p><b>Commercial</b> <sup>[1]</sup> - 343:5</p> <p><b>Commission</b> <sup>[58]</sup> - 333:7, 333:13, 333:19, 333:23, 334:4, 334:9, 334:14, 334:16, 334:22, 335:6, 335:12, 335:17, 335:22, 336:6, 336:10, 336:19, 337:6, 337:13, 337:18, 337:22, 338:6, 338:10, 338:15, 338:18, 338:22, 339:6, 339:13, 371:9, 374:22, 379:17, 379:20, 392:16, 393:5, 393:12, 406:18, 413:6, 418:24, 429:19, 445:8, 446:4, 464:18, 469:2, 473:4, 511:12, 518:11, 522:20, 534:4, 561:8, 591:20, 591:25, 606:10, 611:22, 614:1, 627:9, 638:17, 639:10, 640:17, 642:8</p>	<p><b>COMMISSION</b> <sup>[3]</sup> - 332:1, 332:9, 332:12</p> <p><b>commission</b> <sup>[1]</sup> - 355:17</p> <p><b>Commission's</b> <sup>[1]</sup> - 638:22</p> <p><b>commissioned</b> <sup>[1]</sup> - 357:7</p> <p><b>Commissioner</b> <sup>[30]</sup> - 380:15, 384:17, 384:19, 388:7, 388:10, 388:22, 419:8, 423:14, 425:15, 427:9, 431:25, 445:10, 445:13, 467:12, 467:15, 512:20, 512:21, 519:2, 561:9, 565:9, 579:18, 592:1, 593:6, 594:9, 611:24, 612:10, 612:14, 638:2, 638:13, 640:2</p> <p><b>COMMISSIONER</b> <sup>[135]</sup> - 332:11, 374:25, 375:8, 375:14, 376:7, 376:13, 376:16, 376:20, 377:20, 377:22, 378:5, 378:9, 378:13, 378:18, 386:10, 386:24, 387:7, 387:11, 387:19, 388:1, 419:1, 419:6, 419:9, 419:12, 420:9, 445:17, 445:21, 446:5, 446:22, 447:20, 448:5, 448:19, 449:4, 449:9, 449:16, 450:11, 451:14, 451:22, 452:15, 452:25, 453:3, 453:5, 453:11, 453:19, 453:22, 454:10, 455:10, 455:13, 455:25, 456:16, 457:2, 458:1, 458:5, 458:10, 458:21, 459:13, 459:23, 460:1, 460:9, 460:12, 460:17, 461:2, 461:16, 461:20, 461:22, 462:23, 463:2, 463:4, 463:6, 463:14, 463:19,</p>	<p>463:23, 464:3, 464:9, 466:4, 466:10, 467:1, 467:13, 467:21, 467:25, 468:5, 512:22, 513:1, 513:5, 513:22, 514:1, 514:5, 514:10, 561:11, 561:13, 561:15, 561:20, 562:6, 562:13, 562:17, 563:1, 563:3, 563:7, 564:3, 564:11, 564:19, 564:25, 565:8, 568:2, 568:7, 568:9, 568:12, 579:21, 579:25, 580:3, 580:6, 580:9, 592:2, 592:21, 593:3, 593:7, 593:22, 611:25, 612:5, 612:8, 612:11, 627:2, 627:10, 627:22, 627:23, 638:4, 638:9, 638:12, 640:3, 640:18, 640:21, 640:24, 641:8, 641:15, 641:24</p> <p><b>Commissioners</b> <sup>[9]</sup> - 361:24, 461:4, 524:5, 599:1, 608:7, 608:12, 627:11, 630:11, 638:1</p> <p><b>commissioners</b> <sup>[4]</sup> - 630:8, 634:5, 634:12, 634:13</p> <p><b>commit</b> <sup>[1]</sup> - 441:2</p> <p><b>commitment's</b> <sup>[1]</sup> - 590:17</p> <p><b>commitments</b> <sup>[2]</sup> - 446:3, 471:20</p> <p><b>committed</b> <sup>[5]</sup> - 432:6, 432:10, 441:5, 442:20, 461:15</p> <p><b>committee</b> <sup>[2]</sup> - 494:3, 494:5</p> <p><b>committing</b> <sup>[2]</sup> - 452:14, 465:17</p> <p><b>common</b> <sup>[5]</sup> - 352:10, 529:24, 541:19, 579:15, 622:2</p> <p><b>commonly</b> <sup>[2]</sup> - 387:18, 489:21</p> <p><b>commonwealth</b> <sup>[1]</sup> - 357:21</p> <p><b>Commonwealth</b> <sup>[1]</sup> - 362:1</p>	<p><b>communication</b> <sup>[1]</sup> - 629:8</p> <p><b>communications</b> <sup>[3]</sup> - 440:5, 445:2, 618:2</p> <p><b>communities</b> <sup>[2]</sup> - 494:8, 537:12</p> <p><b>Community</b> <sup>[1]</sup> - 348:22</p> <p><b>community</b> <sup>[39]</sup> - 365:23, 394:8, 394:12, 396:6, 396:8, 401:16, 402:9, 402:15, 403:1, 403:17, 403:18, 420:3, 420:24, 421:19, 423:21, 478:6, 478:14, 478:17, 480:5, 480:16, 480:18, 480:19, 480:24, 480:25, 481:3, 481:7, 481:9, 481:10, 481:16, 481:17, 481:19, 482:5, 482:14, 483:11, 483:12, 483:17, 524:16, 623:24</p> <p><b>community's</b> <sup>[1]</sup> - 480:9</p> <p><b>companies</b> <sup>[7]</sup> - 536:7, 624:10, 624:18, 625:7, 625:19, 638:16, 639:11</p> <p><b>company</b> <sup>[8]</sup> - 353:12, 354:9, 355:13, 355:20, 439:1, 461:6, 555:9, 623:20</p> <p><b>company's</b> <sup>[1]</sup> - 382:1</p> <p><b>comparable</b> <sup>[1]</sup> - 577:18</p> <p><b>compare</b> <sup>[3]</sup> - 448:1, 517:3, 532:25</p> <p><b>compared</b> <sup>[1]</sup> - 454:5</p> <p><b>compares</b> <sup>[2]</sup> - 540:14, 545:18</p> <p><b>comparing</b> <sup>[2]</sup> - 519:20, 579:22</p> <p><b>comparison</b> <sup>[3]</sup> - 386:21, 395:9, 451:7</p> <p><b>compass</b> <sup>[2]</sup> - 616:16, 616:18</p> <p><b>compatriots</b> <sup>[1]</sup> - 461:4</p> <p><b>complain</b> <sup>[1]</sup> - 491:6</p> <p><b>complaining</b> <sup>[2]</sup> - 355:7, 370:10</p> <p><b>Complaints</b> <sup>[1]</sup> - 342:20</p>	<p><b>complaints</b> <sup>[13]</sup> - 353:13, 354:6, 363:23, 364:8, 364:19, 364:22, 365:2, 365:24, 366:17, 370:12, 380:20, 489:10, 489:12</p> <p><b>complete</b> <sup>[4]</sup> - 443:24, 443:25, 471:17, 498:25</p> <p><b>completed</b> <sup>[6]</sup> - 441:10, 441:13, 441:15, 442:7, 447:7, 447:19</p> <p><b>completely</b> <sup>[4]</sup> - 452:7, 485:2, 541:7, 558:11</p> <p><b>compliance</b> <sup>[1]</sup> - 590:9</p> <p><b>complications</b> <sup>[1]</sup> - 596:9</p> <p><b>comply</b> <sup>[2]</sup> - 471:19, 471:24</p> <p><b>complying</b> <sup>[1]</sup> - 412:22</p> <p><b>component</b> <sup>[5]</sup> - 517:6, 517:7, 517:11, 517:12, 518:2</p> <p><b>composed</b> <sup>[1]</sup> - 471:22</p> <p><b>compounded</b> <sup>[1]</sup> - 364:3</p> <p><b>computer</b> <sup>[5]</sup> - 423:25, 525:2, 542:2, 551:1, 565:21</p> <p><b>concentrations</b> <sup>[1]</sup> - 373:16</p> <p><b>concept</b> <sup>[2]</sup> - 352:4, 517:25</p> <p><b>concern</b> <sup>[23]</sup> - 352:5, 357:23, 382:19, 395:20, 425:4, 427:2, 440:14, 441:17, 441:18, 518:3, 518:7, 518:8, 575:20, 576:25, 577:7, 581:24, 607:1, 607:16, 614:18, 622:15, 623:15, 625:3, 626:10</p> <p><b>concerned</b> <sup>[10]</sup> - 395:18, 395:23, 448:21, 457:12, 466:6, 597:18, 609:19, 624:13, 633:7, 640:16</p> <p><b>concerns</b> <sup>[25]</sup> -</p>
--	--	--	--	---

<p>375:13, 395:7, 395:8, 395:15, 403:21, 425:5, 426:5, 442:9, 442:21, 444:2, 472:2, 573:1, 590:3, 591:9, 597:15, 606:11, 610:7, 610:16, 610:19, 611:5, 622:4, 628:16, 631:25, 632:8, 632:11 <b>conclude</b> [1] - 594:5 <b>concluded</b> [4] - 368:14, 429:2, 570:8, 570:10 <b>concludes</b> [2] - 390:24, 540:15 <b>conclusion</b> [7] - 369:2, 369:7, 369:11, 456:19, 494:21, 500:24, 582:6 <b>conclusions</b> [3] - 362:14, 368:10, 625:22 <b>concrete</b> [1] - 499:1 <b>condition</b> [14] - 419:15, 419:17, 419:20, 471:15, 525:13, 530:17, 530:19, 530:22, 530:23, 542:13, 543:18, 557:21, 569:8, 593:25 <b>Conditional</b> [4] - 616:10, 616:11, 619:12, 628:19 <b>conditional</b> [2] - 619:17, 632:6 <b>conditions</b> [40] - 369:17, 386:5, 405:23, 419:23, 432:14, 453:8, 464:13, 471:13, 487:5, 487:11, 500:3, 520:25, 524:21, 525:1, 525:10, 525:12, 530:2, 530:9, 532:16, 534:11, 538:10, 538:24, 539:17, 540:7, 547:2, 548:16, 548:19, 557:8, 562:8, 564:2, 573:7, 589:23, 590:2, 590:20, 611:4, 621:9, 627:6, 633:1, 637:1</p>	<p><b>Conditions</b> [2] - 346:10, 346:12 <b>conductive</b> [1] - 450:4 <b>conduct</b> [2] - 357:13, 357:15 <b>conducted</b> [14] - 367:17, 367:19, 432:12, 437:16, 464:16, 465:4, 470:12, 470:17, 470:22, 470:25, 471:2, 474:1, 489:9, 509:10 <b>conducting</b> [3] - 438:6, 443:24, 466:23 <b>conference</b> [2] - 380:17, 613:20 <b>confidence</b> [1] - 386:19 <b>confident</b> [1] - 401:13 <b>Confidential</b> [3] - 346:13, 346:14, 347:3 <b>confidential</b> [9] - 413:19, 522:6, 522:15, 526:25, 527:4, 565:14, 565:16, 565:24, 566:25 <b>confidentiality</b> [2] - 413:15, 413:23 <b>confirm</b> [1] - 602:25 <b>confirmation</b> [1] - 444:5 <b>conflict</b> [1] - 626:12 <b>Congress</b> [1] - 342:9 <b>connected</b> [2] - 550:18, 550:21 <b>Connecticut</b> [1] - 344:21 <b>connection</b> [2] - 412:25, 455:14 <b>consensus</b> [1] - 591:3 <b>consequence</b> [1] - 352:14 <b>consequences</b> [1] - 428:17 <b>conservation</b> [3] - 452:13, 452:16, 456:9 <b>conservative</b> [5] - 493:22, 493:23, 500:10, 500:25, 513:8 <b>consider</b> [12] - 358:5, 400:1, 400:5, 477:13, 477:25, 481:10, 482:21, 519:21, 572:20,</p>	<p>627:4, 633:17, 639:16 <b>considerably</b> [1] - 464:4 <b>consideration</b> [3] - 380:21, 381:1, 571:20 <b>considerations</b> [2] - 525:22, 526:3 <b>considered</b> [12] - 358:21, 481:17, 499:13, 516:9, 572:14, 624:16, 624:19, 639:5, 640:23, 640:24, 641:12, 641:14 <b>considering</b> [3] - 456:23, 478:5, 486:23 <b>considers</b> [2] - 513:7, 513:14 <b>consistent</b> [4] - 460:15, 465:14, 485:10, 507:8 <b>consists</b> [1] - 393:14 <b>constant</b> [1] - 401:8 <b>constantly</b> [3] - 576:9, 576:10, 588:6 <b>constructed</b> [1] - 622:18 <b>construction</b> [8] - 413:1, 416:2, 452:1, 520:5, 523:1, 524:9, 524:10, 524:11 <b>consult</b> [1] - 468:15 <b>consultant</b> [1] - 468:21 <b>consultation</b> [1] - 438:9 <b>consulting</b> [1] - 451:20 <b>consumption</b> [1] - 373:13 <b>contact</b> [4] - 395:2, 443:17, 443:18, 591:18 <b>contacted</b> [4] - 591:10, 631:1, 638:17, 638:19 <b>contain</b> [4] - 448:3, 450:15, 450:16, 451:10 <b>contains</b> [3] - 450:21, 474:3, 580:16 <b>contents</b> [1] - 412:8 <b>contests</b> [1] - 572:13 <b>context</b> [8] - 363:13, 381:3, 384:8, 391:1, 451:2, 451:7, 504:4, 638:23</p>	<p><b>continual</b> [1] - 546:7 <b>continually</b> [2] - 576:14, 577:25 <b>continue</b> [13] - 358:19, 452:11, 488:13, 548:12, 552:18, 567:15, 579:17, 594:22, 618:23, 625:24, 627:18, 629:16, 629:18 <b>Continued</b> [16] - 334:1, 335:1, 336:1, 337:1, 338:1, 339:1, 340:1, 341:1, 342:1, 343:1, 344:1, 345:1, 346:1, 347:1, 348:1, 349:1 <b>continues</b> [1] - 530:15 <b>continuous</b> [2] - 492:15, 520:21 <b>continuously</b> [1] - 482:13 <b>contours</b> [1] - 510:6 <b>contract</b> [2] - 411:14, 411:22 <b>contractor</b> [1] - 524:12 <b>contractually</b> [2] - 413:4, 413:12 <b>control</b> [6] - 477:17, 532:3, 550:19, 550:22, 550:23, 558:19 <b>controller</b> [20] - 541:10, 541:15, 541:16, 541:21, 545:6, 545:10, 545:15, 546:2, 546:5, 546:7, 546:15, 546:18, 547:8, 550:14, 555:12, 556:10, 556:16, 565:2 <b>controllers</b> [1] - 550:13 <b>controlling</b> [1] - 551:2 <b>controls</b> [8] - 531:25, 539:2, 539:16, 546:12, 546:23, 546:24, 564:8 <b>controversy</b> [1] - 419:25 <b>conversation</b> [4] - 390:10, 446:23, 458:25, 535:1 <b>conversations</b> [4] - 617:14, 618:12, 631:8, 635:25 <b>Cooper</b> [2] - 374:4, 501:20</p>	<p><b>Cooper's</b> [1] - 503:13 1 1 <b>cooperate</b> [1] - 412:22 <b>cooperative</b> [1] - 445:3 <b>coordinates</b> [1] - 616:19 <b>coordinating</b> [2] - 440:7, 468:12 <b>coordination</b> [2] - 440:8, 480:3 <b>copper</b> [2] - 440:10, 440:13 <b>copy</b> [7] - 414:3, 464:17, 502:23, 522:12, 603:11, 631:2, 631:3 <b>Corey</b> [1] - 344:11 <b>corner</b> [10] - 523:16, 581:11, 584:14, 600:14, 600:15, 600:24, 600:25, 609:3, 609:4, 609:6 <b>cornfield</b> [1] - 499:9 <b>Corporation</b> [2] - 344:7, 344:11 <b>correct</b> [117] - 354:3, 354:4, 356:12, 357:6, 357:11, 357:12, 357:14, 357:16, 364:15, 369:8, 371:16, 373:2, 375:6, 376:17, 377:7, 379:2, 385:5, 387:6, 387:24, 387:25, 388:25, 389:1, 389:8, 393:9, 395:1, 400:21, 400:25, 401:1, 401:16, 404:3, 404:8, 404:21, 407:13, 407:25, 408:25, 410:14, 421:17, 425:20, 427:12, 431:4, 433:9, 433:22, 435:11, 435:16, 439:4, 440:25, 450:7, 461:20, 463:19, 466:9, 467:21, 467:24, 468:3, 468:4, 474:2, 474:5, 477:4, 477:5, 478:2, 478:13, 478:23, 480:2, 482:7, 483:2, 483:10, 483:20, 484:8, 485:5, 485:8, 486:21, 492:18, 493:16, 494:10, 495:3, 495:4,</p>
---	---	--	---	---

<p>495:11, 495:20, 495:21, 496:19, 497:17, 497:24, 500:8, 500:14, 512:25, 518:22, 519:1, 521:13, 523:24, 526:21, 528:3, 528:5, 539:9, 548:10, 548:11, 552:8, 554:2, 555:13, 555:23, 556:25, 557:1, 559:24, 560:4, 563:5, 590:15, 592:15, 601:23, 604:18, 605:5, 608:22, 611:14, 618:21, 634:6, 635:22, 636:4, 638:7, 643:12</p> <p><b>corrected</b> [1] - 608:16</p> <p><b>correction</b> [2] - 431:17, 432:17</p> <p><b>corrections</b> [2] - 431:9, 476:3</p> <p><b>correctly</b> [12] - 373:21, 377:23, 385:13, 385:22, 386:1, 387:1, 387:3, 388:18, 468:1, 483:4, 558:15, 633:9</p> <p><b>correlation</b> [1] - 515:9</p> <p><b>correspond</b> [1] - 510:7</p> <p><b>Correspondence</b> [1] - 343:18</p> <p><b>corridor</b> [1] - 468:18</p> <p><b>cortex</b> [1] - 390:2</p> <p><b>Cost</b> [1] - 343:16</p> <p><b>costs</b> [1] - 438:16</p> <p><b>couch</b> [1] - 616:9</p> <p><b>council</b> [4] - 367:14, 369:2, 369:3, 369:14</p> <p><b>Council</b> [6] - 340:9, 340:12, 340:15, 340:18, 340:24, 368:2</p> <p><b>counsel</b> [2] - 412:4, 447:5</p> <p><b>count</b> [1] - 408:20</p> <p><b>counter</b> [1] - 385:10</p> <p><b>counties</b> [2] - 625:17, 626:21</p> <p><b>country</b> [13] - 397:19, 424:18, 424:20, 437:19, 488:7, 507:6, 508:2, 614:19, 615:19, 616:1, 619:24, 620:2</p> <p><b>county</b> [15] - 394:8,</p>	<p>398:10, 590:7, 590:10, 590:12, 623:16, 625:9, 625:11, 625:17, 626:12, 627:20, 630:9, 634:5, 635:13, 638:9</p> <p><b>County</b> [15] - 348:4, 571:17, 590:13, 614:3, 614:7, 617:2, 617:3, 617:4, 628:11, 630:4, 631:15, 631:16, 634:1, 635:16, 638:10</p> <p><b>COUNTY</b> [4] - 332:4, 332:4, 643:3</p> <p><b>couple</b> [15] - 383:3, 402:3, 420:18, 447:14, 449:19, 461:8, 467:15, 475:19, 508:7, 538:18, 553:16, 574:25, 575:8, 579:19, 587:16</p> <p><b>coupled</b> [2] - 382:14, 568:14</p> <p><b>course</b> [2] - 453:25, 464:19</p> <p><b>coursework</b> [1] - 430:4</p> <p><b>COURT</b> [1] - 538:3</p> <p><b>court</b> [4] - 416:13, 601:13, 628:20, 633:11</p> <p><b>courtroom</b> [1] - 598:15</p> <p><b>cover</b> [4] - 447:13, 487:15, 499:21, 499:22</p> <p><b>covered</b> [8] - 431:5, 454:14, 454:15, 470:21, 474:16, 523:13, 524:6, 527:5</p> <p><b>covering</b> [2] - 431:7, 438:15</p> <p><b>cow</b> [1] - 575:22</p> <p><b>cows</b> [5] - 572:12, 575:23, 576:1, 576:3, 576:6</p> <p><b>crabby</b> [2] - 587:19</p> <p><b>crane</b> [18] - 398:5, 432:2, 432:7, 447:5, 452:19, 452:21, 453:1, 457:24, 458:22, 458:23, 459:14, 463:12, 463:24, 465:5, 467:17, 468:2, 472:1, 621:23</p>	<p><b>cranes</b> [29] - 431:24, 432:9, 438:6, 446:19, 448:4, 449:22, 450:5, 453:25, 454:3, 457:19, 457:20, 457:23, 461:24, 462:1, 462:18, 462:19, 462:21, 462:24, 463:7, 464:11, 464:24, 465:10, 466:24, 467:14, 468:2, 468:11, 621:22, 642:3</p> <p><b>crank</b> [1] - 642:9</p> <p><b>crazy</b> [1] - 565:22</p> <p><b>create</b> [7] - 375:15, 487:15, 487:16, 490:20, 493:7, 533:25, 543:13</p> <p><b>created</b> [7] - 397:4, 477:10, 480:1, 488:4, 490:12, 501:19</p> <p><b>creates</b> [4] - 490:5, 490:9, 513:18, 542:19</p> <p><b>creating</b> [3] - 401:3, 501:6, 501:7</p> <p><b>credit</b> [1] - 625:6</p> <p><b>CREECH</b> [2] - 335:14, 570:21</p> <p><b>Crech</b> [20] - 344:23, 521:23, 522:1, 522:5, 522:13, 522:19, 522:21, 523:10, 523:16, 525:5, 525:19, 526:1, 528:2, 528:12, 528:15, 528:22, 528:25, 561:11, 569:7, 571:14</p> <p><b>creek</b> [4] - 414:19, 578:19, 578:22, 579:1</p> <p><b>Creek</b> [1] - 579:2</p> <p><b>Cremer</b> [2] - 332:13, 593:12</p> <p><b>Crichton</b> [1] - 342:19</p> <p><b>cried</b> [1] - 422:7</p> <p><b>crisis</b> [4] - 372:10, 372:19, 372:22, 615:17</p> <p><b>criteria</b> [11] - 419:13, 480:8, 482:16, 486:11, 486:18, 486:22, 505:18, 509:12, 509:19,</p>	<p>511:7, 621:10</p> <p><b>Criterion</b> [1] - 347:9</p> <p><b>critical</b> [12] - 448:6, 449:25, 450:6, 450:10, 450:13, 450:20, 451:3, 451:4, 457:11, 462:6, 498:5, 498:7</p> <p><b>criticism</b> [2] - 478:7, 478:12</p> <p><b>criticisms</b> [1] - 474:19</p> <p><b>criticized</b> [1] - 478:5</p> <p><b>critique</b> [1] - 478:7</p> <p><b>crop</b> [1] - 499:24</p> <p><b>crops</b> [1] - 499:15</p> <p><b>Cross</b> [87] - 333:4, 333:5, 333:5, 333:6, 333:6, 333:11, 333:12, 333:12, 333:17, 333:17, 333:18, 333:18, 333:21, 333:22, 333:22, 333:23, 334:5, 334:5, 334:6, 334:8, 334:12, 334:12, 334:13, 334:13, 334:19, 334:20, 334:20, 334:21, 334:21, 335:4, 335:5, 335:5, 335:10, 335:11, 335:11, 335:15, 335:16, 335:16, 335:21, 335:21, 335:22, 336:4, 336:5, 336:5, 336:9, 336:10, 336:14, 336:14, 336:17, 336:17, 336:18, 336:18, 336:19, 337:4, 337:5, 337:5, 337:6, 337:12, 337:13, 337:17, 337:18, 337:21, 337:21, 337:22, 338:4, 338:5, 338:5, 338:8, 338:9, 338:9, 338:10, 338:13, 338:14, 338:14, 338:17, 338:18, 338:21, 338:22, 339:4, 339:5, 339:5, 339:7, 339:8, 339:11, 339:12, 339:12, 339:13</p> <p><b>cross</b> [41] - 351:8, 351:12, 351:19, 377:11, 379:16, 398:19, 398:20, 407:2, 407:3,</p>	<p>414:14, 432:24, 12 472:11, 474:25, 475:3, 475:18, 476:9, 476:23, 502:13, 504:21, 518:10, 521:4, 528:16, 528:17, 528:23, 528:24, 582:11, 582:19, 582:22, 582:24, 589:7, 598:21, 599:4, 602:11, 602:17, 609:14, 633:20, 636:14, 637:14, 637:17, 637:20, 638:2</p> <p><b>CROSS</b> [26] - 351:13, 370:17, 371:1, 371:13, 399:1, 407:4, 416:20, 417:12, 418:4, 433:4, 437:11, 438:1, 477:1, 504:23, 509:8, 529:1, 550:11, 553:18, 583:1, 589:11, 589:20, 602:21, 609:15, 610:5, 633:23, 636:16</p> <p><b>Cross-Examination</b> [87] - 333:4, 333:5, 333:5, 333:6, 333:6, 333:11, 333:12, 333:12, 333:17, 333:17, 333:18, 333:18, 333:21, 333:22, 333:22, 333:23, 334:5, 334:5, 334:6, 334:8, 334:12, 334:12, 334:13, 334:13, 334:19, 334:20, 334:20, 334:21, 334:21, 335:4, 335:5, 335:5, 335:10, 335:11, 335:11, 335:15, 335:16, 335:16, 335:21, 335:21, 335:22, 336:4, 336:5, 336:5, 336:9, 336:10, 336:14, 336:14, 336:17, 336:17, 336:18, 336:18, 336:19, 337:4, 337:5, 337:5, 337:6, 337:12, 337:13, 337:17, 337:18, 337:21, 337:21, 337:22, 338:4, 338:5, 338:5, 338:8, 338:9, 338:9, 338:10, 338:13, 338:14, 338:14, 338:17, 338:18, 338:21, 338:22, 339:4, 339:5, 339:5, 339:7, 339:8, 339:11, 339:12, 339:12, 339:13</p> <p><b>cross</b> [41] - 351:8, 351:12, 351:19, 377:11, 379:16, 398:19, 398:20, 407:2, 407:3,</p>
---	--	---	--	--



<p>338:4, 338:5, 338:5, 338:8, 338:9, 338:9, 338:10, 338:13, 338:14, 338:14, 338:17, 338:18, 338:21, 338:22, 339:4, 339:5, 339:5, 339:7, 339:8, 339:11, 339:12, 339:12, 339:13</p> <p><b>cross-examination</b> [31] - 351:8, 351:12, 351:19, 379:16, 398:19, 398:20, 407:2, 407:3, 432:24, 472:11, 475:18, 476:9, 476:23, 504:21, 518:10, 521:4, 528:16, 528:17, 528:23, 528:24, 582:11, 582:19, 602:11, 602:17, 609:14, 633:20, 636:14, 637:14, 637:17, 637:20, 638:2</p> <p><b>CROSS- EXAMINATION</b> [26] - 351:13, 370:17, 371:1, 371:13, 399:1, 407:4, 416:20, 417:12, 418:4, 433:4, 437:11, 438:1, 477:1, 504:23, 509:8, 529:1, 550:11, 553:18, 583:1, 589:11, 589:20, 602:21, 609:15, 610:5, 633:23, 636:16</p> <p><b>cross-examine</b> [4] - 474:25, 475:3, 589:7, 598:21</p> <p><b>cross-examined</b> [2] - 377:11, 599:4</p> <p><b>crossed</b> [1] - 373:22</p> <p><b>crossing</b> [1] - 449:10</p> <p><b>crossings</b> [2] - 449:12, 449:13</p> <p><b>CRR</b> [1] - 332:24</p> <p><b>crushed</b> [1] - 572:2</p> <p><b>Ct</b> [1] - 346:21</p> <p><b>Cuba</b> [1] - 342:17</p> <p><b>cuff</b> [1] - 517:9</p> <p><b>culmination</b> [1] - 621:1</p> <p><b>cultural</b> [2] - 443:19, 444:4</p>	<p><b>culvert</b> [2] - 449:7, 449:10</p> <p><b>culverts</b> [1] - 448:22</p> <p><b>cumulative</b> [2] - 622:22, 633:12</p> <p><b>CUP</b> [1] - 628:12</p> <p><b>curious</b> [6] - 398:3, 455:13, 519:13, 562:19, 605:9, 605:11</p> <p><b>current</b> [8] - 395:2, 422:1, 436:11, 436:12, 436:15, 437:15, 452:22, 524:9</p> <p><b>Curriculum</b> [2] - 343:11, 347:14</p> <p><b>cursor</b> [1] - 435:19</p> <p><b>curtailment</b> [5] - 432:6, 459:7, 461:12, 462:16, 465:2</p> <p><b>curve</b> [1] - 600:10</p> <p><b>curved</b> [1] - 584:15</p> <p><b>curves</b> [2] - 376:10, 381:7</p> <p><b>cut</b> [1] - 396:2</p> <p><b>CV</b> [2] - 340:4, 477:6</p>	<p><b>D</b></p> <p><b>dad</b> [9] - 393:18, 396:22, 409:17, 564:24, 572:5, 572:7, 581:17, 581:19, 597:5</p> <p><b>daily</b> [2] - 466:25, 576:12</p> <p><b>dairy</b> [2] - 572:10, 572:15</p> <p><b>Dakota</b> [23] - 332:25, 349:17, 350:2, 350:4, 376:24, 392:20, 460:5, 460:19, 461:8, 463:20, 499:17, 500:7, 548:13, 549:1, 549:12, 551:23, 557:16, 558:8, 562:9, 571:16, 571:24, 643:7, 643:13</p> <p><b>DAKOTA</b> [3] - 332:1, 332:5, 643:1</p> <p><b>Damon</b> [1] - 343:9</p> <p><b>dangerous</b> [2] - 352:11, 380:8</p> <p><b>dangerously</b> [1] - 372:5</p> <p><b>DANIEL</b> [1] - 334:7</p>	<p><b>Danish</b> [1] - 341:23</p> <p><b>dark</b> [3] - 400:14, 453:18, 621:14</p> <p><b>DARREN</b> [1] - 339:3</p> <p><b>dashes</b> [1] - 580:12</p> <p><b>Data</b> [17] - 345:14, 345:17, 345:20, 345:22, 345:23, 345:25, 346:4, 346:6, 346:8, 347:5, 347:5, 349:11, 349:12, 349:14, 349:18, 349:20, 349:21</p> <p><b>data</b> [21] - 357:17, 357:24, 369:4, 381:2, 486:4, 495:2, 506:2, 506:3, 506:4, 535:17, 537:9, 537:24, 542:2, 543:10, 544:12, 554:14, 571:8, 586:2, 588:10, 595:3, 633:16</p> <p><b>database</b> [3] - 447:13, 460:21, 537:22</p> <p><b>databases</b> [1] - 447:14</p> <p><b>date</b> [9] - 367:20, 411:22, 431:6, 431:17, 437:14, 470:16, 470:18, 470:20, 627:15</p> <p><b>dated</b> [1] - 343:19</p> <p><b>Dated</b> [1] - 643:13</p> <p><b>dates</b> [4] - 470:4, 470:6, 470:8, 571:22</p> <p><b>daughter</b> [8] - 377:2, 402:18, 416:16, 596:8, 605:12, 607:1, 608:9, 609:18</p> <p><b>David</b> [4] - 361:14, 362:21, 362:25, 478:4</p> <p><b>DAVID</b> [1] - 337:3</p> <p><b>daylight</b> [1] - 453:16</p> <p><b>days</b> [10] - 416:25, 420:18, 441:14, 520:22, 552:11, 574:22, 575:1, 576:19, 613:9, 630:23</p> <p><b>daytime</b> [3] - 487:23, 491:5, 611:9</p> <p><b>dB</b> [5] - 382:15, 387:8, 387:9, 497:17, 512:13</p> <p><b>dB(A)s</b> [1] - 611:9</p> <p><b>dB(C)</b> [4] - 517:2, 517:9, 518:5, 518:6</p> <p><b>dB(G)</b> [5] - 387:13,</p>	<p>387:17, 387:23, 516:21, 518:7</p> <p><b>dB(G)</b> [5] - 387:10, 387:11, 517:21, 518:5, 518:6</p> <p><b>dBA</b> [55] - 360:3, 360:12, 360:13, 360:20, 360:22, 360:23, 361:3, 361:6, 361:9, 361:10, 363:22, 364:1, 364:5, 364:7, 364:11, 364:18, 365:7, 365:14, 365:16, 365:25, 366:18, 377:11, 382:10, 382:16, 385:15, 385:19, 387:2, 387:8, 387:20, 483:11, 483:12, 483:14, 486:20, 486:23, 493:1, 493:8, 493:21, 494:19, 501:13, 509:19, 510:8, 510:11, 511:7, 512:23, 514:2, 514:16, 517:8, 519:2, 519:3, 519:8, 519:21</p> <p><b>de</b> [13] - 332:12, 351:2, 366:11, 406:15, 580:22, 601:9, 608:14, 617:12, 620:9, 624:2, 625:20, 626:19, 633:22</p> <p><b>DE</b> [209] - 351:1, 364:22, 366:4, 366:9, 366:14, 366:21, 370:16, 370:23, 370:25, 371:9, 374:22, 376:23, 378:21, 378:24, 379:5, 379:14, 379:16, 380:12, 382:21, 382:23, 384:17, 388:2, 391:18, 392:4, 392:8, 398:20, 398:24, 405:3, 405:6, 406:1, 406:19, 406:22, 406:25, 416:19, 417:11, 418:3, 418:22, 418:24, 419:8, 420:11, 424:23, 425:9, 427:6, 428:7, 428:22, 428:24, 429:1, 429:5,</p>	<p>432:25, 433:3, 13 436:6, 437:10, 437:21, 437:23, 437:25, 439:23, 445:8, 467:9, 468:6, 469:1, 469:4, 469:6, 469:21, 471:6, 471:8, 472:5, 472:8, 474:23, 475:2, 475:9, 475:15, 475:22, 476:10, 476:13, 476:16, 476:19, 497:10, 504:7, 504:18, 509:2, 509:4, 509:6, 511:12, 512:20, 514:11, 518:10, 521:4, 521:7, 521:10, 521:15, 521:21, 527:24, 528:9, 528:17, 528:21, 532:13, 532:24, 538:20, 549:21, 550:5, 550:8, 553:13, 553:15, 561:8, 565:9, 568:13, 568:19, 569:2, 569:19, 569:21, 569:23, 569:25, 570:2, 570:4, 570:8, 570:12, 570:17, 570:22, 571:4, 573:5, 574:9, 574:12, 574:16, 578:7, 578:9, 579:14, 580:24, 582:3, 582:5, 582:10, 582:19, 582:23, 583:5, 589:6, 589:9, 589:18, 591:24, 593:4, 593:6, 594:4, 594:20, 594:25, 595:4, 595:7, 595:14, 595:19, 595:25, 597:19, 598:5, 598:9, 598:18, 598:20, 598:24, 599:22, 600:1, 600:6, 600:17, 600:21, 601:12, 601:15, 601:22, 601:25, 602:4, 602:8, 602:14, 602:16, 602:20, 609:13, 610:1, 610:3, 611:22, 612:10, 612:14, 613:1, 613:6, 613:12,</p>
---	---	---	---	--	---

<p>613:18, 617:16, 617:23, 618:9, 618:11, 618:16, 618:23, 619:1, 619:5, 620:13, 620:23, 621:19, 624:5, 626:1, 626:24, 627:8, 627:13, 627:25, 628:6, 629:4, 629:13, 631:10, 633:19, 636:13, 637:13, 637:16, 637:19, 637:22, 638:1, 638:13, 640:2, 642:7, 642:14</p> <p><b>deaf</b> [1] - 605:16</p> <p><b>deal</b> [12] - 372:12, 376:3, 391:24, 398:9, 421:7, 422:8, 433:3, 515:22, 517:24, 582:14, 591:3, 625:1</p> <p><b>dealing</b> [2] - 461:23, 621:2</p> <p><b>deals</b> [1] - 419:14</p> <p><b>dealt</b> [2] - 411:18, 630:1</p> <p><b>death</b> [1] - 600:22</p> <p><b>Decade</b> [1] - 347:15</p> <p><b>decades</b> [1] - 374:2</p> <p><b>decades-long</b> [1] - 374:2</p> <p><b>deceived</b> [1] - 621:13</p> <p><b>December</b> [1] - 635:11</p> <p><b>decibel</b> [4] - 381:17, 481:11, 511:9, 592:5</p> <p><b>decibels</b> [11] - 375:24, 380:25, 387:5, 480:24, 481:8, 481:17, 495:14, 501:6, 501:7, 514:24, 515:19</p> <p><b>decide</b> [6] - 355:22, 394:4, 403:20, 555:9, 623:10, 640:11</p> <p><b>decided</b> [2] - 410:5, 615:21</p> <p><b>decides</b> [1] - 487:14</p> <p><b>deciding</b> [1] - 632:3</p> <p><b>decision</b> [3] - 630:13, 640:18, 641:9</p> <p><b>decisions</b> [1] - 445:25</p> <p><b>declining</b> [1] - 437:18</p> <p><b>decommissioned</b> [1] - 439:16</p> <p><b>Decommissioning</b> [1] - 343:16</p> <p><b>decommissioning</b> [3]</p>	<p>- 438:16, 439:14, 472:16</p> <p><b>decor</b> [1] - 622:2</p> <p><b>dedication</b> [1] - 446:9</p> <p><b>deduce</b> [1] - 540:20</p> <p><b>deed</b> [1] - 601:4</p> <p><b>deemed</b> [1] - 412:25</p> <p><b>defense</b> [1] - 354:18</p> <p><b>defer</b> [3] - 438:22, 439:11, 439:23</p> <p><b>deference</b> [1] - 494:20</p> <p><b>deferring</b> [1] - 439:22</p> <p><b>define</b> [1] - 452:5</p> <p><b>definitely</b> [3] - 448:16, 606:25, 611:6</p> <p><b>definition</b> [4] - 388:16, 448:8, 450:8, 477:21</p> <p><b>degree</b> [6] - 430:3, 430:4, 547:17, 571:24, 572:3, 626:3</p> <p><b>degrees</b> [3] - 426:15, 489:6, 489:7</p> <p><b>Deguchi</b> [1] - 342:14</p> <p><b>delay</b> [1] - 634:14</p> <p><b>Delmont</b> [1] - 571:16</p> <p><b>demand</b> [1] - 521:1</p> <p><b>demonstrated</b> [1] - 364:2</p> <p><b>demonstrative</b> [1] - 613:10</p> <p><b>den</b> [1] - 342:3</p> <p><b>Denholm</b> [1] - 571:21</p> <p><b>denied</b> [1] - 628:14</p> <p><b>Denmark</b> [1] - 341:24</p> <p><b>Dennis</b> [8] - 407:10, 407:21, 408:2, 408:4, 408:8, 408:18, 409:17</p> <p><b>dentist</b> [1] - 575:12</p> <p><b>deny</b> [1] - 434:17</p> <p><b>Department</b> [3] - 341:14, 357:19, 361:24</p> <p><b>department</b> [3] - 357:20, 361:25, 615:5</p> <p><b>Departments</b> [1] - 341:10</p> <p><b>depended</b> [1] - 485:1</p> <p><b>dependent</b> [2] - 480:21, 535:23</p> <p><b>depth</b> [1] - 464:7</p> <p><b>deputy</b> [3] - 630:17, 631:1, 631:5</p> <p><b>Derived</b> [1] - 343:4</p> <p><b>describe</b> [10] - 393:11, 401:23, 402:10, 419:25, 490:16, 490:17, 506:9, 527:5, 588:5, 636:19</p>	<p><b>described</b> [5] - 441:23, 489:21, 492:10, 576:18, 587:7</p> <p><b>describing</b> [2] - 490:11, 627:19</p> <p><b>description</b> [5] - 385:11, 391:25, 515:25, 605:15, 608:15</p> <p><b>Design</b> [1] - 349:6</p> <p><b>design</b> [2] - 397:6, 567:8</p> <p><b>designated</b> [5] - 405:21, 449:25, 450:13, 450:20, 451:3</p> <p><b>designation</b> [1] - 450:14</p> <p><b>designed</b> [1] - 558:20</p> <p><b>desirable</b> [1] - 412:25</p> <p><b>desk</b> [1] - 367:10</p> <p><b>desktop</b> [1] - 447:12</p> <p><b>desktop-based</b> [1] - 447:12</p> <p><b>detached</b> [1] - 533:16</p> <p><b>detail</b> [3] - 382:2, 414:4, 455:3</p> <p><b>details</b> [4] - 353:11, 354:1, 459:8, 496:10</p> <p><b>detect</b> [6] - 374:9, 374:14, 374:17, 544:3, 544:19, 558:4</p> <p><b>detected</b> [1] - 558:17</p> <p><b>detecting</b> [1] - 550:15</p> <p><b>detection</b> [19] - 524:23, 532:10, 533:1, 533:2, 539:3, 540:10, 540:12, 545:5, 546:14, 546:17, 547:7, 555:16, 556:2, 556:4, 556:9, 556:11, 556:19, 556:23, 565:3</p> <p><b>detects</b> [4] - 525:3, 544:18, 556:23, 558:8</p> <p><b>Determination</b> [1] - 343:8</p> <p><b>determine</b> [4] - 357:7, 504:25, 513:2, 517:11</p> <p><b>determined</b> [1] - 373:1</p> <p><b>determines</b> [1] - 551:13</p> <p><b>determining</b> [3] - 438:8, 508:12, 627:5</p> <p><b>devastating</b> [2] - 621:11, 621:21</p>	<p><b>develop</b> [1] - 512:2</p> <p><b>developed</b> [2] - 458:16, 635:5</p> <p><b>developer</b> [8] - 434:1, 434:5, 628:11, 628:17, 632:6, 635:1, 635:4, 636:2</p> <p><b>developers</b> [7] - 426:7, 427:3, 621:14, 621:15, 623:20, 626:7, 628:25</p> <p><b>developers'</b> [1] - 626:9</p> <p><b>developing</b> [3] - 395:6, 459:7, 494:8</p> <p><b>development</b> [8] - 395:10, 413:1, 526:9, 555:15, 555:17, 556:5, 623:17, 635:21</p> <p><b>device</b> [8] - 385:1, 385:8, 385:14, 385:24, 596:12, 605:11, 605:15, 606:3</p> <p><b>device-assisted</b> [1] - 385:24</p> <p><b>devices</b> [2] - 384:25, 607:25</p> <p><b>diagnosed</b> [1] - 574:17</p> <p><b>diagnosing</b> [2] - 378:25, 379:6</p> <p><b>diagnosis</b> [2] - 352:17, 574:15</p> <p><b>dial</b> [2] - 385:9, 385:12</p> <p><b>dialogue</b> [1] - 466:4</p> <p><b>diameter</b> [10] - 526:14, 529:6, 531:14, 554:1, 554:4, 559:2, 559:7, 559:11, 560:25, 578:5</p> <p><b>diameter's</b> [1] - 529:7</p> <p><b>die</b> [2] - 372:13, 488:11</p> <p><b>died</b> [1] - 576:23</p> <p><b>differ</b> [2] - 455:6, 545:19</p> <p><b>differate</b> [1] - 383:9</p> <p><b>difference</b> [11] - 384:10, 396:12, 454:2, 461:9, 465:22, 511:8, 511:9, 514:20, 520:3, 567:21, 578:23</p> <p><b>differences</b> [5] - 389:21, 390:8, 435:21, 436:7, 436:8</p>	<p><b>different</b> [59] - 362:18,1 4 363:17, 383:12, 384:5, 384:6, 384:9, 385:23, 386:15, 388:11, 389:10, 389:15, 389:16, 389:18, 390:4, 404:24, 417:19, 482:15, 482:24, 484:20, 484:21, 489:3, 493:19, 495:8, 495:9, 496:17, 496:18, 496:20, 498:17, 505:2, 505:5, 507:5, 510:13, 511:2, 516:9, 516:10, 516:16, 525:18, 532:21, 536:18, 541:6, 541:7, 551:7, 554:21, 562:4, 574:1, 587:1, 604:11, 615:8, 623:19, 626:15, 629:21, 635:17, 639:3, 641:17</p> <p><b>differential</b> [4] - 517:5, 517:10, 517:14, 547:1</p> <p><b>differentials</b> [1] - 518:1</p> <p><b>differently</b> [7] - 369:24, 383:4, 385:7, 386:2, 401:6, 482:14, 482:19</p> <p><b>differing</b> [1] - 368:15</p> <p><b>difficult</b> [3] - 513:24, 575:16, 577:19</p> <p><b>difficulties</b> [1] - 375:6</p> <p><b>difficulty</b> [1] - 370:3</p> <p><b>digging</b> [1] - 616:15</p> <p><b>diminish</b> [1] - 506:16</p> <p><b>diminished</b> [1] - 506:15</p> <p><b>dioxide</b> [1] - 371:23</p> <p><b>Diplomats</b> [1] - 342:17</p> <p><b>direct</b> [10] - 351:6, 351:23, 356:11, 360:6, 367:1, 369:5, 438:5, 446:11, 529:3, 577:23</p> <p><b>Direct</b> [51] - 333:4, 333:11, 333:16, 333:21, 334:4, 334:8, 334:11, 334:19, 335:4, 335:10, 335:15, 335:20, 336:4, 336:9, 336:13, 336:16, 337:4,</p>
---	--	--	--	--

<p>337:12, 337:17, 337:20, 338:4, 338:8, 338:13, 338:17, 338:21, 339:4, 339:11, 340:3, 340:7, 343:6, 343:9, 343:10, 343:11, 343:14, 343:17, 343:18, 343:22, 430:15, 430:20, 431:14, 446:11, 473:12, 473:15, 489:16, 523:3, 523:23, 532:22, 553:21, 602:9, 618:24, 621:4</p> <p><b>DIRECT</b> [4] - 392:14, 429:11, 473:1, 522:17</p> <p><b>directing</b> [1] - 471:15</p> <p><b>direction</b> [8] - 459:21, 459:22, 509:16, 513:7, 513:10, 513:20, 577:16, 581:3</p> <p><b>directions</b> [2] - 448:1, 513:15</p> <p><b>directly</b> [8] - 453:24, 462:21, 468:12, 488:1, 527:7, 581:12, 584:1, 603:19</p> <p><b>director</b> [1] - 494:2</p> <p><b>dirt</b> [2] - 499:24, 572:8</p> <p><b>disagree</b> [9] - 367:6, 369:3, 369:7, 369:9, 374:8, 461:10, 461:11, 538:13, 538:23</p> <p><b>disagreed</b> [1] - 502:8</p> <p><b>disappointed</b> [1] - 594:12</p> <p><b>discern</b> [1] - 373:24</p> <p><b>Disclosure</b> [1] - 345:3</p> <p><b>discomfort</b> [3] - 466:16, 467:6, 467:8</p> <p><b>discredit</b> [1] - 354:5</p> <p><b>discrepancy</b> [2] - 601:16, 601:25</p> <p><b>discuss</b> [5] - 412:8, 433:21, 444:8, 472:20, 475:8</p> <p><b>discussed</b> [6] - 417:23, 418:21, 422:17, 474:17, 476:2, 610:7</p> <p><b>discussing</b> [14] - 360:9, 360:11, 367:4, 376:12, 414:6, 453:25,</p>	<p>459:1, 463:10, 465:24, 466:6, 468:11, 483:9, 618:19, 636:1</p> <p><b>Discussion</b> [6] - 365:15, 406:21, 410:20, 476:15, 509:22, 603:14</p> <p><b>discussion</b> [10] - 351:22, 411:5, 411:9, 425:15, 440:9, 443:12, 444:8, 459:1, 502:15, 517:15</p> <p><b>discussions</b> [4] - 354:14, 411:2, 415:1, 438:11</p> <p><b>Disease</b> [1] - 348:23</p> <p><b>dishonest</b> [1] - 632:4</p> <p><b>dislike</b> [1] - 403:3</p> <p><b>disparaging</b> [1] - 538:19</p> <p><b>displeased</b> [1] - 403:16</p> <p><b>displeasure</b> [2] - 403:1, 403:12</p> <p><b>dispute</b> [1] - 534:17</p> <p><b>disrupt</b> [1] - 374:18</p> <p><b>disrupted</b> [1] - 403:9</p> <p><b>disruption</b> [9] - 359:15, 360:24, 361:7, 361:11, 363:9, 363:24, 364:6, 364:8, 364:19</p> <p><b>dissatisfied</b> [1] - 405:22</p> <p><b>distal</b> [1] - 588:21</p> <p><b>Distance</b> [1] - 346:22</p> <p><b>distance</b> [28] - 381:22, 498:18, 506:10, 506:16, 512:3, 513:5, 548:4, 551:11, 551:13, 551:14, 554:5, 554:6, 554:17, 554:19, 555:2, 556:8, 561:2, 561:3, 563:10, 563:18, 568:23, 568:25, 588:11, 590:4, 590:7, 590:23, 591:6, 633:15</p> <p><b>distances</b> [6] - 506:17, 529:9, 529:24, 533:16, 533:24, 538:9</p> <p><b>distant</b> [1] - 576:20</p> <p><b>distinction</b> [3] - 482:9, 483:6, 487:24</p> <p><b>distinguished</b> [1] -</p>	<p>451:12</p> <p><b>Distortion</b> [1] - 342:18</p> <p><b>distracted</b> [1] - 374:10</p> <p><b>distribution</b> [1] - 488:20</p> <p><b>district</b> [1] - 615:14</p> <p><b>distrust</b> [1] - 629:18</p> <p><b>disturb</b> [2] - 359:24, 622:7</p> <p><b>disturbance</b> [11] - 356:22, 359:22, 360:5, 360:10, 360:14, 361:3, 364:11, 364:12, 365:19, 365:20, 366:18</p> <p><b>disturbances</b> [1] - 365:24</p> <p><b>disturbed</b> [1] - 360:21</p> <p><b>Div</b> [1] - 341:5</p> <p><b>divide</b> [1] - 623:25</p> <p><b>divided</b> [2] - 624:10, 639:9</p> <p><b>division</b> [1] - 403:17</p> <p><b>divulging</b> [1] - 527:4</p> <p><b>dizzy</b> [2] - 573:17, 575:2</p> <p><b>DO</b> [1] - 643:8</p> <p><b>docket</b> [2] - 526:24, 532:9</p> <p><b>doctor</b> [7] - 351:15, 370:19, 374:21, 573:23, 574:6, 574:8, 593:23</p> <p><b>doctors</b> [1] - 354:19</p> <p><b>document</b> [26] - 367:14, 367:15, 368:2, 368:18, 381:6, 433:9, 433:15, 433:17, 434:20, 448:9, 449:19, 453:23, 454:18, 456:20, 502:22, 525:21, 526:2, 526:6, 526:12, 529:19, 532:11, 533:15, 533:18, 565:25, 590:20, 603:4</p> <p><b>documentation</b> [1] - 456:13</p> <p><b>documents</b> [6] - 449:21, 522:6, 522:10, 522:14, 532:19, 532:21</p> <p><b>DOE</b> [1] - 444:20</p> <p><b>dogs</b> [1] - 386:15</p> <p><b>dollars</b> [2] - 396:13, 396:15</p> <p><b>done</b> [34] - 357:10,</p>	<p>371:3, 371:4, 394:12, 407:17, 420:2, 420:6, 426:8, 426:18, 431:15, 431:19, 431:20, 465:25, 474:18, 500:1, 501:20, 507:20, 511:21, 511:23, 511:24, 512:1, 516:2, 517:20, 525:11, 570:23, 571:12, 593:11, 602:13, 605:9, 606:14, 608:3, 625:1, 638:22</p> <p><b>doors</b> [2] - 396:20, 396:25</p> <p><b>dot</b> [7] - 408:16, 408:17, 583:22, 584:1, 603:16, 603:19, 614:11</p> <p><b>dots</b> [2] - 510:10, 580:12</p> <p><b>double</b> [2] - 374:12, 527:25</p> <p><b>double-check</b> [1] - 527:25</p> <p><b>doubling</b> [1] - 520:7</p> <p><b>down</b> [82] - 374:23, 391:18, 392:5, 393:8, 394:19, 396:2, 397:3, 398:13, 406:20, 414:15, 415:3, 420:25, 421:1, 432:8, 445:9, 445:12, 457:8, 457:19, 458:12, 458:14, 458:18, 458:24, 461:6, 462:1, 472:6, 515:22, 515:23, 516:24, 516:25, 519:15, 521:11, 530:11, 534:6, 539:13, 539:17, 539:19, 539:20, 540:21, 541:25, 542:3, 544:21, 545:6, 546:4, 546:15, 546:18, 547:3, 547:18, 550:20, 551:4, 552:2, 552:3, 552:7, 552:19, 552:24, 556:18, 556:20, 556:25, 558:1, 558:5, 558:12, 558:13, 560:14, 561:24, 566:19,</p>	<p>569:11, 570:5, 15 574:14, 576:23, 584:12, 586:11, 589:14, 591:25, 598:12, 613:2, 615:21, 620:24, 624:5, 627:19, 638:13, 640:5</p> <p><b>downhill</b> [2] - 414:19, 615:20</p> <p><b>downs</b> [1] - 606:20</p> <p><b>downstream</b> [1] - 449:1</p> <p><b>downtown</b> [3] - 549:4, 549:7, 549:8</p> <p><b>downwind</b> [1] - 513:7</p> <p><b>dozens</b> [1] - 363:17</p> <p><b>DR</b> [4] - 333:10, 334:10, 346:10, 393:4</p> <p><b>Dr</b> [14] - 349:9, 349:10, 351:6, 351:9, 367:13, 371:15, 459:11, 462:13, 493:25, 494:18, 517:16, 571:6, 571:7, 573:24</p> <p><b>Draft</b> [1] - 348:16</p> <p><b>drafted</b> [1] - 368:2</p> <p><b>drainage</b> [1] - 578:25</p> <p><b>dramatically</b> [1] - 564:5</p> <p><b>drastic</b> [1] - 402:5</p> <p><b>drawing</b> [2] - 578:10, 578:12</p> <p><b>drawn</b> [1] - 362:14</p> <p><b>drinking</b> [3] - 373:20, 373:25, 374:2</p> <p><b>drive</b> [6] - 397:24, 405:17, 420:13, 424:19, 592:15, 629:22</p> <p><b>drives</b> [1] - 422:15</p> <p><b>driving</b> [2] - 599:13, 621:23</p> <p><b>drop</b> [1] - 396:10</p> <p><b>dropped</b> [2] - 362:25, 519:15</p> <p><b>DRs</b> [10] - 345:4, 345:5, 345:8, 345:11, 348:17, 348:18, 348:19, 348:20, 348:21, 348:25</p> <p><b>drug</b> [1] - 574:19</p> <p><b>Drugs</b> [1] - 343:5</p> <p><b>dry</b> [3] - 398:3, 449:14, 579:1</p> <p><b>ducks</b> [1] - 622:6</p> <p><b>due</b> [6] - 389:7,</p>
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443:10, 444:24, 445:1, 452:2, 491:13 <b>dug</b> [1] - 365:4 <b>duly</b> [8] - 392:12, 429:9, 472:23, 522:2, 571:2, 595:23, 613:16, 643:8 <b>duly-appointed</b> [1] - 643:8 <b>duplicative</b> [1] - 456:2 <b>duration</b> [1] - 482:10 <b>durations</b> [1] - 480:15 <b>during</b> [48] - 351:19, 351:22, 432:1, 432:11, 433:17, 453:9, 453:16, 456:22, 460:25, 461:6, 462:18, 464:12, 465:19, 466:17, 466:25, 468:11, 470:23, 486:20, 488:5, 488:8, 490:22, 491:5, 491:6, 496:11, 496:12, 497:14, 499:17, 507:13, 508:7, 508:8, 519:23, 525:13, 529:3, 553:20, 562:8, 564:12, 564:16, 567:5, 569:8, 575:15, 576:22, 608:7, 634:21, 637:7, 637:9, 639:4, 640:22 <b>DUSTIN</b> [1] - 334:18 <b>Dustin</b> [3] - 392:10, 392:11, 392:19	596:10, 599:7, 605:20, 606:2, 606:4, 606:8, 606:9, 607:7, 607:14 <b>ear's</b> [2] - 606:8, 606:9 <b>early</b> [3] - 460:13, 484:6, 637:11 <b>earned</b> [1] - 571:23 <b>ears</b> [2] - 391:12, 391:14 <b>Earth</b> [1] - 348:14 <b>ease</b> [1] - 394:21 <b>Easement</b> [1] - 348:13 <b>easements</b> [1] - 624:23 <b>easier</b> [2] - 489:2, 597:8 <b>easiest</b> [1] - 626:3 <b>easily</b> [4] - 451:12, 496:8, 509:19, 516:19 <b>easing</b> [1] - 414:12 <b>east</b> [6] - 399:15, 464:5, 578:4, 579:1, 581:2, 614:6 <b>East</b> [1] - 350:3 <b>east-northeast</b> [1] - 578:4 <b>easy</b> [2] - 387:17, 501:14 <b>echo</b> [1] - 581:1 <b>echoes</b> [1] - 598:14 <b>echoing</b> [1] - 598:17 <b>Economics</b> [1] - 344:14 <b>economics</b> [1] - 572:15 <b>eddies</b> [1] - 489:3 <b>edge</b> [3] - 578:21, 578:24, 584:14 <b>edgy</b> [1] - 588:4 <b>educate</b> [4] - 623:24, 628:16, 629:1, 631:25 <b>education</b> [9] - 397:17, 398:14, 422:10, 422:23, 425:18, 425:23, 430:1, 522:22, 594:9 <b>educational</b> [2] - 422:19, 593:10 <b>EDWARDS</b> [19] - 371:12, 371:14, 374:20, 384:20, 384:23, 386:9, 438:2, 439:25, 440:3, 440:16, 445:6, 471:7, 471:10, 472:4, 472:14, 509:7,	509:9, 511:10, 521:9 <b>Edwards</b> [19] - 332:23, 333:23, 333:25, 334:6, 334:13, 334:16, 335:5, 335:8, 335:11, 337:4, 337:7, 337:13, 337:14, 339:4, 339:6, 339:13, 454:15, 464:19, 464:25 <b>Edwards's</b> [2] - 375:15, 459:6 <b>effect</b> [13] - 365:16, 367:1, 369:5, 396:7, 396:8, 400:9, 444:10, 448:25, 506:18, 544:24, 574:20, 622:22, 633:12 <b>effectively</b> [1] - 362:3 <b>Effects</b> [10] - 340:19, 340:22, 342:5, 343:3, 343:5, 344:12, 344:16, 346:17, 347:10, 347:12 <b>effects</b> [21] - 352:23, 352:25, 354:16, 355:3, 355:5, 355:8, 357:1, 358:2, 370:5, 379:23, 380:9, 386:22, 388:20, 518:21, 527:16, 573:3, 573:9, 591:4, 592:22, 607:14, 623:7 <b>efficient</b> [1] - 521:19 <b>effort</b> [2] - 457:7, 465:10 <b>EIA</b> [1] - 455:25 <b>eight</b> [4] - 574:21, 575:24, 600:14, 600:23 <b>eight-mile</b> [2] - 600:14, 600:23 <b>eighth</b> [1] - 563:14 <b>EIS</b> [10] - 432:15, 440:19, 440:23, 441:2, 441:6, 452:13, 456:4, 456:8, 456:14, 471:25 <b>either</b> [17] - 352:12, 364:3, 365:5, 368:16, 379:2, 387:23, 435:2, 450:24, 508:15, 518:8, 536:17, 552:14, 571:13,	576:12, 633:4, 637:1, 639:24 <b>Eja</b> [1] - 342:10 <b>EL18-026</b> [3] - 332:2, 351:3, 476:20 <b>elaborate</b> [6] - 382:2, 394:10, 432:3, 441:21, 580:22, 592:17 <b>elaborated</b> [1] - 372:25 <b>elders</b> [1] - 444:6 <b>electric</b> [3] - 417:14, 418:1, 550:24 <b>Electric</b> [3] - 525:14, 551:14, 568:24 <b>electrical</b> [1] - 527:14 <b>Electricity</b> [1] - 341:6 <b>electricity</b> [1] - 415:9 <b>electronic</b> [1] - 564:8 <b>element</b> [1] - 441:13 <b>elementary</b> [1] - 510:16 <b>elements</b> [1] - 503:13 <b>elevation</b> [4] - 409:12, 409:13, 578:23, 581:3 <b>elicit</b> [4] - 380:2, 389:12, 389:16, 390:13 <b>Elicit</b> [1] - 343:5 <b>elicited</b> [2] - 386:13, 389:6 <b>elicits</b> [2] - 391:11, 391:22 <b>eligible</b> [3] - 442:11, 442:13, 443:5 <b>eliminate</b> [2] - 425:24, 532:17 <b>eliminating</b> [1] - 486:13 <b>ELLENBOGEN</b> [1] - 334:10 <b>Ellenbogen</b> [5] - 344:24, 351:6, 351:9, 371:15, 517:16 <b>Emissions</b> [1] - 347:11 <b>emitted</b> [1] - 488:25 <b>emotion</b> [1] - 426:25 <b>emphysema</b> [1] - 372:13 <b>empirical</b> [1] - 369:13 <b>Empirical</b> [1] - 344:17 <b>employee</b> [1] - 434:23 <b>EMS</b> [1] - 524:17 <b>Enck</b> [1] - 342:23 <b>encounter</b> [1] - 579:9 <b>encountered</b> [1] -	355:11 <b>end</b> [15] - 368:20, 374:23, 377:1, 403:25, 444:1, 472:18, 495:14, 499:16, 521:18, 521:19, 559:17, 564:19, 573:15, 588:21, 601:6 <b>endangered</b> [3] - 449:23, 451:25, 464:21 <b>ended</b> [6] - 500:20, 596:8, 596:9, 596:11, 596:12, 598:22 <b>enemy</b> [1] - 564:14 <b>ENERGY</b> [1] - 332:3 <b>energy</b> [17] - 351:4, 375:20, 376:6, 376:8, 379:22, 380:1, 381:5, 381:11, 381:20, 382:8, 390:12, 390:19, 391:5, 391:10, 430:8, 440:23, 591:4 <b>Energy</b> [7] - 341:4, 341:5, 341:17, 341:23, 348:12, 445:2, 471:25 <b>enforcement</b> [1] - 524:17 <b>engage</b> [1] - 352:15 <b>engaged</b> [3] - 468:15, 484:4, 484:17 <b>engagement</b> [2] - 417:7, 420:15 <b>engineering</b> [3] - 440:9, 477:17, 522:24 <b>engineers</b> [2] - 409:12, 410:6 <b>enjoy</b> [1] - 614:19 <b>enjoyment</b> [1] - 625:4 <b>enlighten</b> [1] - 425:22 <b>ensure</b> [1] - 440:13 <b>enter</b> [1] - 466:14 <b>enterprise</b> [1] - 466:24 <b>Entice</b> [1] - 348:11 <b>entire</b> [17] - 375:12, 439:16, 454:19, 455:22, 455:24, 469:11, 498:25, 515:19, 534:4, 534:13, 536:6, 552:5, 556:9, 569:9, 576:8, 576:11, 576:19 <b>entirely</b> [3] - 390:4,
<b>E</b>				
<b>e-mail</b> [3] - 588:2, 595:8, 624:15 <b>e-mails</b> [1] - 631:22 <b>EA</b> [6] - 432:16, 454:25, 455:1, 455:18, 456:11, 456:13 <b>eagle</b> [1] - 471:1 <b>eagles</b> [2] - 469:24, 470:14 <b>ear</b> [24] - 380:3, 383:14, 383:19, 384:2, 384:8, 389:6, 389:10, 389:11, 389:19, 390:6, 390:8, 390:13, 390:19, 391:5,				

446:2, 499:18 <b>entities</b> [3] - 362:5, 624:4, 635:17 <b>entitled</b> [2] - 350:2, 643:10 <b>entity</b> [3] - 543:11, 635:5, 636:10 <b>entry</b> [1] - 443:11 <b>environment</b> [4] - 446:8, 480:20, 480:23, 540:19 <b>Environment</b> [7] - 340:20, 341:16, 341:22, 342:5, 342:7, 342:16, 348:23 <b>environmental</b> [12] - 357:19, 361:25, 430:4, 431:7, 451:19, 455:6, 455:8, 455:9, 471:17, 471:22, 505:4, 540:18 <b>Environmental</b> [7] - 341:5, 341:11, 342:12, 344:13, 440:22, 471:18, 471:22 <b>EPC</b> [1] - 524:12 <b>episodes</b> [1] - 575:3 <b>equal</b> [2] - 501:12, 510:7 <b>equate</b> [1] - 557:20 <b>equipment</b> [4] - 503:2, 527:9, 527:13, 592:9 <b>err</b> [1] - 591:5 <b>escape</b> [2] - 411:7, 487:16 <b>especially</b> [6] - 491:4, 499:21, 538:25, 578:3, 581:1, 587:22 <b>essentially</b> [8] - 354:5, 494:5, 496:16, 552:5, 576:12, 577:4, 577:7, 581:8 <b>establish</b> [1] - 592:25 <b>establishing</b> [3] - 468:13, 468:22, 604:7 <b>estimate</b> [2] - 430:13, 529:16 <b>estimated</b> [1] - 465:23 <b>estimates</b> [1] - 465:20 <b>estimating</b> [1] - 493:17 <b>Et</b> [2] - 342:19, 342:23 <b>et</b> [12] - 346:17, 412:23, 413:1, 447:9, 454:4, 456:24, 498:21,	509:16, 516:18, 538:22 <b>ethically</b> [2] - 623:11, 623:12 <b>Europe</b> [1] - 348:22 <b>evaluate</b> [7] - 353:12, 353:21, 357:21, 381:2, 419:14, 443:14, 529:25 <b>evaluated</b> [2] - 352:17, 505:18 <b>evaluating</b> [7] - 442:8, 442:16, 456:14, 469:11, 469:12, 469:14, 469:15 <b>Evaluation</b> [2] - 341:21, 342:15 <b>evaluation</b> [3] - 354:12, 354:14, 373:24 <b>evaluations</b> [2] - 352:21, 353:23 <b>evening</b> [2] - 606:14, 611:25 <b>evenings</b> [1] - 576:22 <b>evenly</b> [2] - 544:23, 545:2 <b>event</b> [8] - 438:23, 465:4, 482:4, 537:13, 545:4, 551:24, 551:25, 629:11 <b>events</b> [5] - 525:13, 535:8, 537:16, 560:5, 562:8 <b>eventually</b> [1] - 571:19 <b>everywhere</b> [3] - 396:23, 423:1, 499:1 <b>evidence</b> [10] - 364:12, 369:13, 375:5, 405:25, 427:18, 446:25, 447:8, 454:11, 466:15, 574:7 <b>Evidence</b> [6] - 340:10, 340:12, 340:13, 340:16, 344:17, 347:16 <b>evolve</b> [1] - 450:18 <b>Ex</b> [53] - 340:4, 340:5, 340:6, 340:7, 340:8, 340:11, 340:14, 340:17, 340:19, 340:24, 341:3, 341:7, 341:10, 341:13, 341:16, 341:21, 341:23, 342:3, 342:7, 342:10, 342:13, 342:17, 342:19,	342:23, 343:3, 343:7, 343:7, 343:9, 343:11, 343:12, 343:14, 343:15, 343:16, 343:17, 343:18, 343:20, 343:21, 343:22, 344:3, 344:7, 344:11, 344:15, 344:18, 344:23, 344:24, 347:8, 347:8, 347:9, 347:10, 347:12, 347:13, 347:14, 347:15 <b>ex</b> [2] - 629:8, 629:14 <b>exact</b> [16] - 373:6, 399:17, 399:25, 411:22, 415:25, 433:23, 449:3, 458:15, 470:5, 484:18, 500:22, 537:10, 540:2, 543:17, 557:23, 559:15 <b>exactly</b> [14] - 406:11, 433:16, 435:1, 436:20, 466:10, 472:17, 542:16, 573:19, 578:15, 580:10, 599:21, 608:12, 618:4, 638:18 <b>exam</b> [1] - 351:23 <b>examination</b> [33] - 351:8, 351:12, 351:19, 353:4, 379:16, 398:19, 398:20, 407:2, 407:3, 432:24, 472:11, 475:18, 476:9, 476:23, 504:21, 518:10, 521:4, 528:16, 528:17, 528:23, 528:24, 529:3, 582:11, 582:19, 602:11, 602:17, 609:14, 633:20, 636:14, 637:14, 637:17, 637:20, 638:2 <b>Examination</b> [153] - 333:4, 333:4, 333:5, 333:5, 333:6, 333:6, 333:7, 333:8, 333:8, 333:9, 333:11, 333:11, 333:12, 333:12, 333:13, 333:14, 333:14,	333:16, 333:17, 333:17, 333:18, 333:18, 333:21, 333:21, 333:22, 333:22, 333:23, 333:24, 333:24, 333:25, 334:4, 334:5, 334:5, 334:6, 334:8, 334:8, 334:9, 334:11, 334:12, 334:12, 334:13, 334:13, 334:14, 334:15, 334:15, 334:16, 334:17, 334:19, 334:19, 334:20, 334:20, 334:21, 334:21, 334:22, 334:23, 334:23, 335:4, 335:4, 335:5, 335:5, 335:6, 335:7, 335:7, 335:8, 335:10, 335:10, 335:11, 335:11, 335:12, 335:13, 335:15, 335:15, 335:16, 335:16, 335:17, 335:21, 335:21, 335:22, 336:4, 336:5, 336:5, 336:9, 336:10, 336:13, 336:14, 336:14, 336:16, 336:17, 336:17, 336:18, 336:18, 336:19, 336:20, 336:20, 336:21, 337:4, 337:4, 337:5, 337:5, 337:6, 337:7, 337:7, 337:8, 337:8, 337:9, 337:12, 337:12, 337:13, 337:14, 337:14, 337:15, 337:17, 337:17, 337:18, 337:20, 337:21, 337:21, 337:22, 337:23, 338:4, 338:4, 338:5, 338:5, 338:8, 338:8, 338:9, 338:9, 338:10, 338:11, 338:13, 338:13, 338:14, 338:14, 338:17, 338:17, 338:18, 338:19, 338:21, 338:21, 338:22, 339:4, 339:4, 339:5, 339:5, 339:6, 339:7, 339:7, 339:8, 339:11, 339:11, 339:12,	339:12, 339:13 <b>EXAMINATION</b> [45] - 351:13, 370:17, 371:1, 371:13, 379:18, 380:13, 383:1, 384:22, 388:8, 392:14, 399:1, 407:4, 416:20, 417:12, 418:4, 425:1, 425:13, 427:7, 429:11, 433:4, 437:11, 438:1, 468:8, 469:8, 469:22, 471:9, 473:1, 477:1, 504:23, 509:8, 514:13, 518:16, 522:17, 529:1, 550:11, 553:18, 569:5, 583:1, 589:11, 589:20, 602:21, 609:15, 610:5, 633:23, 636:16 <b>examine</b> [4] - 474:25, 475:3, 589:7, 598:21 <b>examined</b> [3] - 377:11, 463:23, 599:4 <b>Examiner</b> [1] - 351:2 <b>example</b> [6] - 362:20, 370:2, 481:7, 483:11, 563:11, 635:20 <b>Example</b> [1] - 343:7 <b>excavator</b> [1] - 397:6 <b>exceeded</b> [4] - 486:11, 486:12, 495:17, 517:10 <b>exceeding</b> [1] - 375:23 <b>excellent</b> [2] - 593:11, 598:20 <b>except</b> [2] - 370:13, 423:15 <b>exception</b> [3] - 503:17, 522:11, 618:7 <b>excess</b> [1] - 525:3 <b>excessive</b> [1] - 380:20 <b>excited</b> [2] - 398:6, 401:14 <b>exciting</b> [1] - 548:11 <b>exclude</b> [1] - 595:1 <b>excluded</b> [1] - 573:4 <b>excuse</b> [18] - 377:22, 432:6, 452:2, 453:3, 454:14, 456:20, 457:6, 457:16,
---	---	---	--	---

<p>458:7, 461:5, 477:12, 508:4, 540:23, 562:17, 582:21, 583:13, 617:3, 623:18</p> <p><b>excused</b> [6] - 392:7, 429:4, 472:7, 570:7, 613:4, 642:6</p> <p><b>executing</b> [2] - 411:10, 411:11</p> <p><b>exhaustive</b> [2] - 371:15, 371:17</p> <p><b>exhibit</b> [26] - 367:12, 367:19, 368:5, 413:21, 435:23, 436:21, 471:11, 471:13, 479:5, 479:7, 479:11, 483:25, 523:23, 533:7, 533:11, 534:4, 574:15, 586:13, 586:23, 603:4, 604:22, 605:10, 608:15, 613:8, 613:10, 632:8</p> <p><b>Exhibit</b> [54] - 347:4, 351:18, 367:8, 407:15, 410:16, 410:21, 412:18, 433:6, 433:13, 435:18, 436:1, 436:3, 436:9, 436:10, 436:13, 436:17, 436:19, 437:5, 442:24, 470:10, 473:25, 474:22, 479:5, 479:14, 479:19, 479:21, 482:3, 483:24, 485:14, 489:17, 500:24, 504:15, 509:21, 523:6, 523:24, 525:18, 526:25, 527:1, 527:23, 531:7, 533:5, 566:15, 583:4, 585:9, 585:12, 585:25, 589:23, 602:25, 603:15, 604:5, 604:9, 605:1, 608:12, 613:10</p> <p><b>EXHIBITS</b> [13] - 340:2, 341:2, 342:2, 343:2, 344:2, 345:2, 346:2, 347:2, 347:6, 348:2, 349:2, 349:8, 349:15</p> <p><b>exhibits</b> [12] - 429:14, 475:18, 500:15, 522:8, 527:2, 571:5,</p>	<p>579:23, 594:16, 594:23, 595:1, 613:21, 633:16</p> <p><b>Exhibits</b> [8] - 347:3, 347:19, 430:18, 430:23, 431:3, 473:15, 473:23, 613:20</p> <p><b>exist</b> [3] - 410:2, 539:17, 557:8</p> <p><b>existed</b> [1] - 357:11</p> <p><b>existing</b> [3] - 357:22, 497:11, 622:15</p> <p><b>expand</b> [1] - 359:20</p> <p><b>expect</b> [17] - 383:19, 438:12, 442:2, 442:17, 449:2, 453:15, 458:19, 460:20, 460:24, 500:11, 507:23, 508:3, 517:12, 525:12, 539:25, 540:7, 576:24</p> <p><b>Expectancies</b> [1] - 343:4</p> <p><b>expectation</b> [1] - 360:20</p> <p><b>Expectations</b> [1] - 342:21</p> <p><b>expecting</b> [1] - 381:22</p> <p><b>expects</b> [1] - 471:21</p> <p><b>expensive</b> [1] - 503:2</p> <p><b>experience</b> [33] - 358:2, 370:20, 375:9, 491:21, 492:9, 492:12, 492:16, 492:19, 530:8, 534:18, 538:21, 547:19, 547:22, 548:8, 555:24, 562:7, 563:19, 563:23, 563:25, 564:4, 575:18, 594:8, 616:1, 617:18, 621:12, 623:15, 625:10, 625:14, 625:19, 628:3, 628:5, 630:12</p> <p><b>experienced</b> [5] - 553:7, 573:12, 626:13, 628:9, 633:8</p> <p><b>experiences</b> [8] - 390:3, 491:20, 492:16, 536:1, 536:3, 538:15, 549:1, 551:19</p> <p><b>experiencing</b> [4] - 355:3, 490:17, 587:8, 587:9</p>	<p><b>experiment</b> [1] - 380:7</p> <p><b>experiments</b> [1] - 357:13</p> <p><b>expert</b> [7] - 389:19, 391:14, 457:3, 515:25, 573:9, 579:11, 598:16</p> <p><b>Expert</b> [2] - 340:21, 341:13</p> <p><b>expertise</b> [2] - 518:20, 518:23</p> <p><b>experts</b> [4] - 362:8, 367:5, 369:3, 369:8</p> <p><b>explain</b> [15] - 354:8, 396:7, 413:11, 414:1, 456:18, 474:6, 484:10, 487:19, 488:9, 489:24, 498:14, 514:20, 516:15, 598:14, 605:12</p> <p><b>Explain</b> [1] - 347:10</p> <p><b>explained</b> [4] - 365:8, 413:16, 413:18, 567:25</p> <p><b>explaining</b> [2] - 352:23, 450:9</p> <p><b>explanation</b> [6] - 451:15, 547:7, 626:17, 626:18, 632:19, 639:15</p> <p><b>explanatory</b> [1] - 484:10</p> <p><b>explosions</b> [1] - 505:7</p> <p><b>exposed</b> [2] - 363:19, 582:2</p> <p><b>exposure</b> [1] - 375:13</p> <p><b>expressed</b> [1] - 532:22</p> <p><b>extend</b> [2] - 465:16, 563:4</p> <p><b>extended</b> [2] - 447:7, 572:1</p> <p><b>extensive</b> [2] - 362:17, 516:2</p> <p><b>extent</b> [8] - 396:24, 451:17, 453:11, 454:1, 508:6, 572:24, 579:11, 620:21</p> <p><b>extraneous</b> [1] - 488:10</p> <p><b>extraordinarily</b> [1] - 381:8</p> <p><b>extraordinary</b> [5] - 375:20, 376:2, 376:5, 376:8, 379:22</p> <p><b>extreme</b> [3] - 515:2, 534:14, 569:13</p> <p><b>extremely</b> [1] - 568:24</p>	<p><b>eye</b> [2] - 396:4, 616:12</p> <p><b>eyes</b> [5] - 522:12, 546:11, 573:18, 611:19, 630:22</p>	<p><b>F</b></p> <p><b>FAA</b> [1] - 343:8</p> <p><b>faced</b> [1] - 578:5</p> <p><b>facilities</b> [7] - 441:25, 442:2, 442:15, 442:17, 444:11, 444:19, 451:17</p> <p><b>facility</b> [4] - 457:18, 462:7, 511:25, 600:2</p> <p><b>FACILITY</b> [1] - 332:3</p> <p><b>fact</b> [13] - 355:22, 396:17, 403:4, 428:2, 428:13, 428:16, 431:20, 449:22, 457:10, 463:6, 581:4, 588:6, 619:22</p> <p><b>factor</b> [11] - 453:7, 498:6, 498:8, 498:9, 498:11, 498:15, 498:16, 499:9, 499:19, 500:2, 520:12</p> <p><b>factors</b> [2] - 456:10, 456:15</p> <p><b>factory</b> [1] - 397:2</p> <p><b>facts</b> [1] - 405:24</p> <p><b>fail</b> [1] - 556:12</p> <p><b>fails</b> [2] - 556:16, 556:17</p> <p><b>fair</b> [10] - 354:19, 362:23, 367:2, 368:13, 428:12, 428:14, 442:20, 443:16, 444:13, 532:20</p> <p><b>fairly</b> [3] - 399:24, 414:17, 485:2</p> <p><b>Fairview</b> [1] - 348:4</p> <p><b>fall</b> [7] - 432:12, 453:2, 453:4, 456:7, 552:24, 588:1, 641:21</p> <p><b>fallen</b> [1] - 552:19</p> <p><b>falls</b> [1] - 587:24</p> <p><b>Falls</b> [10] - 396:10, 420:15, 549:2, 549:3, 549:4, 549:6, 549:7, 549:11, 549:18</p> <p><b>false</b> [1] - 624:25</p> <p><b>falsely</b> [1] - 537:12</p> <p><b>familiar</b> [26] - 353:3, 368:12, 374:4,</p>	<p>374:7, 385:1, 18 432:13, 435:8, 455:7, 457:20, 457:24, 460:17, 462:23, 467:17, 478:22, 494:1, 501:19, 516:4, 524:5, 524:18, 526:6, 534:22, 534:23, 574:10, 580:25, 590:19</p> <p><b>families</b> [7] - 396:9, 396:11, 396:18, 415:23, 416:2, 416:5, 416:8</p> <p><b>family</b> [10] - 393:18, 393:23, 408:20, 409:2, 409:20, 416:11, 424:18, 572:6, 587:14, 607:4</p> <p><b>far</b> [18] - 358:4, 372:18, 395:12, 397:9, 397:14, 401:21, 430:6, 431:22, 468:22, 485:13, 492:1, 492:2, 529:16, 551:19, 573:13, 575:20, 594:8, 609:19</p> <p><b>farm</b> [47] - 353:10, 354:2, 370:21, 380:20, 393:14, 393:16, 393:18, 397:3, 404:9, 404:13, 404:15, 428:18, 473:7, 491:24, 492:6, 492:22, 493:7, 499:14, 507:22, 516:13, 535:9, 552:6, 552:15, 553:4, 553:8, 575:20, 578:5, 580:12, 580:13, 581:16, 581:17, 583:19, 583:20, 584:9, 597:3, 599:23, 607:2, 607:3, 614:9, 616:13, 616:24, 621:9, 622:2, 622:25, 640:10, 640:11</p> <p><b>Farm</b> [9] - 342:8, 347:11, 508:5, 508:8, 577:10, 578:21, 614:5, 614:16, 620:11</p> <p><b>farm's</b> [1] - 500:7</p>
---	---	---	---	---	--

<b>farmed</b> <sup>[1]</sup> - 597:24 <b>farmland</b> <sup>[1]</sup> - 499:14 <b>farms</b> <sup>[7]</sup> - 355:9, 357:18, 363:10, 489:10, 489:14, 500:4, 625:8 <b>Farms</b> <sup>[6]</sup> - 340:13, 340:16, 340:19, 340:23, 347:8, 347:9 <b>fashion</b> <sup>[1]</sup> - 641:20 <b>fashioned</b> <sup>[1]</sup> - 592:12 <b>fast</b> <sup>[14]</sup> - 511:17, 539:15, 539:23, 540:1, 540:9, 545:11, 547:13, 557:10, 557:13, 557:21, 558:7, 563:12, 567:10 <b>faster</b> <sup>[3]</sup> - 487:7, 546:22, 546:23 <b>fastest</b> <sup>[1]</sup> - 540:5 <b>fatalities</b> <sup>[5]</sup> - 462:17, 463:12, 465:19, 465:23 <b>fatality</b> <sup>[1]</sup> - 466:22 <b>father</b> <sup>[3]</sup> - 394:1, 417:21, 561:22 <b>father's</b> <sup>[3]</sup> - 395:24, 407:9, 408:18 <b>fathom</b> <sup>[1]</sup> - 622:23 <b>fatigued</b> <sup>[1]</sup> - 587:16 <b>favor</b> <sup>[1]</sup> - 427:15 <b>FCC</b> <sup>[2]</sup> - 431:18, 431:19 <b>fear</b> <sup>[12]</sup> - 421:25, 422:6, 422:15, 422:20, 425:16, 425:17, 425:19, 425:22, 425:24, 426:23, 426:25, 607:7 <b>feather</b> <sup>[1]</sup> - 558:11 <b>feature</b> <sup>[1]</sup> - 544:15 <b>Features</b> <sup>[1]</sup> - 343:5 <b>February</b> <sup>[1]</sup> - 596:7 <b>federal</b> <sup>[3]</sup> - 451:24, 454:20, 455:20 <b>Federal</b> <sup>[3]</sup> - 341:17, 342:6, 343:7 <b>federally</b> <sup>[1]</sup> - 449:23 <b>Feed</b> <sup>[1]</sup> - 343:4 <b>feelings</b> <sup>[1]</sup> - 365:8 <b>feet</b> <sup>[32]</sup> - 444:22, 448:13, 488:16, 513:25, 526:15, 529:6, 548:1, 548:3, 548:7, 549:1, 549:12, 549:25, 552:4, 554:7, 559:6, 559:9, 559:12, 560:8, 560:12, 560:15, 560:17, 560:21, 563:5, 578:23, 581:12, 585:6, 590:12, 593:19, 628:18 <b>fell</b> <sup>[2]</sup> - 560:8, 560:14 <b>fellow</b> <sup>[2]</sup> - 461:4, 627:11 <b>felt</b> <sup>[4]</sup> - 371:22, 404:12, 630:2, 630:24 <b>fence</b> <sup>[3]</sup> - 576:7, 576:9, 576:12 <b>fences</b> <sup>[5]</sup> - 552:1, 576:5, 576:10, 589:2, 620:2 <b>fertile</b> <sup>[1]</sup> - 499:13 <b>few</b> <sup>[18]</sup> - 399:5, 403:15, 404:16, 412:10, 426:15, 454:5, 454:11, 463:20, 490:14, 490:23, 514:24, 575:7, 582:20, 593:19, 601:10, 619:15, 628:14, 628:18 <b>fewer</b> <sup>[1]</sup> - 470:23 <b>fiberoptic</b> <sup>[1]</sup> - 550:21 <b>FIEGEN</b> <sup>[56]</sup> - 332:10, 366:11, 366:19, 376:24, 377:5, 377:9, 377:15, 377:18, 420:12, 420:17, 420:20, 421:4, 421:9, 421:12, 421:15, 421:18, 422:17, 423:5, 423:12, 423:19, 424:1, 424:4, 424:7, 424:17, 424:22, 446:21, 511:14, 511:16, 511:22, 512:6, 512:10, 512:18, 565:11, 565:14, 565:19, 566:2, 566:10, 566:14, 566:18, 566:21, 566:23, 567:4, 568:1, 570:15, 570:19, 593:5, 612:15, 612:21, 612:24, 627:21, 637:25, 638:14, 639:7, 639:14, 639:18, 639:21 <b>Fiegen</b> <sup>[13]</sup> - 374:23, 376:23, 388:2, 420:11, 425:16, 445:13, 467:9, 511:13, 565:9, 593:4, 612:14, 627:21, 638:13 <b>Fiegen's</b> <sup>[1]</sup> - 427:9 <b>Field</b> <sup>[1]</sup> - 343:21 <b>field</b> <sup>[6]</sup> - 357:15, 441:12, 442:7, 494:16, 504:10, 608:8 <b>Fifth</b> <sup>[1]</sup> - 345:4 <b>figure</b> <sup>[7]</sup> - 537:9, 562:20, 596:11, 597:14, 601:11, 639:23, 639:24 <b>Figure</b> <sup>[2]</sup> - 346:7, 604:21 <b>figured</b> <sup>[3]</sup> - 394:21, 477:22, 600:5 <b>figures</b> <sup>[1]</sup> - 608:17 <b>figuring</b> <sup>[1]</sup> - 563:7 <b>file</b> <sup>[7]</sup> - 430:15, 430:20, 430:25, 473:12, 473:19, 523:3, 523:5 <b>filed</b> <sup>[2]</sup> - 526:24, 632:6 <b>filing</b> <sup>[1]</sup> - 631:19 <b>fill</b> <sup>[1]</sup> - 415:13 <b>filling</b> <sup>[1]</sup> - 456:1 <b>filter</b> <sup>[1]</sup> - 632:2 <b>final</b> <sup>[2]</sup> - 369:2, 558:5 <b>Final</b> <sup>[1]</sup> - 340:14 <b>finance</b> <sup>[1]</sup> - 625:8 <b>financial</b> <sup>[2]</sup> - 439:10, 592:8 <b>financials</b> <sup>[1]</sup> - 562:16 <b>financing</b> <sup>[1]</sup> - 413:1 <b>findings</b> <sup>[7]</sup> - 362:18, 362:19, 363:19, 367:25, 448:2, 501:24, 502:4 <b>fine</b> <sup>[8]</sup> - 449:4, 533:2, 554:11, 554:16, 594:6, 621:19, 626:1, 629:15 <b>finish</b> <sup>[1]</sup> - 566:8 <b>firefighter</b> <sup>[1]</sup> - 372:14 <b>First</b> <sup>[12]</sup> - 345:8, 345:14, 345:21, 345:23, 345:24, 348:17, 348:21, 349:11, 349:13, 349:18, 349:20, 349:21 <b>first</b> <sup>[52]</sup> - 351:21, 358:11, 367:18, 368:6, 369:11, 373:25, 392:12, 398:21, 411:16, 415:8, 421:11, 422:18, 429:9, 433:1, 434:20, 447:1, 458:22, 466:3, 472:10, 472:23, 484:4, 506:13, 515:20, 522:2, 533:11, 541:8, 541:24, 544:2, 544:4, 544:9, 546:1, 547:13, 552:17, 565:1, 571:2, 572:19, 576:1, 576:2, 582:12, 595:23, 601:23, 610:9, 610:16, 613:16, 614:25, 619:8, 623:2, 623:4, 631:4, 633:6, 640:25 <b>firsthand</b> <sup>[1]</sup> - 538:21 <b>Fish</b> <sup>[5]</sup> - 438:10, 450:13, 450:21, 468:12, 468:21 <b>fish</b> <sup>[1]</sup> - 404:12 <b>five</b> <sup>[17]</sup> - 416:25, 441:14, 484:22, 507:2, 507:11, 513:25, 525:11, 548:14, 548:16, 548:18, 548:19, 577:2, 577:11, 614:8, 617:2, 632:5, 632:21 <b>Five</b> <sup>[1]</sup> - 347:18 <b>five-minute</b> <sup>[1]</sup> - 507:2 <b>fixed</b> <sup>[3]</sup> - 382:11, 387:2, 387:4 <b>flash</b> <sup>[2]</sup> - 401:4, 629:22 <b>flat</b> <sup>[1]</sup> - 506:19 <b>flavor</b> <sup>[4]</sup> - 371:18, 421:18, 423:20, 629:17 <b>flaws</b> <sup>[1]</sup> - 502:7 <b>flicker</b> <sup>[10]</sup> - 377:25, 395:12, 399:8, 399:21, 402:1, 402:4, 425:4, 426:5, 426:20 <b>Flicker</b> <sup>[3]</sup> - 340:5, 340:6, 346:23 <b>flight</b> <sup>[2]</sup> - 457:21, 458:2 <b>flip</b> <sup>[6]</sup> - 368:5, 433:6, 473:16, 487:14, 489:17, 525:21 <b>floor</b> <sup>[1]</sup> - 622:13 <b>flow</b> <sup>[3]</sup> - 448:24, 1 9 449:8, 449:14 <b>flowchart</b> <sup>[1]</sup> - 439:3 <b>flowing</b> <sup>[1]</sup> - 449:6 <b>fluctuating</b> <sup>[3]</sup> - 490:12, 491:2, 493:12 <b>fly</b> <sup>[1]</sup> - 465:7 <b>flying</b> <sup>[1]</sup> - 462:21 <b>flyway</b> <sup>[4]</sup> - 457:11, 461:24, 462:3, 464:5 <b>focus</b> <sup>[7]</sup> - 352:14, 358:18, 388:22, 455:1, 561:18, 605:10, 619:6 <b>focused</b> <sup>[1]</sup> - 572:16 <b>folks</b> <sup>[4]</sup> - 601:5, 601:6, 603:24, 603:25 <b>folks'</b> <sup>[1]</sup> - 424:10 <b>follow</b> <sup>[9]</sup> - 365:10, 369:11, 379:20, 384:20, 407:23, 456:9, 503:18, 534:9, 571:13 <b>follow-up</b> <sup>[1]</sup> - 365:10 <b>following</b> <sup>[6]</sup> - 350:1, 368:16, 368:25, 380:15, 520:4, 549:19 <b>follows</b> <sup>[7]</sup> - 392:13, 429:10, 472:24, 522:3, 571:3, 595:24, 613:17 <b>food</b> <sup>[1]</sup> - 393:21 <b>Food</b> <sup>[1]</sup> - 340:20 <b>foot</b> <sup>[2]</sup> - 589:1, 589:2 <b>footage</b> <sup>[3]</sup> - 399:17, 426:11, 426:12 <b>footnote</b> <sup>[1]</sup> - 362:25 <b>footprint</b> <sup>[3]</sup> - 428:1, 469:14, 485:12 <b>FOR</b> <sup>[2]</sup> - 332:3, 332:5 <b>foraging</b> <sup>[1]</sup> - 450:5 <b>force</b> <sup>[1]</sup> - 544:20 <b>forced</b> <sup>[1]</sup> - 413:9 <b>foreground</b> <sup>[1]</sup> - 500:5 <b>forever</b> <sup>[1]</sup> - 622:9 <b>forget</b> <sup>[2]</sup> - 638:4, 641:5 <b>forgive</b> <sup>[3]</sup> - 386:10, 461:16, 511:18 <b>forgot</b> <sup>[3]</sup> - 561:23, 632:18, 637:23 <b>Form</b> <sup>[1]</sup> - 348:13 <b>form</b> <sup>[3]</sup> - 606:16, 606:23, 632:24 <b>formalized</b> <sup>[1]</sup> - 357:25 <b>format</b> <sup>[1]</sup> - 538:19	
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<b>formation</b> <sup>[1]</sup> - 538:16 <b>formed</b> <sup>[2]</sup> - 635:8, 636:6 <b>former</b> <sup>[1]</sup> - 494:2 <b>Former</b> <sup>[1]</sup> - 347:22 <b>forms</b> <sup>[1]</sup> - 463:9 <b>formula</b> <sup>[17]</sup> - 529:4, 531:11, 531:18, 531:20, 532:2, 532:5, 553:21, 553:23, 554:21, 554:23, 554:24, 555:19, 555:21, 555:22, 555:23, 562:21 <b>formulas</b> <sup>[7]</sup> - 529:8, 529:11, 529:14, 532:20, 532:22, 533:20, 551:7 <b>forth</b> <sup>[9]</sup> - 441:6, 471:20, 471:24, 491:8, 491:9, 550:15, 576:13, 576:19, 581:6 <b>foundation</b> <sup>[2]</sup> - 441:23, 475:14 <b>four</b> <sup>[23]</sup> - 352:20, 352:22, 353:7, 353:9, 353:21, 354:3, 354:24, 355:1, 399:19, 415:17, 418:10, 418:19, 427:15, 448:1, 484:20, 484:21, 548:20, 597:25, 599:11, 606:16, 606:18, 606:21, 621:10 <b>Four</b> <sup>[1]</sup> - 347:15 <b>four-day</b> <sup>[2]</sup> - 418:10, 418:19 <b>Four-Decade</b> <sup>[1]</sup> - 347:15 <b>Fourth</b> <sup>[2]</sup> - 348:20, 607:11 <b>fourths</b> <sup>[1]</sup> - 399:16 <b>fragment</b> <sup>[1]</sup> - 551:8 <b>frame</b> <sup>[4]</sup> - 493:13, 507:9, 515:15, 515:17 <b>free</b> <sup>[4]</sup> - 360:3, 413:8, 489:17, 533:22 <b>freezing</b> <sup>[2]</sup> - 524:21, 562:8 <b>French</b> <sup>[2]</sup> - 340:19, 363:2 <b>frequencies</b> <sup>[10]</sup> - 381:9, 381:13, 384:11, 384:13, 385:16, 386:15,	502:25, 506:13, 506:15, 506:16 <b>frequency</b> <sup>[27]</sup> - 341:18, 374:15, 374:17, 375:24, 380:19, 380:24, 381:7, 381:9, 381:12, 381:18, 381:23, 382:9, 452:3, 490:13, 491:3, 491:13, 502:2, 516:5, 516:8, 516:14, 517:6, 517:11, 517:12, 623:6 <b>Frequency</b> <sup>[2]</sup> - 340:22, 347:12 <b>frequent</b> <sup>[2]</sup> - 352:11, 374:9 <b>frequently</b> <sup>[4]</sup> - 488:19, 535:18, 536:2, 537:24 <b>friction</b> <sup>[1]</sup> - 489:2 <b>friendly</b> <sup>[3]</sup> - 446:22, 582:22, 582:23 <b>Frits</b> <sup>[1]</sup> - 342:3 <b>front</b> <sup>[13]</sup> - 351:17, 380:16, 382:13, 410:21, 443:3, 479:4, 479:19, 480:4, 490:4, 523:8, 523:10, 554:15, 563:1 <b>Frontiers</b> <sup>[1]</sup> - 342:22 <b>frozen</b> <sup>[3]</sup> - 499:18, 499:23, 500:3 <b>frustration</b> <sup>[1]</sup> - 451:21 <b>Fu</b> <sup>[1]</sup> - 342:17 <b>FUERNISS</b> <sup>[29]</sup> - 335:19, 370:18, 380:14, 382:20, 416:21, 427:8, 428:9, 428:21, 437:12, 437:20, 469:5, 504:22, 504:24, 509:1, 521:6, 550:10, 550:12, 553:11, 569:22, 573:11, 578:11, 580:25, 593:17, 594:18, 595:2, 595:6, 609:16, 609:25, 637:15 <b>Fuerniss</b> <sup>[59]</sup> - 332:18, 333:5, 333:12, 333:14, 333:17, 333:22, 333:24, 334:5, 334:8, 334:9,	334:12, 334:15, 334:20, 334:23, 335:5, 335:11, 335:20, 336:5, 336:14, 336:17, 336:20, 337:5, 337:8, 337:18, 337:21, 338:9, 338:14, 339:5, 339:7, 339:12, 346:3, 348:6, 349:12, 349:13, 349:14, 370:16, 380:12, 416:19, 427:6, 435:4, 437:10, 469:4, 504:20, 521:5, 550:8, 569:21, 570:23, 570:24, 571:1, 571:4, 571:15, 572:22, 580:1, 582:17, 589:4, 589:7, 589:22, 609:13, 637:13 <b>fuerniss</b> <sup>[2]</sup> - 333:8, 335:16 <b>Fuerniss's</b> <sup>[1]</sup> - 345:21 <b>FUERNISS'S</b> <sup>[1]</sup> - 349:8 <b>full</b> <sup>[9]</sup> - 410:25, 415:12, 423:23, 474:3, 491:25, 492:4, 539:4, 539:7, 546:11 <b>full-time</b> <sup>[2]</sup> - 423:23, 546:11 <b>fuller</b> <sup>[1]</sup> - 359:16 <b>fully</b> <sup>[6]</sup> - 369:22, 412:22, 499:8, 503:3, 566:1, 566:2 <b>fun</b> <sup>[1]</sup> - 420:18 <b>function</b> <sup>[2]</sup> - 556:10, 557:9 <b>fund</b> <sup>[1]</sup> - 398:14 <b>fundraiser</b> <sup>[3]</sup> - 596:21, 596:23, 598:10 <b>funky</b> <sup>[1]</sup> - 559:13 <b>funneled</b> <sup>[1]</sup> - 536:17 <b>funny</b> <sup>[1]</sup> - 397:23 <b>Fur</b> <sup>[1]</sup> - 341:20 <b>furthest</b> <sup>[3]</sup> - 506:14, 561:2, 561:5 <b>future</b> <sup>[2]</sup> - 456:12, 611:19	<b>G</b> <b>gain</b> <sup>[3]</sup> - 385:9, 385:25, 394:6 <b>gained</b> <sup>[1]</sup> - 425:23 <b>gallery</b> <sup>[1]</sup> - 598:13 <b>gallon</b> <sup>[1]</sup> - 563:15 <b>game</b> <sup>[2]</sup> - 532:20, 641:19 <b>GARY</b> <sup>[1]</sup> - 332:10 <b>gates</b> <sup>[1]</sup> - 620:1 <b>gather</b> <sup>[2]</sup> - 536:15, 537:23 <b>gathered</b> <sup>[1]</sup> - 535:18 <b>gauge</b> <sup>[1]</sup> - 539:21 <b>GE</b> <sup>[12]</sup> - 348:9, 458:17, 524:25, 532:5, 535:14, 540:5, 542:1, 544:14, 547:19, 551:10, 555:11 <b>gear</b> <sup>[2]</sup> - 491:19, 544:19 <b>geese</b> <sup>[1]</sup> - 622:7 <b>general</b> <sup>[34]</sup> - 352:1, 352:2, 354:15, 372:6, 372:7, 378:3, 382:5, 386:7, 404:19, 431:5, 462:25, 464:10, 474:17, 487:1, 487:2, 488:22, 491:10, 491:17, 492:11, 497:1, 497:11, 503:15, 509:12, 512:12, 513:17, 515:20, 516:2, 516:12, 517:1, 518:1, 518:6, 522:13, 550:24 <b>General</b> <sup>[3]</sup> - 525:14, 551:14, 568:24 <b>generally</b> <sup>[19]</sup> - 356:24, 372:4, 404:22, 409:24, 478:24, 480:17, 481:16, 487:9, 488:4, 488:10, 489:1, 490:2, 490:10, 497:3, 500:22, 502:8, 506:11, 506:23, 524:4 <b>generate</b> <sup>[5]</sup> - 359:7, 359:10, 434:16, 540:11, 545:17 <b>generated</b> <sup>[6]</sup> - 356:21, 359:14, 363:7, 487:25, 493:11, 545:17	<b>generates</b> <sup>[1]</sup> - 359:5 20 <b>generation</b> <sup>[2]</sup> - 601:7, 601:8 <b>generations</b> <sup>[1]</sup> - 611:20 <b>genetics</b> <sup>[1]</sup> - 572:1 <b>gentleman</b> <sup>[2]</sup> - 373:25, 532:14 <b>geographical</b> <sup>[1]</sup> - 415:5 <b>geometrical</b> <sup>[1]</sup> - 559:15 <b>George</b> <sup>[1]</sup> - 571:21 <b>German</b> <sup>[2]</sup> - 572:1, 580:14 <b>Germany</b> <sup>[1]</sup> - 341:18 <b>gestured</b> <sup>[1]</sup> - 436:14 <b>GF&amp;P's</b> <sup>[1]</sup> - 349:16 <b>GFP</b> <sup>[1]</sup> - 464:18 <b>given</b> <sup>[11]</sup> - 354:21, 477:24, 494:20, 520:14, 529:9, 529:16, 551:14, 588:6, 588:22, 629:17, 632:13 <b>gladly</b> <sup>[2]</sup> - 414:16, 567:2 <b>Glasgow</b> <sup>[1]</sup> - 380:18 <b>goal</b> <sup>[4]</sup> - 385:21, 434:1, 434:5, 448:16 <b>Goals</b> <sup>[1]</sup> - 349:6 <b>Golden</b> <sup>[2]</sup> - 440:7, 440:12 <b>goodness</b> <sup>[1]</sup> - 468:19 <b>Google</b> <sup>[7]</sup> - 347:17, 347:22, 348:5, 348:8, 348:14, 583:15, 583:16 <b>gosh</b> <sup>[1]</sup> - 564:5 <b>government</b> <sup>[3]</sup> - 419:10, 623:16, 625:9 <b>governmental</b> <sup>[1]</sup> - 633:8 <b>governments</b> <sup>[1]</sup> - 623:17 <b>grab</b> <sup>[1]</sup> - 509:21 <b>grade</b> <sup>[1]</sup> - 570:18 <b>gradual</b> <sup>[1]</sup> - 546:22 <b>graduate</b> <sup>[2]</sup> - 397:16, 562:2 <b>graduated</b> <sup>[3]</sup> - 561:22, 562:3, 571:25 <b>graduation</b> <sup>[1]</sup> - 571:23 <b>grain</b> <sup>[1]</sup> - 580:15 <b>grandpa</b> <sup>[1]</sup> - 396:22 <b>grandpa's</b> <sup>[1]</sup> - 581:17 <b>granted</b> <sup>[1]</sup> - 627:5
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<p><b>granting</b> [1] - 621:9</p> <p><b>Graphs</b> [1] - 347:13</p> <p><b>grass</b> [2] - 499:23, 575:23</p> <p><b>grateful</b> [1] - 375:18</p> <p><b>graze</b> [2] - 398:1, 576:1</p> <p><b>grazing</b> [2] - 575:24, 576:4</p> <p><b>Great</b> [2] - 440:22, 471:25</p> <p><b>great</b> [17] - 382:2, 397:18, 397:21, 398:16, 403:3, 404:13, 406:12, 420:13, 437:16, 451:14, 454:1, 458:8, 570:5, 570:15, 582:14, 591:3, 611:9</p> <p><b>greater</b> [4] - 359:11, 462:8, 480:19, 591:6</p> <p><b>green</b> [4] - 428:10, 435:10, 436:9, 565:17</p> <p><b>Green</b> [4] - 349:10, 349:11, 571:7, 571:8</p> <p><b>Greg</b> [1] - 332:13</p> <p><b>GREGG</b> [1] - 338:3</p> <p><b>Gregg</b> [8] - 332:17, 345:6, 345:9, 345:12, 345:15, 345:18, 346:4, 348:11</p> <p><b>grew</b> [1] - 614:23</p> <p><b>grid</b> [3] - 415:10, 543:20, 552:18</p> <p><b>grinding</b> [2] - 575:13, 575:15</p> <p><b>ground</b> [48] - 393:14, 393:17, 394:2, 394:21, 395:24, 402:8, 402:15, 405:9, 414:11, 414:18, 414:22, 463:8, 487:13, 487:18, 488:15, 498:6, 498:8, 498:11, 498:14, 498:16, 498:22, 498:25, 499:8, 499:9, 499:13, 499:14, 499:18, 499:21, 499:22, 499:23, 500:2, 500:3, 560:13, 560:15, 576:4, 578:20, 588:20, 591:17, 596:15, 597:21, 597:23,</p>	<p>597:25, 601:6</p> <p><b>ground-based</b> [2] - 487:13, 487:18</p> <p><b>group</b> [4] - 460:22, 576:5, 587:22, 608:2</p> <p><b>Group</b> [1] - 341:7</p> <p><b>groupings</b> [1] - 508:15</p> <p><b>grow</b> [1] - 548:12</p> <p><b>grown</b> [3] - 499:8, 539:1, 614:20</p> <p><b>guarantee</b> [2] - 426:25, 439:10</p> <p><b>Guelph</b> [1] - 344:18</p> <p><b>Guerin</b> [1] - 344:3</p> <p><b>guess</b> [54] - 358:8, 362:7, 393:19, 394:10, 394:18, 397:11, 399:13, 400:6, 401:8, 402:1, 402:2, 402:3, 403:3, 405:20, 409:19, 413:8, 413:10, 418:16, 418:18, 426:25, 427:17, 427:21, 428:11, 428:19, 429:23, 435:5, 437:13, 439:7, 449:3, 465:15, 484:15, 519:7, 551:10, 555:13, 559:8, 560:18, 590:4, 590:19, 594:18, 597:1, 602:12, 607:1, 607:14, 607:18, 607:23, 608:3, 610:17, 611:8, 611:10, 611:19, 624:11, 627:2, 639:2</p> <p><b>guessing</b> [4] - 429:13, 436:22, 548:23, 598:7</p> <p><b>guidance</b> [2] - 499:6, 506:21</p> <p><b>guidances</b> [2] - 499:3, 499:4</p> <p><b>guideline</b> [1] - 483:21</p> <p><b>Guidelines</b> [3] - 348:21, 348:22, 349:16</p> <p><b>guidelines</b> [1] - 526:8</p> <p><b>guinea</b> [20] - 380:5, 386:14, 386:17, 388:10, 388:13, 388:14, 388:24, 388:25, 389:2, 389:7, 389:10, 389:19, 389:22,</p>	<p>389:25, 390:6, 391:11, 391:14, 391:20, 391:22, 391:23</p> <p><b>Gulf</b> [1] - 459:16</p> <p><b>gut</b> [1] - 619:21</p> <p><b>guy</b> [2] - 397:5, 397:6</p> <p><b>guys</b> [5] - 364:15, 392:23, 402:20, 416:16, 566:3</p> <p><b>guys'</b> [1] - 367:25</p>	<p>446:22, 447:20, 448:5, 448:19, 449:4, 449:9, 449:16, 450:11, 451:14, 451:22, 452:15, 452:25, 453:3, 453:5, 453:11, 453:19, 453:22, 454:10, 455:10, 455:13, 455:25, 456:16, 457:2, 458:1, 458:5, 458:10, 458:21, 459:13, 459:23, 460:1, 460:9, 460:12, 460:17, 461:2, 461:16, 461:20, 461:22, 462:23, 463:2, 463:4, 463:6, 463:14, 463:19, 463:23, 464:3, 464:9, 466:4, 466:10, 467:1, 561:11, 561:13, 561:15, 561:20, 562:6, 562:13, 562:17, 563:1, 563:3, 563:7, 564:3, 564:11, 564:19, 568:2, 568:7, 568:9, 568:12, 593:7, 593:22, 611:25, 612:5, 612:8, 627:23, 640:3, 640:18, 640:21, 640:24, 641:8, 641:15, 641:24</p> <p><b>Hanson's</b> [1] - 467:15</p> <p><b>happy</b> [5] - 404:22, 432:5, 440:1, 458:19, 523:22</p> <p><b>hard</b> [12] - 368:18, 372:16, 403:10, 482:23, 499:1, 517:22, 571:13, 578:14, 595:12, 616:19, 621:12, 622:23</p> <p><b>harm</b> [3] - 369:22, 392:1, 392:2</p> <p><b>harmed</b> [1] - 369:21</p> <p><b>harmful</b> [1] - 391:23</p> <p><b>Harris</b> [1] - 347:23</p> <p><b>Hazard</b> [1] - 343:8</p> <p><b>head</b> [7] - 501:16, 554:13, 575:10, 584:19, 585:5, 589:15, 606:4</p> <p><b>heading</b> [1] - 368:9</p>	<p><b>headphones</b> [1] - 607:9</p> <p><b>health</b> [32] - 352:23, 352:25, 354:6, 354:16, 355:3, 355:4, 355:8, 357:1, 357:8, 357:20, 358:2, 359:12, 361:25, 367:2, 369:6, 370:5, 372:19, 372:22, 375:15, 379:23, 380:8, 382:19, 386:22, 387:20, 387:23, 388:20, 573:3, 573:9, 573:25, 575:18, 587:7, 623:8</p> <p><b>Health</b> [28] - 340:8, 340:10, 340:11, 340:14, 340:15, 340:16, 340:17, 340:18, 340:22, 340:25, 341:9, 341:11, 341:12, 341:14, 341:15, 342:3, 342:5, 342:5, 342:20, 342:22, 347:15, 349:3, 361:14, 364:9, 365:11, 365:21, 365:23, 366:15</p> <p><b>hear</b> [36] - 372:16, 375:22, 376:1, 380:24, 380:25, 383:4, 384:2, 384:5, 385:13, 386:15, 387:3, 388:11, 388:17, 421:1, 452:9, 488:4, 493:10, 503:16, 535:10, 535:12, 538:3, 558:15, 576:20, 577:13, 605:20, 605:24, 606:1, 606:2, 614:1, 622:11, 622:12, 622:15, 634:15, 636:18, 637:7</p> <p><b>heard</b> [19] - 387:1, 387:19, 388:14, 388:25, 389:2, 409:5, 422:4, 445:4, 453:21, 490:11, 510:12, 534:20, 538:5, 561:24, 564:2, 568:3, 575:22, 633:25, 638:18</p> <p><b>Hearing</b> [3] - 332:6,</p>
<b>H</b>				
<p><b>habitat</b> [25] - 447:6, 447:17, 448:3, 449:25, 450:4, 450:10, 450:13, 450:16, 450:18, 450:20, 450:23, 450:24, 451:1, 451:3, 451:4, 451:7, 451:8, 451:10, 451:13, 462:6, 462:7, 464:9, 464:10, 465:13, 468:2</p> <p><b>half</b> [21] - 393:25, 403:19, 448:16, 505:24, 505:25, 512:4, 516:25, 526:13, 529:5, 554:1, 554:3, 563:14, 577:5, 577:6, 578:17, 580:21, 588:20, 588:22, 598:8, 599:15, 602:3</p> <p><b>half-mile</b> [3] - 393:25, 577:6, 588:22</p> <p><b>Halmstad</b> [1] - 342:11</p> <p><b>hand</b> [2] - 502:23, 534:7</p> <p><b>handed</b> [1] - 471:12</p> <p><b>handy</b> [2] - 470:18, 473:17</p> <p><b>hanging</b> [2] - 573:22, 584:12</p> <p><b>Hanson</b> [10] - 388:2, 418:25, 431:25, 445:14, 512:20, 561:10, 593:6, 594:9, 611:24, 640:2</p> <p><b>HANSON</b> [91] - 332:10, 377:20, 377:22, 378:5, 378:9, 378:13, 378:18, 419:1, 419:6, 445:17, 445:21, 446:5,</p>				

346:19, 351:2 <b>hearing</b> [58] - 380:23, 383:9, 383:10, 383:11, 383:12, 383:17, 383:22, 383:24, 384:24, 385:1, 385:4, 385:11, 385:14, 385:21, 385:22, 385:24, 421:5, 421:12, 423:7, 423:9, 481:23, 516:6, 518:25, 593:25, 596:10, 596:12, 596:13, 602:13, 605:11, 605:15, 605:16, 605:23, 607:2, 607:6, 607:12, 607:13, 607:15, 607:25, 609:19, 609:20, 610:17, 610:21, 610:24, 611:17, 612:3, 616:11, 619:8, 619:17, 623:22, 626:14, 628:5, 630:25, 632:3, 632:5, 632:17, 632:18, 641:3, 642:16 <b>hearings</b> [2] - 610:20, 642:1 <b>hearsay</b> [10] - 574:6, 574:10, 594:24, 618:3, 618:8, 628:1, 629:3, 629:12, 631:9, 639:2 <b>heart</b> [3] - 424:7, 508:1, 612:2 <b>heart-wrenching</b> [1] - 612:2 <b>heat</b> [1] - 552:24 <b>heavily</b> [1] - 587:21 <b>height</b> [19] - 474:10, 485:7, 488:2, 498:20, 505:15, 505:20, 505:22, 505:23, 526:13, 527:12, 531:14, 547:23, 549:18, 553:25, 554:3, 562:22, 562:23, 563:9, 589:16 <b>height's</b> [1] - 529:6 <b>held</b> [3] - 350:2, 434:9, 634:6 <b>help</b> [7] - 355:14, 425:24, 457:14, 479:4, 560:11, 583:9, 603:1 <b>helpful</b> [1] - 578:10 <b>helping</b> [1] - 639:24 <b>helps</b> [1] - 600:20 <b>HEREBY</b> [1] - 643:8 <b>heritage</b> [1] - 471:1 <b>herself</b> [1] - 629:1 <b>hertz</b> [9] - 381:14, 381:18, 387:16, 387:17, 516:6, 516:7, 516:8, 516:25 <b>Hessler</b> [4] - 347:4, 349:5, 478:5, 478:8 <b>HESSLER</b> [1] - 337:3 <b>hi</b> [2] - 437:13, 473:5 <b>high</b> [18] - 381:8, 381:15, 397:16, 450:15, 450:18, 450:22, 450:25, 452:9, 465:13, 496:14, 496:15, 499:12, 512:13, 571:18, 571:23, 578:20, 579:4 <b>higher</b> [16] - 364:11, 364:13, 365:2, 382:17, 385:11, 387:5, 400:24, 401:7, 487:6, 487:7, 496:9, 497:18, 499:11, 499:15, 633:11 <b>highest</b> [3] - 487:11, 495:22, 506:15 <b>highly</b> [4] - 405:20, 453:8, 558:19, 572:12 <b>highway</b> [4] - 615:5, 615:6, 615:8, 634:17 <b>highways</b> [2] - 584:11, 615:14 <b>hill</b> [2] - 507:1, 591:14 <b>hills</b> [2] - 506:20, 581:6 <b>hilltops</b> [1] - 579:4 <b>hilly</b> [2] - 506:18, 506:23 <b>hire</b> [1] - 592:10 <b>hired</b> [5] - 354:2, 354:19, 354:20, 473:6, 524:9 <b>hiring</b> [1] - 354:23 <b>Hiroya</b> [1] - 342:14 <b>historic</b> [4] - 441:24, 442:3, 442:11, 443:6 <b>history</b> [5] - 430:2, 430:6, 484:2, 522:22, 594:10 <b>History</b> [1] - 347:16 <b>hit</b> [4] - 466:13, 490:8, 545:11, 557:4 <b>Hitomi</b> [1] - 342:13 <b>hits</b> [2] - 384:8, 490:7 <b>Hoen</b> [2] - 341:3, 344:19 <b>Hogskolan</b> [1] - 342:10 <b>hold</b> [3] - 524:13, 583:12, 603:7 <b>home</b> [26] - 393:15, 397:18, 397:21, 405:17, 405:19, 490:21, 553:10, 580:6, 580:10, 581:18, 596:16, 596:17, 596:18, 596:22, 597:4, 597:5, 597:6, 597:7, 597:9, 612:17, 612:19, 614:10, 619:13, 623:13, 629:23, 630:23 <b>Homecoming</b> [2] - 402:18, 416:13 <b>homes</b> [1] - 369:21 <b>homestead</b> [2] - 393:15, 572:6 <b>homework</b> [1] - 599:10 <b>Homme</b> [7] - 348:9, 590:11, 626:21, 628:11, 635:16, 635:21, 638:10 <b>HOMME</b> [1] - 332:4 <b>honest</b> [1] - 594:11 <b>Honke</b> [1] - 573:24 <b>hook</b> [1] - 363:5 <b>hope</b> [3] - 380:10, 567:25, 612:5 <b>hopeful</b> [1] - 443:25 <b>horizon</b> [2] - 578:2, 617:6 <b>horizontal</b> [3] - 381:12, 381:14, 533:17 <b>Horn</b> [1] - 579:2 <b>Hornstra</b> [7] - 411:8, 411:9, 411:18, 411:24, 412:7, 414:6, 415:1 <b>horse</b> [1] - 589:1 <b>hotel</b> [3] - 492:23, 492:25, 493:3 <b>hour</b> [7] - 356:9, 458:3, 488:15, 515:13, 515:16, 515:19, 615:11 <b>hourly</b> [1] - 356:6 <b>hours</b> [8] - 400:4, 400:7, 453:17, 514:24, 553:10, 574:21, 575:7, 575:8 <b>house</b> [26] - 393:6, 396:2, 399:19, 414:20, 424:10, 424:14, 426:13, 433:18, 433:23, 434:16, 492:25, 513:13, 580:14, 581:10, 581:11, 585:17, 588:18, 600:12, 614:25, 622:13, 622:14, 623:11, 636:19, 636:23, 636:25 <b>House</b> [1] - 343:21 <b>housekeeping</b> [1] - 470:15 <b>houses</b> [7] - 426:17, 433:20, 434:9, 434:12, 508:16, 591:14, 622:2 <b>housing</b> [1] - 615:17 <b>HOWELL</b> [1] - 335:9 <b>Howell</b> [14] - 343:11, 343:12, 472:21, 472:22, 473:3, 473:5, 476:8, 476:22, 476:24, 477:3, 504:25, 511:11, 585:8, 604:10 <b>Howell's</b> [1] - 504:14 <b>hub</b> [11] - 474:10, 488:1, 505:22, 529:5, 529:6, 531:14, 548:5, 562:22, 562:23, 563:2, 563:9 <b>Hubner</b> [16] - 332:17, 332:17, 345:6, 345:7, 345:9, 345:10, 345:12, 345:12, 345:15, 345:15, 345:18, 345:18, 346:4, 346:5, 348:11, 395:22 <b>HUBNER</b> [1] - 338:3 <b>HUECK</b> [209] - 351:1, 364:22, 366:4, 366:9, 366:14, 366:21, 370:16, 370:23, 370:25, 371:9, 374:22, 376:23, 378:21, 378:24, 379:5, 379:14, 379:16, 380:12, 382:21, 382:23, 384:17, 388:2, 391:18, 22 392:4, 392:8, 398:20, 398:24, 405:3, 405:6, 406:1, 406:19, 406:22, 406:25, 416:19, 417:11, 418:3, 418:22, 418:24, 419:8, 420:11, 424:23, 425:9, 427:6, 428:7, 428:22, 428:24, 429:1, 429:5, 432:25, 433:3, 436:6, 437:10, 437:21, 437:23, 437:25, 439:23, 445:8, 467:9, 468:6, 469:1, 469:4, 469:6, 469:21, 471:6, 471:8, 472:5, 472:8, 474:23, 475:2, 475:9, 475:15, 475:22, 476:10, 476:13, 476:16, 476:19, 497:10, 504:7, 504:18, 509:2, 509:4, 509:6, 511:12, 512:20, 514:11, 518:10, 521:4, 521:7, 521:10, 521:15, 521:21, 527:24, 528:9, 528:17, 528:21, 532:13, 532:24, 538:20, 549:21, 550:5, 550:8, 553:13, 553:15, 561:8, 565:9, 568:13, 568:19, 569:2, 569:19, 569:21, 569:23, 569:25, 570:2, 570:4, 570:8, 570:12, 570:17, 570:22, 571:4, 573:5, 574:9, 574:12, 574:16, 578:7, 578:9, 579:14, 580:24, 582:3, 582:5, 582:10, 582:19, 582:23, 583:5, 589:6, 589:9, 589:18, 591:24, 593:4, 593:6, 594:4, 594:20, 594:25, 595:4, 595:7, 595:14, 595:19, 595:25, 597:19, 598:5, 598:9,
--

598:18, 598:20, 598:24, 599:22, 600:1, 600:6, 600:17, 600:21, 601:12, 601:15, 601:22, 601:25, 602:4, 602:8, 602:14, 602:16, 602:20, 609:13, 610:1, 610:3, 611:22, 612:10, 612:14, 613:1, 613:6, 613:12, 613:18, 617:16, 617:23, 618:9, 618:11, 618:16, 618:23, 619:1, 619:5, 620:13, 620:23, 621:19, 624:5, 626:1, 626:24, 627:8, 627:13, 627:25, 628:6, 629:4, 629:13, 631:10, 633:19, 636:13, 637:13, 637:16, 637:19, 637:22, 638:1, 638:13, 640:2, 642:7, 642:14 <b>Hueck</b> [13] - 332:12, 351:2, 366:11, 406:15, 580:22, 601:9, 608:14, 617:12, 620:9, 624:2, 625:20, 626:19, 633:22 <b>huge</b> [5] - 396:12, 403:23, 422:12, 454:2, 552:18 <b>hum</b> [1] - 636:21 <b>human</b> [14] - 357:8, 359:11, 367:2, 369:5, 369:19, 382:19, 385:16, 389:11, 389:25, 390:7, 390:14, 391:5, 426:25, 518:21 <b>Human</b> [6] - 340:13, 340:16, 340:18, 341:9, 347:15, 349:3 <b>human's</b> [1] - 518:24 <b>humans</b> [6] - 374:9, 374:14, 380:8, 386:16, 386:18, 389:22 <b>humidity</b> [1] - 637:4 <b>hunched</b> [1] - 575:9 <b>hundred</b> [1] - 454:5 <b>hundreds</b> [3] - 454:4,	483:6, 512:3 <b>hunt</b> [4] - 405:7, 405:9, 405:17, 405:21 <b>hunted</b> [2] - 405:15, 405:19 <b>hunter</b> [1] - 463:9 <b>hunting</b> [8] - 404:25, 405:11, 405:14, 405:23, 406:2, 406:5, 406:12 <b>hurt</b> [2] - 405:13, 562:15 <b>husband</b> [4] - 593:25, 614:21, 615:4, 626:16 <b>husbandry</b> [1] - 572:8 <b>Hutchinson</b> [8] - 614:3, 614:7, 617:2, 617:3, 617:4, 631:15, 631:16, 638:10 <b>HUTCHINSON</b> [1] - 332:4 <b>HVAC</b> [1] - 514:9 <b>hyperactive</b> [1] - 378:14 <b>hyperventilation</b> [1] - 371:22 <b>Hypothesis</b> [1] - 342:21 <b>hypothetically</b> [1] - 557:15	<b>I-2</b> [1] - 347:14 <b>I-21</b> [1] - 348:14 <b>I-22</b> [1] - 348:14 <b>I-23</b> [1] - 348:16 <b>I-26</b> [1] - 348:16 <b>I-27</b> [1] - 348:17 <b>I-28</b> [3] - 348:18, 525:18, 526:3 <b>I-29</b> [6] - 348:19, 608:16, 608:19, 609:1, 609:2, 613:10 <b>I-2a</b> [1] - 347:14 <b>I-2b</b> [1] - 347:15 <b>I-30</b> [1] - 348:20 <b>I-31</b> [1] - 348:21 <b>I-32</b> [1] - 348:22 <b>I-33</b> [1] - 348:23 <b>I-34</b> [1] - 348:24 <b>I-35</b> [1] - 349:3 <b>I-36</b> [1] - 349:4 <b>I-37</b> [1] - 349:5 <b>I-38</b> [1] - 349:7 <b>I-4</b> [1] - 347:17 <b>I-6</b> [1] - 347:18 <b>I-6a</b> [1] - 347:19 <b>I-6b</b> [1] - 347:20 <b>I-6c</b> [1] - 347:20 <b>I-6d</b> [1] - 347:21 <b>I-6e</b> [1] - 347:21 <b>I-8</b> [2] - 347:22, 583:4 <b>IA</b> [1] - 347:23 <b>ICA</b> [1] - 342:10 <b>ice</b> [113] - 499:1, 525:16, 526:11, 529:9, 529:16, 529:20, 529:21, 529:22, 530:2, 530:4, 530:6, 530:9, 530:11, 530:13, 530:15, 530:17, 530:19, 531:1, 531:2, 531:3, 531:20, 531:25, 532:3, 532:10, 532:15, 532:17, 533:1, 533:2, 533:24, 537:21, 537:24, 538:8, 538:11, 539:2, 539:4, 539:10, 540:10, 540:12, 540:20, 540:22, 540:23, 541:3, 542:4, 542:9, 542:12, 543:2, 543:12, 544:23, 545:2, 545:4, 545:5, 545:10, 545:23, 546:14, 546:17, 547:7, 547:15,	550:15, 551:4, 551:9, 551:20, 551:25, 552:3, 552:14, 552:24, 553:21, 553:24, 555:8, 555:9, 555:16, 556:2, 556:4, 556:9, 556:11, 556:15, 556:19, 556:23, 557:5, 557:10, 557:13, 557:15, 557:16, 557:21, 557:24, 557:25, 558:2, 558:5, 558:7, 558:15, 563:13, 563:14, 563:17, 563:20, 563:21, 567:6, 567:7, 567:12, 567:15, 567:17, 567:18, 567:20, 568:15, 568:17, 568:19, 568:21, 569:8, 569:10, 569:12, 569:15 <b>Ice</b> [2] - 348:9, 348:10 <b>iced</b> [1] - 547:3 <b>icing</b> [18] - 524:3, 524:18, 524:20, 524:25, 525:9, 525:13, 527:17, 539:16, 540:23, 547:4, 548:16, 551:24, 557:7, 557:8, 562:7, 565:2, 569:8 <b>icings</b> [1] - 562:14 <b>idea</b> [14] - 369:25, 372:18, 380:18, 391:4, 409:9, 410:1, 417:22, 458:13, 497:1, 517:1, 542:23, 552:15, 583:3, 615:9 <b>identical</b> [1] - 389:25 <b>identified</b> [14] - 442:10, 442:13, 443:5, 444:3, 444:24, 471:3, 474:13, 486:12, 486:18, 502:1, 525:22, 601:17, 602:5, 602:24 <b>identifies</b> [1] - 604:13 <b>identify</b> [8] - 442:18, 471:11, 510:2, 510:4, 585:14, 600:7, 613:23, 637:3 <b>ignored</b> [1] - 626:11	<b>ignores</b> [1] - 352:10 23 <b>II</b> [1] - 332:8 <b>ill</b> [1] - 369:16 <b>Illinois</b> [1] - 572:4 <b>image</b> [3] - 583:15, 583:16, 584:4 <b>imagine</b> [1] - 552:5 <b>IME</b> [3] - 353:3, 353:6, 354:11 <b>IMEs</b> [3] - 353:7, 354:3, 354:19 <b>immediately</b> [2] - 464:23, 465:8 <b>Impact</b> [4] - 341:12, 343:23, 344:4, 344:8 <b>impact</b> [11] - 357:7, 359:11, 394:14, 441:25, 442:14, 443:7, 449:6, 453:24, 455:7, 455:8, 480:5 <b>impacted</b> [2] - 448:11, 456:22 <b>Impacts</b> [1] - 341:5 <b>impacts</b> [13] - 387:21, 387:23, 401:15, 401:18, 426:19, 427:4, 442:16, 443:14, 448:14, 448:15, 451:24, 454:19, 456:6 <b>impaneled</b> [1] - 361:23 <b>impanels</b> [1] - 362:8 <b>implement</b> [2] - 468:23, 471:20 <b>implementing</b> [1] - 441:3 <b>important</b> [3] - 406:3, 514:21, 637:24 <b>importantly</b> [2] - 426:12, 622:10 <b>impossibility</b> [2] - 513:16, 515:20 <b>impressed</b> [2] - 501:16, 593:9 <b>impression</b> [1] - 619:14 <b>IN</b> [2] - 332:2, 332:4 <b>in-depth</b> [1] - 464:7 <b>inadequate</b> [1] - 502:21 <b>inadmissible</b> [1] - 629:12 <b>inappropriate</b> [1] - 370:4 <b>inaudible</b> [1] - 508:11 <b>inch</b> [9] - 557:25, 558:2, 558:16, 559:22, 563:13,
---	--	--	---	---



563:14, 567:11, 569:9, 569:10 <b>inches</b> [1] - 552:1 <b>incident</b> [1] - 537:7 <b>Incl</b> [1] - 341:18 <b>incline</b> [1] - 489:6 <b>include</b> [1] - 480:8 <b>included</b> [4] - 440:8, 480:12, 485:6, 572:13 <b>including</b> [1] - 447:14 <b>income</b> [1] - 575:21 <b>incorporate</b> [1] - 485:15 <b>incorrect</b> [2] - 438:23, 568:18 <b>incorrectly</b> [1] - 641:1 <b>increase</b> [6] - 364:10, 480:19, 480:23, 480:25, 483:13, 485:7 <b>increased</b> [8] - 364:8, 365:24, 482:6, 482:12, 483:12, 491:16, 515:9, 637:5 <b>increases</b> [3] - 364:19, 366:18, 482:4 <b>increasing</b> [2] - 363:23, 363:25 <b>incrementally</b> [1] - 553:2 <b>independent</b> [11] - 352:21, 353:3, 354:11, 354:13, 355:22, 355:24, 356:2, 361:1, 373:1, 492:7 <b>Independent</b> [1] - 341:12 <b>independently</b> [1] - 464:16 <b>indicate</b> [3] - 364:7, 380:1, 414:8 <b>indicated</b> [3] - 440:14, 443:13, 492:3 <b>indicates</b> [2] - 365:24, 431:19 <b>indicating</b> [1] - 573:20 <b>indicating</b> [20] - 393:7, 393:24, 424:11, 513:25, 578:18, 578:23, 580:17, 580:19, 580:21, 583:11, 600:8, 600:13, 600:15, 600:16, 600:24, 601:2, 605:18, 605:21, 609:3, 614:13 <b>individual</b> [8] - 355:2,	372:25, 384:24, 486:8, 498:23, 510:8, 550:14, 573:1 <b>individual's</b> [1] - 482:17 <b>individuals</b> [14] - 352:21, 352:22, 354:3, 354:25, 355:1, 355:7, 357:17, 358:1, 409:21, 426:23, 436:2, 437:4, 482:18, 549:24 <b>individuals'</b> [1] - 380:23 <b>induce</b> [1] - 437:6 <b>inductive</b> [1] - 440:11 <b>Industrial</b> [2] - 344:4, 344:8 <b>industrial</b> [5] - 505:8, 522:23, 617:7, 619:25, 622:22 <b>industry</b> [28] - 394:11, 397:17, 402:13, 415:8, 465:15, 482:22, 486:7, 494:6, 499:6, 505:3, 515:16, 529:13, 535:2, 535:4, 535:6, 535:8, 535:17, 536:6, 536:23, 539:1, 541:19, 544:7, 544:8, 544:16, 548:11, 561:18, 563:25, 564:1 <b>infer</b> [1] - 369:4 <b>influence</b> [1] - 453:8 <b>influenced</b> [1] - 508:5 <b>Information</b> [1] - 340:13 <b>information</b> [28] - 379:7, 406:19, 417:21, 426:22, 434:5, 444:5, 446:25, 454:15, 455:15, 467:7, 522:13, 527:4, 535:20, 535:24, 536:20, 537:2, 537:4, 537:10, 537:19, 538:21, 550:25, 554:14, 573:6, 607:25, 611:14, 613:20, 631:24, 635:20 <b>Infrasonic</b> [1] - 347:11 <b>infrasound</b> [50] - 374:9, 374:15, 375:3, 375:6,	375:10, 375:13, 375:15, 375:21, 375:22, 375:25, 376:14, 380:1, 380:16, 380:19, 381:9, 382:9, 382:17, 385:18, 386:6, 387:2, 387:4, 387:8, 388:15, 389:7, 389:13, 390:12, 390:20, 391:5, 391:11, 490:13, 491:3, 491:13, 503:4, 503:7, 503:17, 503:21, 504:5, 504:6, 515:25, 516:1, 516:3, 516:4, 516:9, 516:21, 516:23, 518:19, 518:24, 623:7 <b>Infrasound</b> [3] - 341:18, 347:13, 349:4 <b>Infrasounds</b> [1] - 340:23 <b>infrastructure</b> [1] - 518:20 <b>infrequent</b> [1] - 355:10 <b>inhabitants</b> [2] - 419:18, 419:20 <b>inherent</b> [1] - 612:22 <b>inheriting</b> [1] - 601:6 <b>initial</b> [1] - 472:19 <b>injuries</b> [1] - 376:4 <b>injury</b> [3] - 419:17, 419:19, 419:22 <b>injust</b> [2] - 420:7, 422:1 <b>inner</b> [10] - 380:2, 389:6, 389:9, 389:10, 389:11, 389:19, 390:6, 390:8, 390:13, 390:19 <b>innocent</b> [3] - 369:20, 629:9, 629:14 <b>input</b> [12] - 417:5, 421:13, 421:22, 422:1, 422:5, 423:16, 486:3, 486:4, 591:11, 610:17, 610:20, 610:24 <b>inquisitive</b> [1] - 398:7 <b>insert</b> [1] - 368:16 <b>inserted</b> [1] - 454:21 <b>inside</b> [7] - 490:21, 491:4, 493:2,	524:24, 558:20, 576:9, 622:13 <b>Insights</b> [1] - 342:23 <b>installations</b> [1] - 358:19 <b>installed</b> [1] - 534:19 <b>instance</b> [5] - 377:24, 450:4, 514:17, 536:15, 537:7 <b>instances</b> [3] - 535:4, 563:20, 587:17 <b>instead</b> [3] - 352:11, 454:21, 626:17 <b>institute</b> [1] - 477:16 <b>Institute</b> [1] - 342:4 <b>instrument</b> [1] - 372:17 <b>intelligently</b> [1] - 503:20 <b>intend</b> [1] - 573:13 <b>intended</b> [3] - 493:17, 555:15, 556:9 <b>intending</b> [1] - 467:14 <b>intensive</b> [1] - 575:24 <b>intent</b> [2] - 449:13, 573:11 <b>interacting</b> [1] - 460:21 <b>interactions</b> [1] - 620:15 <b>interconnection</b> [7] - 454:21, 454:25, 455:5, 455:19, 455:21, 455:23, 469:15 <b>interest</b> [3] - 434:2, 625:15, 626:13 <b>interested</b> [5] - 434:19, 571:18, 591:13, 591:16, 627:23 <b>interesting</b> [6] - 419:11, 449:20, 594:8, 606:25 <b>interference</b> [4] - 363:8, 440:11, 440:15, 444:16 <b>intermittent</b> [2] - 448:21, 449:6 <b>Intermodulation</b> [1] - 342:18 <b>international</b> [1] - 380:17 <b>International</b> [1] - 342:9 <b>internet</b> [1] - 379:8 <b>interpose</b> [1] - 579:10 <b>interpret</b> [1] - 472:1 <b>interpretation</b> [2] - 482:7, 629:10	<b>interrupt</b> [1] - 625:24 2 4 <b>interrupting</b> [1] - 625:21 <b>intersection</b> [1] - 584:10 <b>Interstate</b> [1] - 420:20 <b>interstate</b> [4] - 420:21, 599:6, 599:8, 599:13 <b>intervals</b> [3] - 507:2, 507:4, 507:5 <b>Intervenor</b> [7] - 345:21, 345:22, 345:24, 346:3, 349:14, 490:24, 570:13 <b>INTERVENOR'S</b> [3] - 335:18, 336:2, 336:7 <b>Intervenors</b> [11] - 332:17, 345:6, 345:9, 345:12, 345:15, 345:18, 346:4, 346:10, 349:19, 349:20, 349:22 <b>Intervenors'</b> [6] - 348:17, 348:18, 348:19, 348:20, 348:21, 348:24 <b>INTERVENORS'</b> [6] - 336:11, 337:10, 338:2, 347:6, 348:2, 349:2 <b>intervention</b> [1] - 352:9 <b>interview</b> [1] - 358:1 <b>intimately</b> [2] - 534:22, 534:23 <b>intrigue</b> [1] - 434:2 <b>introduce</b> [7] - 429:18, 440:10, 473:3, 522:19, 571:10, 596:3, 614:9 <b>introduction</b> [1] - 429:17 <b>intuitively</b> [1] - 563:17 <b>Invenenergy</b> [1] - 346:14 <b>inventory</b> [1] - 447:15 <b>inversion</b> [4] - 487:14, 487:18, 487:20, 487:22 <b>invert</b> [1] - 391:21 <b>investigating</b> [1] - 364:25 <b>Investigation</b> [1] - 342:15 <b>investigation</b> [1] - 363:21 <b>investor</b> [2] - 409:18, 410:8 <b>invite</b> [1] - 433:20
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<p><b>involve</b> <sup>[1]</sup> - 636:2</p> <p><b>involved</b> <sup>[9]</sup> - 353:19, 389:20, 402:6, 402:25, 536:12, 537:3, 556:5, 587:21, 598:21</p> <p><b>involving</b> <sup>[2]</sup> - 386:14, 523:1</p> <p><b>Iowa</b> <sup>[2]</sup> - 346:21, 348:4</p> <p><b>iPhone</b> <sup>[1]</sup> - 616:17</p> <p><b>Irene</b> <sup>[1]</sup> - 342:4</p> <p><b>irrelevant</b> <sup>[1]</sup> - 532:9</p> <p><b>Island</b> <sup>[2]</sup> - 344:13, 344:14</p> <p><b>ISO</b> <sup>[9]</sup> - 493:14, 494:11, 505:1, 505:3, 505:7, 506:22, 510:6, 512:2, 516:24</p> <p><b>issue</b> <sup>[12]</sup> - 358:15, 362:8, 373:11, 419:16, 445:5, 478:19, 503:14, 536:8, 536:10, 537:17, 539:7, 545:7</p> <p><b>issued</b> <sup>[1]</sup> - 419:14</p> <p><b>issues</b> <sup>[13]</sup> - 375:16, 413:15, 455:2, 540:18, 572:19, 572:20, 572:23, 572:25, 587:7, 587:9, 587:13, 589:7, 620:6</p> <p><b>items</b> <sup>[2]</sup> - 527:14</p> <p><b>itself</b> <sup>[14]</sup> - 396:20, 482:16, 486:6, 498:18, 498:19, 510:21, 527:21, 530:11, 546:4, 547:18, 553:2, 558:1, 558:12</p>	<p><b>jaw</b> <sup>[1]</sup> - 575:9</p> <p><b>jeez</b> <sup>[1]</sup> - 371:10</p> <p><b>JEFFREY</b> <sup>[1]</sup> - 334:10</p> <p><b>JENKINS</b> <sup>[41]</sup> - 336:8, 370:24, 382:22, 417:13, 418:2, 428:23, 437:22, 469:7, 469:9, 469:20, 509:3, 553:12, 569:24, 589:8, 610:2, 613:14, 617:20, 618:25, 619:3, 619:7, 621:7, 621:20, 624:9, 626:6, 627:1, 628:4, 628:7, 628:24, 629:6, 629:19, 631:11, 639:15, 639:20, 639:25, 640:14, 640:20, 640:22, 641:6, 641:11, 641:22, 642:4</p> <p><b>Jenkins</b> <sup>[36]</sup> - 332:20, 333:5, 333:8, 333:22, 334:5, 334:21, 335:7, 336:9, 336:18, 337:6, 337:8, 337:22, 337:23, 338:5, 339:8, 370:23, 382:21, 417:11, 428:22, 437:21, 469:6, 509:2, 521:7, 569:23, 589:6, 610:1, 613:12, 613:15, 613:18, 614:2, 620:14, 625:21, 627:18, 628:1, 633:25, 637:22</p> <p><b>JENKINS'S</b> <sup>[1]</sup> - 349:15</p> <p><b>Jenkins's</b> <sup>[1]</sup> - 345:24</p> <p><b>JEROME</b> <sup>[1]</sup> - 338:7</p> <p><b>JERRY</b> <sup>[1]</sup> - 337:16</p> <p><b>jet</b> <sup>[1]</sup> - 576:20</p> <p><b>job</b> <sup>[16]</sup> - 393:19, 397:14, 397:18, 397:21, 416:23, 423:23, 424:19, 426:8, 426:19, 527:8, 570:5, 570:15, 593:11, 594:6, 595:14</p> <p><b>jobs</b> <sup>[2]</sup> - 397:4, 397:9</p> <p><b>Jointly</b> <sup>[1]</sup> - 346:10</p> <p><b>jointly</b> <sup>[2]</sup> - 464:14,</p>	<p>471:13</p> <p><b>judging</b> <sup>[1]</sup> - 572:13</p> <p><b>judgment</b> <sup>[1]</sup> - 355:24</p> <p><b>July</b> <sup>[4]</sup> - 342:24, 575:4, 607:11, 611:1</p> <p><b>jump</b> <sup>[1]</sup> - 398:23</p> <p><b>Junction</b> <sup>[1]</sup> - 469:16</p> <p><b>juncture</b> <sup>[1]</sup> - 463:16</p> <p><b>June</b> <sup>[4]</sup> - 343:19, 348:5, 575:3, 611:1</p> <p><b>Jurgens</b> <sup>[11]</sup> - 411:15, 411:24, 412:7, 414:7, 415:2, 616:22, 617:17, 617:25, 618:5, 618:13, 618:18</p> <p><b>jurisdiction</b> <sup>[6]</sup> - 455:21, 626:23, 627:4, 627:7, 640:12, 641:21</p>	<p><b>kid</b> <sup>[2]</sup> - 397:22, 596:19</p> <p><b>kids</b> <sup>[16]</sup> - 378:6, 393:16, 393:21, 394:14, 397:12, 400:16, 423:24, 424:15, 446:7, 601:7, 606:21, 606:22, 607:4, 607:25, 610:13, 611:16</p> <p><b>killed</b> <sup>[3]</sup> - 463:7, 464:24, 468:3</p> <p><b>kilograms</b> <sup>[1]</sup> - 538:12</p> <p><b>kilometers</b> <sup>[3]</sup> - 381:22, 534:16, 591:1</p> <p><b>Kim</b> <sup>[1]</sup> - 341:13</p> <p><b>Kimura</b> <sup>[1]</sup> - 342:13</p> <p><b>kind</b> <sup>[45]</sup> - 368:14, 371:18, 372:19, 373:21, 376:4, 381:21, 385:12, 393:8, 394:19, 396:3, 396:4, 397:23, 415:14, 420:16, 423:20, 426:16, 434:13, 450:18, 460:21, 484:9, 487:2, 494:5, 500:20, 510:16, 513:2, 513:23, 534:20, 535:20, 555:18, 562:19, 571:22, 572:21, 576:23, 580:13, 582:17, 585:6, 592:16, 593:17, 596:1, 613:6, 615:3, 624:5, 625:18, 626:4, 630:18</p> <p><b>kinds</b> <sup>[3]</sup> - 381:20, 539:2, 548:19</p> <p><b>KJ15</b> <sup>[1]</sup> - 349:21</p> <p><b>KJ4</b> <sup>[1]</sup> - 349:16</p> <p><b>KJ5</b> <sup>[1]</sup> - 349:18</p> <p><b>KJ6</b> <sup>[1]</sup> - 349:19</p> <p><b>knobs</b> <sup>[1]</sup> - 527:20</p> <p><b>knock</b> <sup>[1]</sup> - 574:20</p> <p><b>knowing</b> <sup>[3]</sup> - 466:10, 508:1, 608:4</p> <p><b>knowledge</b> <sup>[14]</sup> - 410:6, 435:4, 437:3, 437:8, 453:12, 466:12, 504:9, 515:24, 516:1, 558:23, 572:24, 579:15, 617:13, 625:23</p> <p><b>known</b> <sup>[13]</sup> - 371:21,</p>	<p>373:14, 373:16, 376:9, 382:8, 409:17, 426:22, 471:1, 564:8, 564:15, 564:16, 610:16, 610:19</p> <p><b>knows</b> <sup>[4]</sup> - 539:24, 540:13, 550:19, 551:3</p> <p><b>Kristen</b> <sup>[1]</sup> - 332:23</p> <p><b>KRISTIE</b> <sup>[1]</sup> - 332:10</p>
<b>L</b>				
<p><b>L.(2017)</b> <sup>[1]</sup> - 343:3</p> <p><b>L90</b> <sup>[10]</sup> - 495:16, 495:19, 495:23, 496:21, 497:18, 497:19, 497:23, 587:4, 587:5, 587:6</p> <p><b>L90s</b> <sup>[1]</sup> - 587:2</p> <p><b>Lab</b> <sup>[2]</sup> - 341:6, 344:21</p> <p><b>labeled</b> <sup>[2]</sup> - 523:15, 526:3</p> <p><b>labeling</b> <sup>[2]</sup> - 603:9, 608:15</p> <p><b>Labor</b> <sup>[1]</sup> - 340:20</p> <p><b>laboratory</b> <sup>[1]</sup> - 503:1</p> <p><b>lack</b> <sup>[3]</sup> - 415:10, 475:13, 629:7</p> <p><b>LAeq</b> <sup>[4]</sup> - 586:9, 605:2, 605:4</p> <p><b>laid</b> <sup>[1]</sup> - 580:13</p> <p><b>Lake</b> <sup>[1]</sup> - 550:22</p> <p><b>lake</b> <sup>[1]</sup> - 499:1</p> <p><b>Land</b> <sup>[1]</sup> - 348:11</p> <p><b>land</b> <sup>[16]</sup> - 358:19, 404:20, 404:24, 405:7, 407:20, 407:24, 408:13, 409:22, 410:3, 410:14, 412:23, 428:12, 434:18, 437:3, 447:13, 601:8</p> <p><b>land-based</b> <sup>[1]</sup> - 358:19</p> <p><b>Landesanstalt</b> <sup>[1]</sup> - 341:19</p> <p><b>landholders</b> <sup>[1]</sup> - 434:19</p> <p><b>landowner</b> <sup>[4]</sup> - 392:24, 395:4, 407:7, 412:21</p> <p><b>landowners</b> <sup>[6]</sup> - 399:7, 409:6, 428:13, 428:15, 435:24, 524:17</p> <p><b>Landowners</b> <sup>[1]</sup> - 349:7</p> <p><b>Lang</b> <sup>[1]</sup> - 344:11</p>				
<b>K</b>				
<p><b>Kamp</b> <sup>[1]</sup> - 342:4</p> <p><b>Kappa</b> <sup>[1]</sup> - 571:25</p> <p><b>KAREN</b> <sup>[2]</sup> - 333:15, 336:8</p> <p><b>Karen</b> <sup>[7]</sup> - 332:13, 332:20, 345:24, 593:12, 603:22, 613:15, 614:2</p> <p><b>Katlyn</b> <sup>[1]</sup> - 406:19</p> <p><b>KEARNEY</b> <sup>[1]</sup> - 339:3</p> <p><b>Kearney</b> <sup>[1]</sup> - 347:3</p> <p><b>keep</b> <sup>[13]</sup> - 393:20, 395:5, 399:6, 413:18, 417:24, 425:9, 509:15, 529:23, 535:4, 537:9, 619:1, 627:18, 628:1</p> <p><b>keeping</b> <sup>[2]</sup> - 460:22, 460:25</p> <p><b>keeps</b> <sup>[1]</sup> - 535:20</p> <p><b>KEITH</b> <sup>[1]</sup> - 336:15</p> <p><b>Keith</b> <sup>[1]</sup> - 635:2</p> <p><b>Kelli</b> <sup>[7]</sup> - 332:21, 345:22, 595:20, 595:22, 596:5, 608:6, 609:17</p> <p><b>KELLI</b> <sup>[1]</sup> - 336:3</p> <p><b>kept</b> <sup>[3]</sup> - 535:24, 573:18, 621:13</p> <p><b>Kevin</b> <sup>[1]</sup> - 348:8</p> <p><b>KEVIN</b> <sup>[1]</sup> - 338:12</p> <p><b>Key</b> <sup>[1]</sup> - 346:17</p> <p><b>kick</b> <sup>[2]</sup> - 433:24, 592:1</p> <p><b>kicked</b> <sup>[1]</sup> - 443:21</p> <p><b>kicks</b> <sup>[1]</sup> - 546:5</p>				
<b>J</b>				
<p><b>James</b> <sup>[6]</sup> - 344:11, 347:7, 479:23, 482:1, 491:1, 498:24</p> <p><b>JAMES</b> <sup>[1]</sup> - 337:11</p> <p><b>James's</b> <sup>[3]</sup> - 479:1, 479:15, 498:5</p> <p><b>Jamie</b> <sup>[2]</sup> - 344:3, 344:7</p> <p><b>January</b> <sup>[2]</sup> - 499:18, 573:15</p> <p><b>Japan</b> <sup>[4]</sup> - 341:22, 341:23, 342:16, 342:16</p> <p><b>Jason</b> <sup>[2]</sup> - 344:3, 344:7</p>				

<p><b>language</b> [3] - 373:6, 500:23, 565:25</p> <p><b>laptop</b> [1] - 551:1</p> <p><b>large</b> [6] - 358:6, 462:17, 482:9, 517:4, 536:8, 615:14</p> <p><b>larger</b> [4] - 359:7, 365:11, 508:20, 510:24</p> <p><b>largest</b> [1] - 358:20</p> <p><b>last</b> [43] - 358:17, 366:8, 368:24, 384:21, 390:17, 416:10, 417:6, 418:6, 420:14, 438:12, 441:13, 443:21, 447:20, 447:21, 447:22, 471:2, 477:16, 485:1, 501:17, 503:24, 522:7, 547:7, 553:6, 572:17, 575:6, 575:19, 575:25, 587:8, 587:10, 588:1, 589:1, 595:2, 596:14, 597:25, 599:11, 599:14, 610:25, 613:9, 628:12, 635:11</p> <p><b>late</b> [2] - 443:21, 628:7</p> <p><b>lately</b> [2] - 573:12, 575:17</p> <p><b>laude</b> [1] - 571:25</p> <p><b>Laura</b> [2] - 459:11, 462:13</p> <p><b>law</b> [15] - 369:18, 419:13, 421:6, 524:17, 624:21, 638:21, 638:22, 638:23, 639:1, 639:8, 639:9, 639:10, 639:12, 639:22, 640:8</p> <p><b>law's</b> [1] - 397:24</p> <p><b>Lawrence</b> [3] - 341:6, 344:21, 344:22</p> <p><b>laws</b> [1] - 630:24</p> <p><b>lawsuit</b> [5] - 353:10, 353:11, 353:14, 353:17, 353:20</p> <p><b>lawyer</b> [1] - 413:7</p> <p><b>lawyers</b> [3] - 353:19, 354:14, 397:8</p> <p><b>Lay</b> [1] - 345:3</p> <p><b>laying</b> [1] - 551:1</p> <p><b>layout</b> [9] - 443:7, 444:11, 484:16, 484:18, 485:10, 486:16, 509:13,</p>	<p>509:17, 578:13</p> <p><b>Layout</b> [1] - 343:21</p> <p><b>layouts</b> [4] - 484:20, 484:21, 484:22, 484:25</p> <p><b>layperson</b> [1] - 593:13</p> <p><b>layperson's</b> [1] - 605:14</p> <p><b>lead</b> [3] - 371:24, 487:5, 487:11</p> <p><b>leaders</b> [1] - 572:12</p> <p><b>leading</b> [1] - 422:21</p> <p><b>leads</b> [1] - 469:17</p> <p><b>learn</b> [1] - 441:20</p> <p><b>learned</b> [3] - 470:19, 524:20, 535:3</p> <p><b>Learned</b> [1] - 341:5</p> <p><b>Lease</b> [2] - 348:10, 348:12</p> <p><b>lease</b> [8] - 409:7, 411:1, 411:11, 412:12, 414:7, 434:10, 434:13, 435:25</p> <p><b>leased</b> [1] - 428:12</p> <p><b>leases</b> [1] - 428:16</p> <p><b>least</b> [12] - 352:20, 453:12, 461:14, 481:23, 514:3, 514:4, 575:24, 576:17, 577:15, 577:19, 588:19, 594:8</p> <p><b>leave</b> [4] - 432:9, 460:7, 460:19, 576:5</p> <p><b>leaving</b> [3] - 460:6, 597:8, 615:22</p> <p><b>led</b> [3] - 406:5, 444:21, 629:17</p> <p><b>leery</b> [1] - 621:16</p> <p><b>left</b> [17] - 351:7, 361:1, 382:13, 446:16, 499:24, 521:12, 531:11, 558:23, 596:10, 603:16, 605:16, 605:19, 605:21, 605:25, 606:4, 606:7, 607:7</p> <p><b>left-side</b> [1] - 531:11</p> <p><b>legal</b> [2] - 412:4, 636:10</p> <p><b>legally</b> [1] - 413:7</p> <p><b>Legislature</b> [1] - 341:10</p> <p><b>legitimate</b> [1] - 592:9</p> <p><b>length</b> [6] - 453:13, 453:14, 505:15, 559:5, 559:10, 563:4</p> <p><b>Leq</b> [8] - 493:1, 493:8, 496:9, 497:18,</p>	<p>515:13, 515:16, 587:5, 587:6</p> <p><b>Leqs</b> [2] - 587:1, 587:2</p> <p><b>less</b> [22] - 359:5, 360:12, 360:13, 360:23, 383:20, 383:21, 383:24, 385:17, 398:1, 414:11, 467:23, 494:19, 496:21, 500:12, 520:15, 520:16, 534:13, 558:13, 563:13, 567:12, 622:3</p> <p><b>lessee</b> [2] - 412:22, 412:25</p> <p><b>lessons</b> [1] - 535:3</p> <p><b>Letter</b> [2] - 341:13, 348:14</p> <p><b>letter</b> [1] - 591:11</p> <p><b>letting</b> [1] - 363:5</p> <p><b>Level</b> [1] - 441:8</p> <p><b>level</b> [43] - 361:4, 364:5, 364:11, 364:13, 365:7, 365:14, 381:21, 382:10, 382:16, 382:17, 384:11, 386:6, 387:2, 400:2, 400:5, 400:20, 401:7, 466:16, 481:5, 482:4, 482:5, 482:10, 482:20, 487:9, 488:15, 493:1, 495:17, 497:2, 500:2, 506:12, 507:10, 509:11, 510:7, 517:2, 520:8, 520:10, 520:15, 588:12, 592:5, 592:24, 627:20, 635:13</p> <p><b>level's</b> [1] - 507:13</p> <p><b>Levels</b> [1] - 346:24</p> <p><b>levels</b> [62] - 360:8, 360:11, 360:19, 361:6, 361:10, 363:18, 363:22, 364:1, 364:7, 365:2, 366:18, 367:4, 375:17, 375:23, 376:11, 378:16, 379:22, 380:2, 381:5, 382:8, 384:5, 384:14, 388:12, 390:12, 390:19, 391:4, 391:11, 399:22, 425:4, 426:20, 480:14,</p>	<p>481:13, 487:6, 487:12, 488:8, 489:4, 493:18, 494:23, 495:19, 495:23, 497:1, 497:16, 497:19, 498:3, 498:12, 500:11, 500:12, 501:2, 501:12, 507:21, 508:6, 511:6, 519:24, 520:4, 520:17, 541:24, 541:25, 585:21, 586:8, 586:25, 591:3, 630:19</p> <p><b>lexicon</b> [1] - 451:20</p> <p><b>liaison</b> [1] - 524:16</p> <p><b>liberal</b> [1] - 446:7</p> <p><b>life</b> [14] - 397:2, 402:21, 403:25, 415:19, 420:7, 456:22, 465:11, 587:14, 606:20, 606:24, 614:20, 622:19, 622:21, 633:3</p> <p><b>lifelong</b> [1] - 571:17</p> <p><b>lifestyle</b> [1] - 423:23</p> <p><b>light</b> [3] - 529:5, 565:17, 567:16</p> <p><b>lightening</b> [3] - 564:14, 564:15, 599:19</p> <p><b>lighter</b> [1] - 456:14</p> <p><b>lightheadedness</b> [1] - 371:24</p> <p><b>lightly</b> [1] - 422:9</p> <p><b>lights</b> [1] - 622:7</p> <p><b>likelihood</b> [3] - 452:3, 467:18, 532:15</p> <p><b>likely</b> [14] - 377:25, 453:24, 460:4, 460:18, 462:4, 464:11, 520:15, 530:3, 530:6, 530:19, 542:12, 545:3, 564:11</p> <p><b>limit</b> [4] - 459:1, 493:22, 508:19, 514:22</p> <p><b>limitation</b> [1] - 505:20</p> <p><b>limitations</b> [2] - 505:9, 516:24</p> <p><b>limited</b> [6] - 454:20, 455:20, 463:11, 466:12, 508:18</p> <p><b>limits</b> [2] - 485:23, 494:18</p> <p><b>line</b> [17] - 360:7,</p>	<p>360:17, 414:13, 26 415:14, 426:13, 453:23, 454:23, 469:16, 501:17, 552:16, 558:3, 577:23, 578:19, 584:15, 591:1, 601:10, 638:10</p> <p><b>lines</b> [20] - 394:22, 415:6, 415:11, 417:15, 418:1, 440:11, 442:23, 442:25, 463:4, 463:7, 483:14, 504:15, 519:19, 552:2, 552:19, 552:21, 588:9, 588:17, 595:13, 641:18</p> <p><b>lingering</b> [1] - 641:23</p> <p><b>lingo</b> [1] - 387:13</p> <p><b>Link</b> [1] - 342:20</p> <p><b>Lisa</b> [9] - 332:15, 332:17, 345:7, 345:10, 345:13, 345:16, 345:19, 346:5, 524:7</p> <p><b>List</b> [1] - 349:7</p> <p><b>list</b> [6] - 371:16, 371:18, 440:16, 446:17, 477:8, 503:6</p> <p><b>listed</b> [2] - 449:23, 470:11</p> <p><b>listen</b> [4] - 392:22, 392:23, 529:24, 599:7</p> <p><b>listened</b> [4] - 491:24, 592:14, 619:10, 626:8</p> <p><b>listeners</b> [1] - 406:16</p> <p><b>listening</b> [3] - 491:21, 511:17, 627:11</p> <p><b>listing</b> [1] - 443:6</p> <p><b>lists</b> [1] - 431:15</p> <p><b>literally</b> [1] - 513:1</p> <p><b>Literature</b> [1] - 341:8</p> <p><b>literature</b> [20] - 357:11, 357:22, 364:15, 364:17, 364:25, 365:22, 369:6, 369:14, 370:4, 370:6, 371:5, 375:5, 379:9, 380:4, 380:6, 391:4, 391:6, 391:7, 391:10, 507:4</p> <p><b>litigation</b> [2] - 354:18, 355:17</p> <p><b>livable</b> [1] - 623:5</p> <p><b>live</b> [29] - 392:19, 393:15, 393:16,</p>
--	---	---	---	---

396:19, 401:5, 424:20, 428:14, 571:15, 578:24, 581:23, 583:3, 599:23, 599:24, 600:15, 600:24, 607:2, 612:19, 614:2, 614:4, 614:11, 615:25, 616:1, 616:2, 619:23, 622:22, 623:4, 623:10, 638:6 <b>lived</b> [8] - 402:21, 404:9, 406:10, 415:16, 424:8, 424:12, 553:9, 614:23 <b>livelihood</b> [1] - 417:3 <b>lives</b> [2] - 393:24, 394:1 <b>livestock</b> [1] - 393:20 <b>living</b> [12] - 357:17, 369:19, 370:20, 416:2, 416:5, 428:17, 488:3, 489:11, 500:18, 549:24, 553:7, 607:2 <b>LLC</b> [16] - 332:3, 346:14, 346:16, 346:21, 351:3, 438:19, 438:24, 439:1, 439:2, 439:4, 439:9, 617:25, 635:6, 635:8, 635:15, 636:6 <b>LLCs</b> [2] - 639:4, 639:17 <b>load</b> [1] - 520:13 <b>local</b> [6] - 384:7, 397:9, 440:5, 445:3, 453:10, 524:17 <b>localization</b> [1] - 384:7 <b>locally</b> [1] - 398:16 <b>locate</b> [1] - 407:15 <b>located</b> [5] - 435:5, 467:22, 603:16, 604:2, 619:18 <b>Location</b> [1] - 343:9 <b>location</b> [13] - 415:6, 415:17, 426:12, 444:23, 485:19, 495:20, 496:1, 496:3, 500:17, 519:25, 586:16, 600:7, 628:18 <b>locations</b> [5] - 495:10, 496:18, 509:14, 510:14, 511:2 <b>locked</b> [1] - 610:15	<b>lockout/tagout</b> [1] - 527:15 <b>log</b> [2] - 550:25, 551:2 <b>log-in</b> [1] - 550:25 <b>logarithmic</b> [2] - 501:9, 501:15 <b>logarithmically</b> [1] - 501:13 <b>long-term</b> [1] - 480:5 <b>look</b> [44] - 367:18, 373:6, 393:2, 394:7, 394:11, 397:1, 397:5, 398:9, 401:21, 410:23, 426:16, 428:10, 431:14, 435:7, 438:9, 448:11, 464:7, 464:13, 466:2, 470:7, 470:10, 477:6, 478:18, 502:11, 502:12, 502:13, 508:19, 510:9, 511:3, 511:4, 516:16, 517:4, 517:9, 529:24, 531:7, 534:5, 539:16, 547:2, 562:22, 565:11, 583:7, 585:23, 601:10, 631:25 <b>looked</b> [16] - 363:17, 375:4, 398:23, 435:1, 448:1, 490:24, 505:21, 517:8, 589:25, 602:2, 611:15, 616:4, 616:12, 616:15, 619:9, 630:24 <b>looking</b> [35] - 363:18, 389:5, 392:1, 429:13, 433:11, 455:24, 456:17, 466:11, 485:14, 495:19, 497:19, 500:9, 507:19, 513:11, 513:12, 518:1, 519:19, 543:7, 554:16, 562:14, 577:25, 585:12, 585:13, 586:1, 603:4, 604:10, 604:22, 604:23, 605:1, 605:7, 605:8, 607:18, 616:18, 617:6, 619:16 <b>looks</b> [19] - 358:20, 362:24, 426:11, 435:22, 436:12, 441:19, 445:13, 448:12, 484:9, 486:16, 495:9, 496:1, 497:22, 512:24, 533:21, 540:18, 584:11, 601:15, 605:13 <b>looming</b> [1] - 622:24 <b>loop</b> [1] - 420:16 <b>loose</b> [1] - 564:17 <b>Lori</b> [1] - 348:6 <b>lose</b> [1] - 607:6 <b>losing</b> [2] - 454:3 <b>loss</b> [5] - 383:9, 383:11, 383:17, 383:22, 385:4 <b>lost</b> [4] - 440:16, 506:13, 574:22, 596:10 <b>loud</b> [5] - 359:24, 534:9, 596:22, 598:13, 599:18 <b>louder</b> [3] - 480:20, 506:24, 576:24 <b>loudest</b> [2] - 581:9, 581:13 <b>love</b> [4] - 381:2, 446:5, 446:6, 511:14 <b>lovely</b> [1] - 606:18 <b>loves</b> [2] - 597:10 <b>low</b> [50] - 374:9, 374:14, 374:17, 375:24, 380:1, 380:18, 380:24, 381:7, 381:9, 381:23, 382:8, 382:9, 390:12, 390:19, 391:4, 391:10, 391:21, 449:10, 449:13, 452:2, 452:3, 452:5, 452:6, 452:9, 452:20, 454:1, 487:15, 487:22, 490:13, 491:3, 491:13, 495:14, 502:1, 502:2, 502:25, 503:4, 516:5, 516:7, 516:14, 517:5, 517:6, 517:11, 517:12, 518:6, 623:6, 636:21, 637:5 <b>Low</b> [2] - 340:22, 341:18 <b>Low-frequency</b> [2] - 340:22, 341:18 <b>lower</b> [11] - 373:22, 381:13, 381:19, 386:6, 488:15, 499:25, 506:11, 506:16, 516:7, 583:17, 583:20 <b>lowest</b> [1] - 493:24 <b>LUBW</b> [1] - 341:19 <b>luck</b> [1] - 446:16 <b>lucky</b> [1] - 409:8 <b>lunch</b> [3] - 446:21, 476:11, 476:18 <b>lung</b> [1] - 372:13 <b>Lyle</b> [1] - 408:19	<b>M</b> <b>M-I-C-H-A-U-D</b> [1] - 363:4 <b>MA</b> [1] - 341:10 <b>ma'am</b> [2] - 374:5, 377:8 <b>machinery</b> [1] - 580:15 <b>magnitude</b> [2] - 376:11, 395:19 <b>mail</b> [3] - 588:2, 595:8, 624:15 <b>mailbox</b> [1] - 584:2 <b>mails</b> [1] - 631:22 <b>Main</b> [3] - 332:25, 394:13, 402:14 <b>main</b> [3] - 577:21, 614:18, 622:4 <b>maintain</b> [3] - 449:8, 449:14, 594:22 <b>maintenance</b> [4] - 402:17, 416:3, 535:16, 615:7 <b>major</b> [6] - 390:8, 415:11, 508:17, 551:23, 551:24, 551:25 <b>majority</b> [8] - 368:9, 368:14, 369:3, 428:1, 431:22, 485:9, 497:23, 611:13 <b>malfunction</b> [5] - 535:9, 535:11, 537:8, 560:3, 564:12 <b>Malfunctioned/Burnt</b> [1] - 348:6 <b>malfunctioning</b> [5] - 536:15, 537:16, 537:20, 564:9, 564:15 <b>Malfunctioning</b> [1] - 348:3 <b>malfunctions</b> [5] - 533:25, 535:5, 535:18, 536:2, 536:4	<b>Malsam</b> [1] - 341:14 27 <b>Malsam-Rysdon</b> [1] - 341:14 <b>mammals</b> [1] - 389:22 <b>man</b> [2] - 459:7, 634:17 <b>management</b> [2] - 465:18, 551:12 <b>manager</b> [6] - 429:21, 430:9, 440:4, 524:9, 524:10 <b>manner</b> [1] - 503:8 <b>manual</b> [2] - 526:25, 527:1 <b>Manual</b> [10] - 346:13, 346:13, 527:7, 527:18, 527:19, 528:3, 528:4, 565:20, 566:13, 566:14 <b>manually</b> [1] - 544:11 <b>manuals</b> [2] - 527:6, 537:3 <b>manufactured</b> [1] - 558:20 <b>manufacturer</b> [8] - 525:14, 527:17, 535:20, 535:23, 537:5, 537:6, 537:14, 537:18 <b>Map</b> [4] - 349:10, 349:11, 571:7 <b>map</b> [46] - 393:3, 394:20, 407:14, 407:16, 427:18, 428:10, 433:11, 434:21, 434:23, 435:1, 435:7, 435:8, 435:17, 435:18, 435:23, 436:11, 436:14, 436:15, 436:18, 436:21, 509:25, 510:18, 511:2, 511:4, 512:22, 513:23, 579:22, 583:18, 584:7, 586:15, 600:6, 600:9, 600:18, 600:22, 601:10, 601:23, 602:5, 602:24, 603:8, 603:11, 604:10, 604:14, 604:23, 608:18 <b>mapping</b> [2] - 447:15 <b>Maps</b> [6] - 347:17, 347:22, 348:5, 348:8, 583:15, 583:16 <b>maps</b> [3] - 578:13,
---	---	--	---

595:12 <b>March</b> [5] - 342:19, 466:18, 466:20, 484:6, 484:7 <b>MARK</b> [1] - 333:10 <b>marked</b> [3] - 430:18, 430:23, 604:18 <b>market</b> [1] - 623:11 <b>Market</b> [1] - 343:23 <b>Markets</b> [1] - 341:6 <b>MaRous</b> [2] - 343:22, 344:22 <b>MAROUS</b> [1] - 334:3 <b>married</b> [3] - 424:13, 614:24, 615:23 <b>Marsha</b> [7] - 332:17, 345:7, 345:10, 345:12, 345:15, 345:18, 346:5 <b>Maryland</b> [1] - 377:3 <b>MAS</b> [1] - 444:19 <b>mask</b> [1] - 488:12 <b>Mass</b> [1] - 344:20 <b>Massachusetts</b> [20] - 356:11, 356:15, 356:20, 357:3, 357:21, 361:23, 362:1, 362:2, 362:5, 362:8, 362:10, 362:12, 362:14, 362:17, 364:14, 366:20, 367:22, 368:1, 368:3, 375:4 <b>master's</b> [2] - 430:4, 581:21 <b>Match</b> [1] - 344:17 <b>mater</b> [1] - 572:3 <b>material</b> [1] - 358:4 <b>Materials</b> [1] - 347:8 <b>mates</b> [1] - 470:15 <b>math</b> [2] - 409:2, 554:13 <b>mathematics</b> [1] - 501:15 <b>MATTER</b> [1] - 332:2 <b>matter</b> [17] - 350:2, 351:3, 353:24, 356:2, 367:6, 385:10, 397:20, 430:16, 473:13, 478:4, 513:10, 522:4, 524:6, 531:4, 558:13, 592:19, 643:10 <b>max</b> [3] - 487:10, 492:8, 521:2 <b>maxed</b> [1] - 417:25 <b>maximum</b> [9] - 487:9, 520:9, 520:13, 520:24, 538:9,	539:19, 557:17, 558:21, 568:5 <b>MAY</b> [1] - 338:20 <b>May's</b> [1] - 347:17 <b>MCCOMSEY</b> [1] - 643:5 <b>McComsey</b> [3] - 332:24, 643:17, 643:18 <b>McCullough</b> [1] - 344:15 <b>McDonnell</b> [3] - 343:20, 473:6, 485:19 <b>McGinnis</b> [1] - 630:7 <b>McGovern</b> [1] - 571:21 <b>mean</b> [48] - 352:1, 355:14, 367:4, 371:4, 371:5, 375:16, 378:11, 394:11, 396:7, 397:11, 398:10, 400:13, 401:3, 401:11, 401:25, 402:2, 402:19, 403:3, 403:6, 403:23, 406:9, 408:15, 411:5, 414:3, 415:7, 420:4, 422:6, 422:21, 439:25, 446:23, 451:10, 455:25, 456:3, 461:16, 462:8, 466:14, 467:2, 503:7, 520:6, 523:15, 523:23, 552:11, 569:9, 592:8, 592:20, 606:21, 625:23 <b>meaning</b> [3] - 365:6, 381:18, 538:19 <b>means</b> [11] - 388:16, 394:19, 396:17, 450:3, 451:11, 467:2, 568:15, 569:12, 575:21, 592:8 <b>meant</b> [3] - 421:21, 638:15, 638:23 <b>Measure</b> [1] - 346:19 <b>measure</b> [2] - 504:6, 519:9 <b>measured</b> [6] - 481:13, 496:3, 496:23, 508:6, 519:4, 592:5 <b>measurement</b> [15] - 387:7, 494:9, 495:2, 495:6, 495:10, 495:20, 496:11,	496:13, 497:20, 506:2, 507:3, 508:19, 560:11, 586:16, 586:18 <b>measurements</b> [17] - 481:15, 494:22, 496:16, 496:17, 496:20, 497:22, 497:23, 506:7, 507:20, 508:7, 508:9, 514:16, 539:7, 539:8, 586:2, 588:11, 592:16 <b>measures</b> [9] - 365:13, 441:4, 452:13, 452:16, 456:9, 471:24, 546:8, 546:24, 547:8 <b>measuring</b> [4] - 388:24, 496:25, 508:13, 508:22 <b>mechanism</b> [4] - 369:22, 371:21, 375:19, 546:12 <b>mechanisms</b> [1] - 390:2 <b>Meclozine</b> [1] - 574:19 <b>media</b> [1] - 535:7 <b>Medical</b> [4] - 340:9, 340:11, 340:15, 340:17 <b>medical</b> [12] - 352:5, 352:21, 353:4, 354:12, 354:13, 372:7, 386:5, 572:19, 572:23, 573:8, 574:7, 593:25 <b>medium</b> [1] - 452:9 <b>meet</b> [4] - 509:19, 511:7, 512:16, 512:17 <b>meeting</b> [37] - 410:11, 417:5, 417:8, 421:9, 421:11, 421:16, 421:19, 421:23, 422:2, 422:5, 423:16, 427:11, 427:14, 427:21, 440:8, 591:12, 591:21, 617:1, 620:4, 626:13, 628:19, 629:14, 629:20, 630:5, 630:6, 630:11, 630:15, 630:18, 630:21, 631:17, 634:5, 634:7, 634:9, 634:11, 634:14, 634:22, 634:23 <b>meetings</b> [11] - 395:4,	411:23, 411:25, 412:6, 418:7, 418:13, 422:19, 535:15, 591:20, 626:7, 626:10 <b>megafauna</b> [1] - 460:24 <b>megawatts</b> [5] - 358:22, 359:1, 640:8, 640:9, 641:4 <b>melts</b> [1] - 552:14 <b>member</b> [5] - 477:16, 477:18, 628:22, 628:25, 629:9 <b>members</b> [2] - 433:20, 631:25 <b>Memo</b> [1] - 343:20 <b>Memorandum</b> [1] - 343:12 <b>memory</b> [3] - 468:18, 519:18, 554:10 <b>mention</b> [4] - 418:14, 482:18, 573:13, 619:25 <b>mentioned</b> [21] - 362:22, 399:5, 400:20, 401:14, 404:2, 407:6, 434:15, 436:20, 438:5, 459:5, 461:12, 464:6, 469:10, 481:13, 502:18, 515:21, 517:19, 518:4, 548:15, 560:2, 560:7 <b>mentioning</b> [1] - 364:9 <b>mentions</b> [1] - 452:12 <b>merely</b> [2] - 373:12, 629:3 <b>Messungen</b> [1] - 341:20 <b>met</b> [10] - 526:19, 548:21, 548:22, 591:14, 591:19, 628:12, 628:17, 628:21, 628:25 <b>metal</b> [1] - 620:1 <b>meter</b> [3] - 547:24, 547:25, 548:6 <b>meters</b> [17] - 474:11, 505:21, 505:22, 529:7, 534:10, 534:13, 534:15, 538:9, 548:4, 559:11, 559:12, 560:18, 560:19, 560:25, 561:1, 561:2 <b>methodological</b> [1] - 502:7 <b>methods</b> [1] - 486:8	<b>metric</b> [1] - 495:16 28 <b>mic</b> [3] - 429:24, 473:9, 481:23 <b>MICHAEL</b> [1] - 334:3 <b>Michaud</b> [5] - 346:17, 361:14, 362:21, 362:25, 363:2 <b>Michigan</b> [1] - 342:18 <b>microwave</b> [1] - 444:19 <b>middle</b> [6] - 351:5, 410:4, 577:4, 577:5, 583:21, 615:18 <b>might</b> [20] - 367:9, 379:23, 401:24, 413:13, 414:13, 421:25, 433:17, 440:16, 442:19, 446:13, 456:5, 479:4, 483:13, 505:14, 510:16, 554:15, 581:21, 583:12, 592:9, 627:6 <b>migrate</b> [3] - 453:17, 459:14, 464:11 <b>migrating</b> [2] - 457:24, 466:19 <b>migration</b> [22] - 432:1, 432:11, 432:12, 453:1, 453:16, 457:25, 460:23, 461:1, 461:7, 463:15, 463:24, 464:7, 464:12, 466:11, 466:12, 466:17, 466:25, 467:18, 467:23, 468:11, 468:18, 622:6 <b>migrations</b> [1] - 460:16 <b>MIKE</b> [1] - 336:12 <b>mild</b> [1] - 373:14 <b>mile</b> [25] - 393:25, 399:16, 459:1, 488:15, 576:15, 577:1, 577:6, 577:11, 577:15, 588:20, 588:22, 597:22, 598:7, 600:5, 600:10, 600:12, 600:14, 600:15, 600:19, 600:23, 600:24, 602:2, 602:3, 609:5 <b>miles</b> [23] - 394:1, 399:19, 416:24, 432:8, 458:2, 458:6, 461:23, 492:23, 508:23, 577:3,
---	--	---	---	--



577:7, 577:12, 590:25, 599:25, 600:25, 611:10, 614:4, 614:8, 614:10, 615:11, 622:16 <b>military</b> <sup>[1]</sup> - 571:19 <b>millions</b> <sup>[1]</sup> - 542:1 <b>milliseconds</b> <sup>[1]</sup> - 546:8 <b>Mimi</b> <sup>[2]</sup> - 341:21, 342:14 <b>mind</b> <sup>[7]</sup> - 427:18, 479:10, 571:19, 579:18, 598:3, 619:1, 628:1 <b>minimal</b> <sup>[4]</sup> - 399:24, 400:1, 400:5, 456:23 <b>minimization</b> <sup>[1]</sup> - 441:3 <b>minimize</b> <sup>[2]</sup> - 426:19, 427:4 <b>minimum</b> <sup>[1]</sup> - 438:12 <b>Ministry</b> <sup>[3]</sup> - 341:16, 341:22, 342:16 <b>Minnesota</b> <sup>[1]</sup> - 616:22 <b>minor</b> <sup>[3]</sup> - 395:8, 412:10, 412:15 <b>minority</b> <sup>[4]</sup> - 368:10, 368:15, 369:2, 369:7 <b>minority's</b> <sup>[1]</sup> - 369:10 <b>minute</b> <sup>[4]</sup> - 507:2, 540:3, 608:21, 623:18 <b>minutes</b> <sup>[15]</sup> - 400:3, 400:7, 400:20, 406:23, 412:10, 458:6, 458:7, 458:8, 458:9, 458:11, 472:8, 507:11, 558:14, 601:10, 629:20 <b>misattributing</b> <sup>[3]</sup> - 352:25, 355:4, 370:12 <b>misattribution</b> <sup>[5]</sup> - 351:22, 351:24, 352:4, 352:10, 378:22 <b>misinformed</b> <sup>[2]</sup> - 370:4, 623:24 <b>misleading</b> <sup>[1]</sup> - 455:19 <b>mismatch</b> <sup>[1]</sup> - 608:15 <b>misplaced</b> <sup>[1]</sup> - 478:12 <b>miss</b> <sup>[3]</sup> - 352:15, 466:13, 584:10 <b>missed</b> <sup>[3]</sup> - 405:4, 417:7, 419:2 <b>misself</b> <sup>[1]</sup> - 378:25 <b>misself-diagnosing</b> <sup>[1]</sup> - 378:25 <b>misses</b> <sup>[1]</sup> - 466:20 <b>missing</b> <sup>[1]</sup> - 470:19 <b>Missouri</b> <sup>[2]</sup> - 426:4, 465:12 <b>misspoke</b> <sup>[1]</sup> - 505:17 <b>misstates</b> <sup>[1]</sup> - 436:5 <b>Mitchell</b> <sup>[1]</sup> - 397:17 <b>Mitigation</b> <sup>[1]</sup> - 348:10 <b>mitigation</b> <sup>[5]</sup> - 431:25, 432:3, 441:4, 442:18, 471:24 <b>MIX</b> <sup>[1]</sup> - 332:4 <b>Mix</b> <sup>[6]</sup> - 348:14, 571:17, 590:13, 630:4, 631:17, 634:1 <b>model</b> <sup>[24]</sup> - 484:19, 485:22, 485:25, 486:2, 486:3, 486:7, 493:14, 498:15, 498:16, 498:21, 504:25, 506:1, 511:22, 511:25, 512:1, 513:2, 513:6, 513:8, 516:19, 516:23, 545:18, 547:20, 585:25 <b>Model</b> <sup>[1]</sup> - 348:16 <b>Modeled</b> <sup>[1]</sup> - 346:23 <b>modeled</b> <sup>[5]</sup> - 540:14, 585:21, 586:7, 586:25, 605:2 <b>modeling</b> <sup>[13]</sup> - 473:25, 474:7, 474:18, 494:12, 498:9, 498:11, 499:7, 500:4, 500:16, 507:15, 509:18, 514:18, 516:23 <b>Modeling</b> <sup>[1]</sup> - 343:13 <b>models</b> <sup>[4]</sup> - 494:8, 498:1, 505:5, 565:5 <b>modestly</b> <sup>[1]</sup> - 572:11 <b>Mollie</b> <sup>[1]</sup> - 332:15 <b>mom</b> <sup>[2]</sup> - 596:16, 596:21 <b>mom's</b> <sup>[1]</sup> - 581:11 <b>moment</b> <sup>[5]</sup> - 449:18, 459:8, 522:8, 525:24, 616:20 <b>Momose</b> <sup>[1]</sup> - 342:14 <b>money</b> <sup>[5]</sup> - 398:11, 409:21, 625:4, 625:7 <b>monitor</b> <sup>[1]</sup> - 541:21 <b>monitored</b> <sup>[1]</sup> - 542:1 <b>monitoring</b> <sup>[27]</sup> - 432:10, 432:11, 438:6, 438:7, 438:9, 459:7, 461:12, 462:15, 464:17, 465:1, 465:3, 465:20, 466:1, 466:22, 466:23, 468:10, 470:2, 471:4, 474:18, 525:2, 531:21, 531:25, 532:3, 539:3, 542:2, 555:8, 555:10 <b>monitors</b> <sup>[1]</sup> - 458:18 <b>monster</b> <sup>[1]</sup> - 423:3 <b>month</b> <sup>[2]</sup> - 443:21, 466:19 <b>months</b> <sup>[11]</sup> - 424:14, 459:22, 461:9, 499:17, 575:6, 575:19, 575:25, 587:8, 587:11, 616:6, 619:15 <b>Moore</b> <sup>[2]</sup> - 344:3, 344:7 <b>morning</b> <sup>[21]</sup> - 351:1, 351:10, 351:15, 351:16, 371:10, 374:25, 377:4, 377:20, 377:21, 392:17, 392:19, 399:3, 399:4, 401:5, 420:13, 438:3, 438:4, 446:17, 565:21, 630:7, 637:11 <b>morning's</b> <sup>[3]</sup> - 400:14, 417:1, 576:23 <b>mortality</b> <sup>[3]</sup> - 462:24, 463:9, 464:16 <b>most</b> <sup>[17]</sup> - 364:2, 365:4, 380:25, 387:18, 400:23, 417:21, 447:3, 507:3, 547:25, 548:8, 564:11, 578:12, 611:17, 622:10, 635:18, 637:24 <b>mostly</b> <sup>[3]</sup> - 403:15, 404:5, 601:12 <b>mother</b> <sup>[4]</sup> - 446:6, 580:2, 580:3, 591:12 <b>mother's</b> <sup>[2]</sup> - 585:17, 591:16 <b>motion</b> <sup>[3]</sup> - 574:19, 578:1, 627:14 <b>mouthful</b> <sup>[1]</sup> - 442:5 <b>mouthguard</b> <sup>[1]</sup> - 575:14 <b>move</b> <sup>[22]</sup> - 396:18, 424:5, 444:21, 465:11, 474:22, 475:6, 475:7, 485:22, 489:1, 527:22, 532:6, 570:12, 576:7, 588:25, 589:2, 594:16, 602:20, 613:25, 615:1, 621:4, 623:9, 629:2 <b>moved</b> <sup>[7]</sup> - 474:9, 485:4, 614:19, 614:20, 614:24, 616:6, 628:17 <b>movie</b> <sup>[1]</sup> - 574:3 <b>moving</b> <sup>[7]</sup> - 407:2, 486:13, 576:10, 576:12, 576:13 <b>MP</b> <sup>[1]</sup> - 604:23 <b>MP2</b> <sup>[3]</sup> - 586:25, 587:1, 587:4 <b>MP4</b> <sup>[1]</sup> - 604:25 <b>MR</b> <sup>[298]</sup> - 351:1, 351:14, 364:21, 364:22, 366:4, 366:6, 366:9, 366:14, 366:21, 370:15, 370:16, 370:18, 370:23, 370:25, 371:9, 374:22, 376:23, 378:21, 378:24, 379:5, 379:14, 379:16, 379:19, 380:11, 380:12, 380:14, 382:20, 382:21, 382:23, 384:17, 388:2, 388:6, 388:9, 390:16, 390:21, 391:17, 391:18, 392:4, 392:8, 398:20, 398:24, 405:3, 405:6, 406:1, 406:19, 406:22, 406:25, 407:5, 416:18, 416:19, 416:21, 417:11, 418:3, 418:22, 418:24, 419:8, 420:11, 424:23, 425:9, 425:14, 427:5, 427:6, 427:8, 428:7, 428:9, 428:21, 428:22, 428:24, 429:1, 429:5, 432:25, 433:1, 433:3, 433:5, 436:6, 437:9, 29 437:10, 437:12, 437:20, 437:21, 437:23, 437:25, 439:23, 445:8, 467:9, 468:6, 469:1, 469:3, 469:4, 469:5, 469:6, 469:21, 471:6, 471:8, 472:5, 472:8, 474:23, 474:24, 475:2, 475:4, 475:9, 475:11, 475:15, 475:22, 476:10, 476:13, 476:16, 476:19, 477:2, 479:8, 479:12, 479:17, 497:9, 497:10, 503:24, 504:7, 504:13, 504:18, 504:22, 504:24, 509:1, 509:2, 509:4, 509:6, 511:12, 512:20, 514:11, 518:10, 518:12, 518:17, 521:3, 521:4, 521:6, 521:7, 521:10, 521:15, 521:21, 527:24, 528:8, 528:9, 528:17, 528:21, 529:2, 532:6, 532:12, 532:13, 532:14, 532:24, 533:8, 538:2, 538:20, 549:15, 549:21, 550:5, 550:6, 550:8, 550:10, 550:12, 553:11, 553:13, 553:15, 561:8, 565:9, 568:13, 568:19, 569:2, 569:19, 569:20, 569:21, 569:22, 569:23, 570:2, 570:4, 570:8, 570:12, 570:17, 570:21, 570:22, 571:4, 573:5, 573:11, 574:9, 574:12, 574:16, 578:7, 578:9, 578:11, 579:14, 580:24, 580:25, 582:3, 582:5, 582:10, 582:19, 582:20, 582:23, 583:2, 583:5, 589:4, 589:6, 589:9, 589:18, 591:24,	
---	--

593:4, 593:6, 594:4, 594:15, 594:18, 594:20, 594:25, 595:2, 595:4, 595:6, 595:7, 595:14, 595:19, 595:25, 597:19, 598:5, 598:9, 598:18, 598:20, 598:24, 599:22, 600:1, 600:6, 600:17, 600:21, 601:4, 601:12, 601:15, 601:22, 601:25, 602:4, 602:8, 602:14, 602:16, 602:20, 602:22, 603:6, 608:20, 608:24, 609:2, 609:12, 609:13, 609:16, 609:25, 610:1, 610:3, 611:22, 612:10, 612:14, 613:1, 613:5, 613:6, 613:8, 613:12, 613:18, 617:16, 617:21, 617:23, 617:24, 618:9, 618:11, 618:12, 618:16, 618:23, 619:1, 619:5, 620:13, 620:23, 621:19, 624:5, 626:1, 626:24, 627:8, 627:13, 627:25, 628:6, 629:4, 629:13, 631:10, 633:19, 636:13, 636:15, 636:17, 637:10, 637:12, 637:13, 637:15, 637:16, 637:19, 637:22, 638:1, 638:13, 640:2, 642:7, 642:14 <b>MRIs</b> <sup>[1]</sup> - 609:23 <b>MRS</b> <sup>[1]</sup> - 593:17 <b>MS</b> <sup>[198]</sup> - 364:20, 366:1, 370:24, 371:2, 371:8, 371:12, 371:14, 374:20, 379:15, 382:22, 383:2, 384:20, 384:23, 386:9, 388:5, 392:10, 392:15, 398:18, 398:22, 398:25, 399:2, 405:2, 405:5, 405:24, 406:14,	406:15, 417:13, 418:2, 418:5, 418:20, 418:23, 424:24, 425:2, 425:8, 425:12, 428:5, 428:23, 428:25, 429:7, 429:12, 432:23, 436:5, 437:22, 437:24, 438:2, 439:21, 439:25, 440:1, 440:3, 440:16, 445:6, 468:7, 468:9, 468:25, 469:7, 469:9, 469:20, 469:23, 470:7, 471:5, 471:7, 471:10, 472:4, 472:13, 472:14, 472:17, 473:2, 474:20, 475:6, 475:19, 476:8, 476:12, 479:9, 479:15, 479:18, 481:22, 497:7, 504:3, 509:3, 509:5, 509:7, 509:9, 511:10, 514:12, 514:14, 518:9, 518:14, 521:9, 521:13, 521:17, 521:22, 522:4, 522:18, 525:24, 527:22, 527:25, 528:6, 528:15, 532:8, 533:6, 537:25, 538:16, 543:6, 549:13, 549:17, 550:3, 553:12, 553:14, 553:16, 553:19, 554:12, 554:16, 554:18, 561:7, 565:13, 565:17, 565:23, 566:6, 566:12, 569:4, 569:6, 569:18, 569:24, 569:25, 570:1, 570:3, 570:10, 572:21, 574:5, 579:10, 582:17, 582:21, 582:25, 589:8, 589:10, 589:12, 589:17, 589:19, 589:21, 591:23, 594:22, 601:9, 601:20, 602:19, 603:3, 603:7, 608:14, 608:21,	609:1, 610:2, 610:4, 610:6, 611:21, 613:11, 613:14, 617:12, 617:20, 618:6, 618:25, 619:3, 619:7, 620:9, 620:14, 620:19, 621:7, 621:20, 624:2, 624:9, 625:20, 626:6, 626:19, 627:1, 628:4, 628:7, 628:23, 628:24, 629:2, 629:6, 629:10, 629:19, 631:7, 631:11, 633:22, 633:24, 636:11, 637:18, 637:21, 639:15, 639:20, 639:25, 640:14, 640:20, 640:22, 641:6, 641:11, 641:22, 642:4, 642:12 <b>Muddy</b> <sup>[1]</sup> - 579:2 <b>multiple</b> <sup>[3]</sup> - 456:17, 492:13, 519:10 <b>multiply</b> <sup>[2]</sup> - 526:14, 554:4 <b>multiplying</b> <sup>[1]</sup> - 554:24 <b>multipoint</b> <sup>[1]</sup> - 444:19 <b>Municipal</b> <sup>[2]</sup> - 344:6, 344:10 <b>MUSHITZ</b> <sup>[1]</sup> - 336:15 <b>music</b> <sup>[1]</sup> - 599:7 <b>must</b> <sup>[5]</sup> - 369:18, 402:22, 454:18, 567:7, 632:18 <b>mute</b> <sup>[1]</sup> - 607:10	524:8, 541:12, 541:14, 571:15, 571:20, 596:5, 603:22, 635:4 <b>named</b> <sup>[1]</sup> - 407:12 <b>Nameki</b> <sup>[2]</sup> - 341:21, 342:14 <b>names</b> <sup>[1]</sup> - 411:7 <b>narrative</b> <sup>[1]</sup> - 572:22 <b>Nat'l</b> <sup>[3]</sup> - 340:8, 341:6, 344:21 <b>nation</b> <sup>[1]</sup> - 370:11 <b>National</b> <sup>[8]</sup> - 340:11, 340:14, 340:17, 340:19, 342:4, 440:22, 459:16, 471:18 <b>national</b> <sup>[6]</sup> - 443:6, 447:13, 447:15, 459:15, 572:11, 572:13 <b>nationwide</b> <sup>[1]</sup> - 448:18 <b>natural</b> <sup>[2]</sup> - 403:11, 471:1 <b>Natural</b> <sup>[1]</sup> - 344:13 <b>naturally</b> <sup>[1]</sup> - 414:15 <b>nature</b> <sup>[6]</sup> - 353:13, 378:15, 394:23, 426:21, 427:2, 642:1 <b>Naturschutz</b> <sup>[1]</sup> - 341:20 <b>navigate</b> <sup>[1]</sup> - 462:20 <b>nay</b> <sup>[1]</sup> - 627:22 <b>naysay</b> <sup>[1]</sup> - 422:4 <b>near</b> <sup>[7]</sup> - 369:15, 399:11, 405:15, 428:1, 428:18, 492:13, 577:5 <b>nearby</b> <sup>[2]</sup> - 369:19, 463:21 <b>nearest</b> <sup>[2]</sup> - 576:16, 577:2 <b>Nearest</b> <sup>[1]</sup> - 346:22 <b>Nebraska</b> <sup>[1]</sup> - 463:22 <b>necessarily</b> <sup>[5]</sup> - 451:1, 462:5, 465:2, 490:6, 506:25 <b>necessary</b> <sup>[4]</sup> - 410:1, 455:15, 478:18, 483:22 <b>need</b> <sup>[40]</sup> - 351:18, 356:17, 358:14, 366:2, 409:25, 429:23, 431:11, 439:3, 440:16, 443:14, 445:17, 446:21, 447:2, 451:21, 462:8, 475:2, 475:7,	486:16, 489:18, 30 502:11, 507:9, 508:21, 522:10, 534:3, 538:1, 545:5, 555:3, 565:16, 566:24, 574:13, 585:11, 595:9, 595:11, 596:23, 602:23, 605:10, 607:23, 620:24, 623:9, 638:15 <b>needed</b> <sup>[4]</sup> - 440:2, 441:13, 507:7, 629:22 <b>needing</b> <sup>[1]</sup> - 474:7 <b>needs</b> <sup>[5]</sup> - 389:23, 406:20, 569:10, 569:12, 570:23 <b>negative</b> <sup>[9]</sup> - 354:16, 355:3, 355:8, 358:2, 367:1, 369:5, 401:18, 428:17, 621:24 <b>Negative</b> <sup>[1]</sup> - 343:4 <b>negatives</b> <sup>[3]</sup> - 374:13, 401:22, 401:24 <b>neighborhood</b> <sup>[3]</sup> - 400:3, 614:25, 615:2 <b>neighborhoods</b> <sup>[2]</sup> - 614:24, 615:20 <b>neighbors</b> <sup>[2]</sup> - 420:4, 420:5 <b>Nelson</b> <sup>[14]</sup> - 379:20, 384:17, 388:10, 388:22, 419:8, 445:10, 467:12, 512:21, 519:2, 579:18, 592:1, 612:10, 627:22, 638:3 <b>NELSON</b> <sup>[45]</sup> - 332:11, 374:25, 375:8, 375:14, 376:7, 376:13, 376:16, 376:20, 386:10, 386:24, 387:7, 387:11, 387:19, 388:1, 419:9, 419:12, 420:9, 467:13, 467:21, 467:25, 468:5, 512:22, 513:1, 513:5, 513:22, 514:1, 514:5, 514:10, 564:25, 565:8, 579:21, 579:25, 580:3, 580:6, 580:9, 592:2, 592:21, 593:3, 612:11, 627:2,
--	---	---	--	--

<p>627:10, 627:22, 638:4, 638:9, 638:12 <b>Nelson's</b> [2] - 380:15, 388:7 <b>NEPA</b> [4] - 432:15, 456:13, 471:19, 471:21 <b>nerve</b> [2] - 389:24, 392:1 <b>nerves</b> [1] - 373:17 <b>nest</b> [7] - 470:2, 470:3, 470:5, 470:11, 470:17, 471:1, 471:3 <b>nests</b> [2] - 470:14, 470:23 <b>network</b> [1] - 535:1 <b>Neuron</b> [1] - 342:24 <b>Nevada</b> [1] - 449:16 <b>never</b> [25] - 368:19, 375:11, 379:2, 394:18, 394:20, 400:6, 413:14, 413:18, 414:10, 414:20, 428:16, 520:18, 525:6, 534:20, 555:21, 555:22, 555:23, 568:15, 571:12, 591:10, 610:9, 610:10, 610:11, 610:15, 622:8 <b>New</b> [4] - 342:8, 342:8, 342:23, 550:24 <b>new</b> [8] - 357:17, 357:24, 398:5, 483:19, 488:21, 579:6, 592:18, 607:18 <b>newer</b> [1] - 539:1 <b>newest</b> [2] - 402:13, 402:14 <b>news</b> [4] - 423:6, 423:8, 423:9, 537:11 <b>newspaper</b> [1] - 416:13 <b>next</b> [16] - 372:10, 392:9, 417:10, 429:6, 452:17, 492:11, 492:18, 495:22, 530:24, 533:13, 538:8, 552:22, 573:24, 586:23, 600:12, 611:20 <b>NHMR</b> [2] - 340:12, 340:15 <b>nice</b> [2] - 570:19, 595:14 <b>Night</b> [1] - 348:21 <b>night</b> [19] - 420:15,</p>	<p>453:14, 488:5, 488:6, 488:11, 488:13, 490:21, 491:4, 491:6, 491:10, 491:12, 491:16, 492:24, 496:8, 522:7, 573:22, 575:15, 637:8, 637:9 <b>nighttime</b> [6] - 487:23, 488:7, 488:14, 494:18, 519:21, 611:8 <b>nine</b> [9] - 404:10, 424:15, 510:13, 511:2, 511:5, 519:7, 575:25, 614:9, 616:6 <b>nobody</b> [3] - 396:10, 413:9, 631:14 <b>Nocebo</b> [4] - 342:21, 342:24, 343:3, 343:5 <b>noise</b> [74] - 356:21, 359:5, 359:8, 359:10, 359:14, 359:21, 360:4, 360:13, 361:6, 361:10, 362:9, 363:7, 363:11, 372:15, 377:25, 380:18, 380:19, 380:20, 388:14, 388:25, 389:3, 402:1, 402:4, 426:5, 426:20, 477:10, 477:16, 478:23, 480:19, 482:4, 482:6, 483:14, 486:19, 487:1, 487:2, 487:24, 488:4, 490:13, 490:21, 491:3, 491:13, 491:20, 491:22, 492:15, 498:12, 500:21, 501:21, 502:2, 505:6, 509:11, 516:8, 516:14, 520:17, 576:17, 585:8, 596:21, 596:25, 599:16, 606:3, 606:5, 606:6, 607:10, 611:8, 611:9, 615:10, 622:18, 623:6, 630:19, 637:2 <b>Noise</b> [11] - 341:18, 341:22, 342:8, 342:11, 342:16, 346:18, 347:8, 347:15, 348:21,</p>	<p>348:22, 349:6 <b>noises</b> [4] - 380:24, 395:13, 488:10, 505:8 <b>nominated</b> [2] - 402:18, 416:13 <b>non</b> [1] - 544:9 <b>non-OEM</b> [1] - 544:9 <b>none</b> [6] - 370:22, 376:16, 391:7, 425:12, 469:3, 517:9 <b>nonexistent</b> [1] - 452:7 <b>nonfluctuating</b> [1] - 493:18 <b>nonfunctional</b> [1] - 556:20 <b>nonparticipating</b> [3] - 409:15, 435:24, 436:18 <b>noon</b> [1] - 476:13 <b>normal</b> [10] - 384:2, 385:22, 499:5, 534:11, 538:10, 538:24, 541:23, 564:16, 596:19, 607:18 <b>normally</b> [1] - 384:3 <b>North</b> [1] - 463:20 <b>north</b> [21] - 399:15, 405:16, 408:9, 465:11, 578:3, 579:2, 579:25, 581:2, 583:19, 584:14, 584:20, 591:14, 596:15, 597:22, 597:23, 609:5, 612:20, 614:6, 619:18, 619:19 <b>north-northeast</b> [1] - 581:2 <b>northeast</b> [9] - 393:25, 577:11, 578:4, 580:20, 581:2, 584:10, 609:6, 609:9 <b>northeastern</b> [1] - 410:2 <b>northern</b> [1] - 465:9 <b>Northern</b> [1] - 563:21 <b>northwest</b> [2] - 581:11, 609:4 <b>Northwestern</b> [1] - 445:2 <b>Notary</b> [2] - 643:7, 643:18 <b>note</b> [4] - 522:5, 603:3, 613:19, 642:7 <b>noted</b> [3] - 432:18, 504:18, 508:10</p>	<p><b>notes</b> [3] - 405:3, 446:19, 502:11 <b>nothing</b> [13] - 405:12, 416:18, 451:8, 469:18, 488:12, 490:14, 587:12, 609:12, 610:11, 611:21, 629:24, 637:10, 637:12 <b>notice</b> [9] - 378:12, 396:11, 477:7, 496:9, 545:10, 549:9, 557:12, 632:17, 636:21 <b>noticeable</b> [1] - 637:6 <b>noticed</b> [7] - 478:4, 596:25, 598:2, 599:14, 616:10, 632:21, 637:4 <b>notices</b> [2] - 567:21, 587:25 <b>noticing</b> [4] - 596:14, 596:24, 597:2, 598:6 <b>noting</b> [1] - 520:8 <b>Nov</b> [1] - 346:21 <b>NRHP</b> [1] - 443:6 <b>NTIA</b> [1] - 343:18 <b>nuisance</b> [1] - 426:15 <b>number</b> [29] - 377:17, 399:25, 408:16, 414:9, 415:25, 427:25, 449:20, 458:15, 462:17, 463:17, 484:18, 500:25, 508:19, 508:22, 540:2, 547:15, 547:16, 547:17, 551:17, 554:25, 555:3, 555:5, 557:23, 573:25, 585:18, 608:17, 616:22, 632:8, 635:3 <b>Number</b> [1] - 346:17 <b>numbered</b> [1] - 533:12 <b>numbering</b> [2] - 528:6, 608:22 <b>numbers</b> [11] - 452:20, 452:23, 457:22, 497:5, 500:16, 517:22, 527:25, 528:2, 534:21, 593:2, 604:12 <b>NWI</b> [1] - 447:14 <b>NXF</b> [1] - 480:13 <b>NZS</b> [1] - 342:8</p>	<p><b>O</b> 31 <b>o'clock</b> [1] - 630:7 <b>oath</b> [9] - 351:10, 392:13, 429:10, 472:24, 476:25, 522:3, 571:3, 595:24, 613:17 <b>object</b> [12] - 418:20, 428:5, 475:13, 504:3, 532:8, 572:22, 619:11, 620:19, 624:3, 625:24, 626:19, 629:2 <b>objected</b> [1] - 639:2 <b>objecting</b> [1] - 549:19 <b>objection</b> [27] - 364:20, 405:2, 405:24, 436:5, 439:21, 474:24, 479:8, 479:9, 497:7, 504:3, 504:18, 527:24, 528:8, 537:25, 538:16, 543:6, 549:13, 550:3, 573:2, 574:5, 579:11, 594:21, 594:23, 617:16, 628:23, 629:10, 631:7 <b>objections</b> [3] - 475:22, 613:19, 620:5 <b>Objective</b> [1] - 346:18 <b>objective</b> [2] - 364:12, 365:12 <b>objectively</b> [1] - 365:16 <b>objector</b> [1] - 474:23 <b>objects</b> [3] - 463:8, 533:16, 533:25 <b>oblong</b> [1] - 513:20 <b>observation</b> [2] - 466:13, 629:14 <b>observed</b> [4] - 462:18, 462:21, 463:12, 465:23 <b>observers</b> [1] - 457:17 <b>observing</b> [2] - 466:14, 466:16 <b>obtained</b> [1] - 538:10 <b>obtaining</b> [1] - 412:23 <b>obvious</b> [2] - 362:7, 394:13 <b>obviously</b> [11] - 395:18, 397:11, 401:11, 408:16, 415:25, 463:18, 465:18, 466:2,</p>
--	--	--	---	---



576:11, 587:15, 592:15 <b>occasion</b> [1] - 608:11 <b>occupation</b> [1] - 575:21 <b>occupational</b> [1] - 572:20 <b>occupied</b> [2] - 450:19, 451:1 <b>occupies</b> [1] - 402:13 <b>occur</b> [16] - 375:17, 438:7, 456:5, 467:23, 468:13, 496:9, 496:12, 525:10, 530:3, 535:9, 535:18, 536:2, 536:5, 537:24, 540:8, 581:13 <b>occurred</b> [5] - 496:11, 497:13, 602:1, 620:21, 635:12 <b>occurrence</b> [1] - 467:18 <b>occurs</b> [1] - 371:22 <b>Oct</b> [1] - 341:15 <b>octave</b> [1] - 387:16 <b>October</b> [7] - 332:7, 350:4, 367:21, 439:8, 444:1, 643:11, 643:14 <b>odd</b> [2] - 630:20, 639:3 <b>OEM</b> [6] - 535:19, 536:10, 536:19, 544:9, 544:14 <b>OEMs</b> [1] - 535:24 <b>OF</b> [6] - 332:1, 332:2, 332:3, 643:1, 643:3 <b>off-line</b> [1] - 552:16 <b>off-the-cuff</b> [1] - 517:9 <b>offense</b> [1] - 369:25 <b>offer</b> [4] - 381:3, 398:19, 476:8, 515:25 <b>offered</b> [3] - 355:19, 355:21, 414:17 <b>offering</b> [2] - 356:1, 544:15 <b>offers</b> [1] - 625:7 <b>offhand</b> [1] - 514:1 <b>Office</b> [1] - 342:6 <b>office</b> [1] - 445:18 <b>offices</b> [1] - 524:17 <b>offset</b> [1] - 426:15 <b>often</b> [5] - 450:15, 488:14, 525:9, 536:4, 542:8 <b>old</b> [11] - 441:23, 454:7, 454:8, 556:3,	574:3, 591:16, 592:12, 607:15, 608:1, 622:1, 636:22 <b>old-fashioned</b> [1] - 592:12 <b>older</b> [1] - 607:4 <b>once</b> [13] - 399:23, 407:17, 444:7, 467:13, 521:20, 530:15, 543:18, 547:3, 558:8, 575:11, 581:7, 585:5, 633:14 <b>one</b> [170] - 352:10, 355:11, 362:18, 363:5, 365:6, 370:19, 379:4, 382:11, 383:25, 384:8, 384:24, 385:21, 386:21, 387:15, 387:16, 389:23, 390:22, 396:4, 398:15, 399:15, 402:17, 403:20, 405:9, 406:2, 406:5, 406:16, 414:11, 414:16, 414:21, 415:12, 415:13, 416:11, 416:15, 417:7, 417:9, 419:11, 419:13, 422:18, 422:20, 422:24, 424:24, 426:1, 427:16, 427:22, 431:10, 431:11, 433:3, 441:18, 442:12, 443:24, 444:21, 444:24, 446:3, 450:21, 452:18, 458:17, 458:23, 459:20, 461:3, 461:14, 463:8, 466:1, 466:20, 467:3, 468:7, 469:7, 470:11, 470:12, 470:17, 471:3, 474:9, 478:21, 479:11, 479:13, 483:11, 485:1, 491:14, 493:24, 495:8, 495:22, 496:21, 500:15, 505:2, 510:9, 513:8, 513:20, 514:12, 515:13, 515:16, 516:23, 517:22, 521:12, 521:14, 522:8, 525:21, 530:25, 531:1,	542:10, 542:16, 548:24, 551:2, 552:6, 553:6, 553:9, 558:22, 559:1, 559:8, 559:9, 560:5, 561:20, 562:3, 562:4, 563:17, 565:2, 569:15, 575:3, 575:4, 579:23, 580:14, 583:12, 584:23, 586:19, 586:22, 587:18, 588:1, 590:5, 591:13, 592:2, 593:17, 594:1, 601:2, 606:17, 607:7, 609:17, 610:25, 615:19, 622:1, 623:8, 623:11, 624:16, 624:19, 626:12, 628:25, 629:19, 630:4, 630:15, 631:4, 632:15, 632:16, 632:22, 633:3, 634:16, 636:15, 638:4, 638:14, 639:6, 639:16, 640:23, 640:24, 641:12, 641:14 <b>one's</b> [2] - 530:25 <b>one-hour</b> [2] - 515:13, 515:16 <b>one-third</b> [2] - 387:15, 443:24 <b>one-time</b> [1] - 433:3 <b>ones</b> [5] - 505:2, 589:16, 595:2, 607:9, 622:1 <b>ongoing</b> [1] - 464:23 <b>Onida</b> [2] - 332:25, 643:13 <b>online</b> [2] - 543:20, 552:10 <b>onset</b> [1] - 555:13 <b>Ontario</b> [3] - 344:5, 344:9, 344:16 <b>oops</b> [1] - 565:21 <b>Opaluch</b> [1] - 344:12 <b>open</b> [15] - 410:19, 433:17, 433:18, 433:20, 433:23, 434:9, 434:12, 434:16, 583:6, 598:22, 604:5, 604:6, 627:11, 634:22, 634:23 <b>open-ended</b> [1] - 598:22	<b>opened</b> [2] - 367:9, 593:20 <b>opens</b> [3] - 396:20, 396:25 <b>operable</b> [1] - 439:15 <b>operate</b> [7] - 515:4, 515:19, 527:21, 546:22, 546:25, 567:15, 569:1 <b>operated</b> [2] - 536:10, 547:24 <b>operating</b> [23] - 369:15, 461:14, 463:18, 487:5, 489:9, 489:13, 491:24, 508:5, 530:8, 534:11, 534:14, 538:10, 538:24, 539:9, 541:23, 543:18, 546:7, 546:19, 557:7, 557:17, 567:24, 568:24 <b>Operating</b> [1] - 346:13 <b>operation</b> [13] - 404:25, 415:21, 529:22, 531:25, 535:15, 544:2, 546:12, 550:22, 550:23, 556:15, 557:5, 564:16, 567:5 <b>operational</b> [9] - 370:21, 428:18, 466:23, 491:25, 506:7, 544:20, 553:5, 553:7, 556:6 <b>Operations</b> [3] - 527:18, 527:19, 528:4 <b>operations</b> [5] - 452:1, 488:22, 519:23, 523:1, 527:1 <b>operators</b> [3] - 444:18, 529:23, 536:21 <b>opine</b> [1] - 573:2 <b>opined</b> [1] - 493:21 <b>Opinion</b> [1] - 340:21 <b>opinion</b> [29] - 352:20, 352:22, 354:22, 355:24, 356:2, 359:4, 360:4, 360:6, 360:8, 360:13, 360:23, 361:2, 363:6, 367:2, 367:6, 372:4, 372:21, 390:12, 390:18, 439:20, 477:20, 493:24, 494:19, 516:14, 531:4, 532:18, 532:21,	558:18, 567:11 32 <b>opinions</b> [3] - 354:15, 366:25, 502:6 <b>opioid</b> [2] - 372:10, 372:14 <b>opportunities</b> [1] - 424:19 <b>opportunity</b> [19] - 352:3, 352:15, 359:19, 397:15, 397:20, 406:13, 412:3, 423:19, 446:13, 474:25, 478:25, 549:2, 549:9, 561:17, 593:16, 594:16, 598:25, 606:15, 630:10 <b>opposed</b> [5] - 454:3, 461:8, 477:25, 503:11, 513:19 <b>optimal</b> [1] - 541:1 <b>option</b> [2] - 541:18, 609:22 <b>optional</b> [1] - 544:15 <b>options</b> [1] - 466:3 <b>orange</b> [2] - 435:3, 603:15 <b>order</b> [8] - 419:14, 425:10, 437:6, 441:1, 585:10, 591:2, 629:1, 641:20 <b>orders</b> [1] - 376:11 <b>ordinance</b> [1] - 635:21 <b>Ordinance</b> [2] - 348:9, 348:16 <b>ordinances</b> [3] - 590:8, 626:22, 630:8 <b>Oregon</b> [1] - 346:15 <b>organ</b> [2] - 389:24, 389:25 <b>organization</b> [1] - 537:21 <b>organized</b> [1] - 439:6 <b>orient</b> [1] - 638:6 <b>original</b> [3] - 484:14, 547:10, 608:8 <b>Osceola</b> [2] - 346:20, 348:4 <b>otherwise</b> [2] - 428:4, 627:12 <b>ought</b> [1] - 539:23 <b>ourselves</b> [1] - 434:7 <b>outdated</b> [1] - 422:16 <b>outdoors</b> [1] - 491:5 <b>outlier</b> [3] - 496:6, 496:22, 497:12 <b>outliers</b> [1] - 497:4 <b>outnumbered</b> [1] - 427:14
--	--	--	---	---

<p><b>output</b> [3] - 487:7, 545:16, 545:18</p> <p><b>outside</b> [18] - 398:1, 418:21, 461:24, 469:18, 482:4, 484:19, 505:12, 518:24, 527:16, 536:3, 550:4, 597:10, 599:18, 622:11, 626:22, 627:3, 627:7</p> <p><b>outward</b> [2] - 510:10, 579:16</p> <p><b>outweigh</b> [1] - 401:22</p> <p><b>over-the-counter</b> [1] - 385:10</p> <p><b>overall</b> [4] - 420:25, 421:19, 485:12, 517:1</p> <p><b>overdose</b> [1] - 372:14</p> <p><b>overpredict</b> [1] - 513:18</p> <p><b>overruled</b> [1] - 475:15</p> <p><b>oversight</b> [1] - 524:12</p> <p><b>overstepping</b> [1] - 621:17</p> <p><b>overview</b> [1] - 430:1</p> <p><b>overwhelming</b> [1] - 369:13</p> <p><b>own</b> [15] - 361:1, 397:22, 413:8, 468:17, 536:3, 550:14, 563:23, 563:24, 575:22, 577:6, 580:20, 588:20, 612:16, 612:17, 616:3</p> <p><b>owned</b> [2] - 394:25, 428:13</p> <p><b>owner</b> [7] - 353:10, 354:2, 438:24, 492:6, 536:18, 580:4, 618:1</p> <p><b>owners</b> [1] - 395:3</p> <p><b>Ownership</b> [1] - 346:16</p> <p><b>owning</b> [1] - 601:8</p> <p><b>owns</b> [1] - 439:1</p>	<p>377:10, 377:11, 412:18, 412:19, 413:21, 433:8, 433:13, 434:20, 447:2, 447:4, 448:9, 449:19, 451:16, 452:12, 453:22, 454:18, 456:19, 479:6, 479:14, 479:21, 482:3, 483:25, 484:1, 484:2, 485:14, 489:20, 500:24, 509:24, 531:10, 531:12, 533:10, 533:12, 533:13, 560:19, 584:22, 584:23, 586:1, 586:5, 586:10, 586:13, 586:23, 604:6, 604:21, 604:23, 605:1, 608:23</p> <p><b>PAGE</b> [12] - 333:2, 334:2, 335:2, 335:18, 336:2, 336:7, 336:11, 337:2, 337:10, 338:2, 339:2, 339:9</p> <p><b>Pages</b> [1] - 332:8</p> <p><b>pages</b> [1] - 377:9</p> <p><b>paid</b> [3] - 419:4, 419:5, 629:23</p> <p><b>Pain</b> [1] - 343:4</p> <p><b>pain</b> [2] - 376:1, 451:23</p> <p><b>paintings</b> [1] - 445:19</p> <p><b>pair</b> [1] - 584:22</p> <p><b>paleobotany</b> [1] - 572:2</p> <p><b>Palombo</b> [1] - 344:18</p> <p><b>Panel</b> [1] - 341:13</p> <p><b>panel</b> [7] - 357:13, 358:1, 358:4, 361:23, 364:14, 364:25, 386:20</p> <p><b>panels</b> [1] - 368:12</p> <p><b>paper</b> [6] - 356:25, 362:21, 616:10, 618:20, 619:16, 626:15</p> <p><b>Paper</b> [1] - 340:13</p> <p><b>papers</b> [4] - 356:21, 477:9, 477:24, 516:3</p> <p><b>paragraph</b> [8] - 368:24, 369:11, 369:23, 565:22, 566:5, 566:10, 566:19, 567:13</p> <p><b>parameters</b> [1] - 363:9</p>	<p><b>parcel</b> [3] - 414:18, 414:22, 641:9</p> <p><b>parcels</b> [1] - 435:2</p> <p><b>Pardo</b> [1] - 343:14</p> <p><b>PARDO</b> [1] - 334:7</p> <p><b>parent</b> [1] - 597:13</p> <p><b>parents</b> [1] - 612:17</p> <p><b>PARK</b> [2] - 332:3, 332:5</p> <p><b>park</b> [4] - 401:19, 617:7, 620:1, 622:22</p> <p><b>Park</b> [28] - 332:15, 343:13, 346:16, 351:3, 394:25, 425:6, 429:22, 438:15, 438:18, 438:24, 439:2, 439:4, 439:9, 441:2, 444:17, 459:16, 521:22, 524:11, 524:24, 525:9, 526:24, 527:22, 621:6, 635:8, 635:14, 635:15, 635:25, 636:6</p> <p><b>park's</b> [1] - 552:19</p> <p><b>parked</b> [1] - 597:6</p> <p><b>Parkston</b> [2] - 416:24, 573:24</p> <p><b>part</b> [26] - 356:12, 370:14, 375:3, 385:18, 406:9, 416:3, 419:10, 432:14, 434:1, 450:7, 451:5, 451:20, 472:10, 479:7, 503:17, 503:25, 524:3, 555:25, 556:7, 556:16, 580:7, 592:17, 620:12, 629:8, 629:14</p> <p><b>parte</b> [2] - 629:8, 629:14</p> <p><b>Partial</b> [1] - 347:3</p> <p><b>participate</b> [2] - 394:4, 467:3</p> <p><b>participating</b> [4] - 392:24, 407:7, 407:11, 612:1</p> <p><b>participation</b> [4] - 593:8, 594:3, 634:1, 636:1</p> <p><b>particular</b> [8] - 382:3, 389:22, 395:23, 406:11, 502:5, 550:20, 588:7, 621:5</p> <p><b>particularly</b> [2] - 397:22, 549:24</p> <p><b>partly</b> [1] - 482:9</p>	<p><b>parts</b> [4] - 535:21, 589:3, 621:8, 637:2</p> <p><b>party</b> [2] - 594:24, 618:3</p> <p><b>pass</b> [1] - 460:5</p> <p><b>Pass</b> [1] - 347:12</p> <p><b>passed</b> [1] - 594:1</p> <p><b>passes</b> [4] - 467:1, 467:3, 489:25, 490:4</p> <p><b>passing</b> [1] - 462:5</p> <p><b>past</b> [5] - 564:5, 564:6, 594:10, 596:25, 597:24</p> <p><b>pastor</b> [1] - 588:2</p> <p><b>pasture</b> [1] - 393:14</p> <p><b>pastures</b> [1] - 576:18</p> <p><b>patch</b> [1] - 569:15</p> <p><b>path</b> [5] - 463:15, 463:24, 464:7, 467:18, 467:19</p> <p><b>pathway</b> [2] - 374:9, 374:14</p> <p><b>pattern</b> [1] - 579:8</p> <p><b>Paul</b> [8] - 332:17, 345:7, 345:10, 345:12, 345:15, 345:18, 346:5, 493:25</p> <p><b>PAUL</b> [1] - 337:19</p> <p><b>Pause</b> [2] - 440:18, 525:25</p> <p><b>Pawlowski</b> [17] - 343:6, 343:10, 348:15, 409:6, 409:23, 434:25, 436:24, 438:23, 439:12, 439:22, 439:23, 445:24, 461:5, 472:15, 521:15</p> <p><b>PAWLOWSKI</b> [2] - 333:20, 339:10</p> <p><b>Pawlowski's</b> [1] - 590:13</p> <p><b>Payment</b> [1] - 348:10</p> <p><b>pays</b> [1] - 397:14</p> <p><b>pazour</b> [3] - 335:21, 336:4, 338:19</p> <p><b>Pazour</b> [32] - 332:21, 333:6, 333:18, 334:13, 334:15, 334:21, 335:7, 336:18, 336:21, 337:9, 338:9, 339:5, 339:12, 370:25, 382:23, 418:3, 428:24, 437:23, 469:21, 509:4, 553:13, 569:25, 589:9, 595:20,</p>	<p>595:22, 596:5, 601:17, 601:20, 601:22, 610:7, 613:1, 637:16</p> <p><b>PAZOUR</b> [17] - 336:3, 371:2, 371:8, 383:2, 418:5, 418:23, 428:25, 437:24, 469:23, 471:5, 509:5, 553:14, 570:1, 589:10, 589:12, 589:17, 637:18</p> <p><b>Pazour's</b> [1] - 345:22</p> <p><b>Pedersen</b> [1] - 342:10</p> <p><b>peer</b> [8] - 357:4, 361:5, 361:10, 361:13, 369:14, 379:25, 380:6, 390:23</p> <p><b>peer-reviewed</b> [7] - 361:5, 361:10, 361:13, 369:14, 379:25, 380:6, 390:23</p> <p><b>PEIS</b> [3] - 456:1, 456:4, 456:12</p> <p><b>pen</b> [1] - 601:1</p> <p><b>pending</b> [1] - 353:14</p> <p><b>people</b> [69] - 353:9, 353:21, 357:23, 363:19, 365:12, 369:15, 370:10, 372:13, 379:7, 379:23, 380:25, 385:4, 387:10, 392:23, 395:21, 396:18, 396:21, 401:25, 402:21, 403:2, 403:8, 403:15, 403:24, 409:6, 417:19, 417:20, 420:4, 422:2, 422:6, 422:16, 425:21, 427:4, 427:24, 428:1, 434:2, 434:13, 435:14, 435:17, 452:8, 488:7, 489:10, 490:16, 491:5, 491:10, 491:12, 497:14, 502:1, 503:16, 515:6, 517:23, 519:14, 535:14, 537:11, 537:15, 537:18, 544:9, 544:10, 576:17, 591:20, 592:10, 594:12,</p>
<p style="text-align: center;"><b>P</b></p>				
<p><b>p.m</b> [3] - 496:1, 587:4, 642:16</p> <p><b>page</b> [59] - 358:10, 358:11, 358:12, 358:14, 358:20, 360:16, 362:24, 367:18, 367:19, 368:5, 368:7, 368:21, 368:22,</p>	<p>377:10, 377:11, 412:18, 412:19, 413:21, 433:8, 433:13, 434:20, 447:2, 447:4, 448:9, 449:19, 451:16, 452:12, 453:22, 454:18, 456:19, 479:6, 479:14, 479:21, 482:3, 483:25, 484:1, 484:2, 485:14, 489:20, 500:24, 509:24, 531:10, 531:12, 533:10, 533:12, 533:13, 560:19, 584:22, 584:23, 586:1, 586:5, 586:10, 586:13, 586:23, 604:6, 604:21, 604:23, 605:1, 608:23</p> <p><b>PAGE</b> [12] - 333:2, 334:2, 335:2, 335:18, 336:2, 336:7, 336:11, 337:2, 337:10, 338:2, 339:2, 339:9</p> <p><b>Pages</b> [1] - 332:8</p> <p><b>pages</b> [1] - 377:9</p> <p><b>paid</b> [3] - 419:4, 419:5, 629:23</p> <p><b>Pain</b> [1] - 343:4</p> <p><b>pain</b> [2] - 376:1, 451:23</p> <p><b>paintings</b> [1] - 445:19</p> <p><b>pair</b> [1] - 584:22</p> <p><b>paleobotany</b> [1] - 572:2</p> <p><b>Palombo</b> [1] - 344:18</p> <p><b>Panel</b> [1] - 341:13</p> <p><b>panel</b> [7] - 357:13, 358:1, 358:4, 361:23, 364:14, 364:25, 386:20</p> <p><b>panels</b> [1] - 368:12</p> <p><b>paper</b> [6] - 356:25, 362:21, 616:10, 618:20, 619:16, 626:15</p> <p><b>Paper</b> [1] - 340:13</p> <p><b>papers</b> [4] - 356:21, 477:9, 477:24, 516:3</p> <p><b>paragraph</b> [8] - 368:24, 369:11, 369:23, 565:22, 566:5, 566:10, 566:19, 567:13</p> <p><b>parameters</b> [1] - 363:9</p>	<p><b>parcel</b> [3] - 414:18, 414:22, 641:9</p> <p><b>parcels</b> [1] - 435:2</p> <p><b>Pardo</b> [1] - 343:14</p> <p><b>PARDO</b> [1] - 334:7</p> <p><b>parent</b> [1] - 597:13</p> <p><b>parents</b> [1] - 612:17</p> <p><b>PARK</b> [2] - 332:3, 332:5</p> <p><b>park</b> [4] - 401:19, 617:7, 620:1, 622:22</p> <p><b>Park</b> [28] - 332:15, 343:13, 346:16, 351:3, 394:25, 425:6, 429:22, 438:15, 438:18, 438:24, 439:2, 439:4, 439:9, 441:2, 444:17, 459:16, 521:22, 524:11, 524:24, 525:9, 526:24, 527:22, 621:6, 635:8, 635:14, 635:15, 635:25, 636:6</p> <p><b>park's</b> [1] - 552:19</p> <p><b>parked</b> [1] - 597:6</p> <p><b>Parkston</b> [2] - 416:24, 573:24</p> <p><b>part</b> [26] - 356:12, 370:14, 375:3, 385:18, 406:9, 416:3, 419:10, 432:14, 434:1, 450:7, 451:5, 451:20, 472:10, 479:7, 503:17, 503:25, 524:3, 555:25, 556:7, 556:16, 580:7, 592:17, 620:12, 629:8, 629:14</p> <p><b>parte</b> [2] - 629:8, 629:14</p> <p><b>Partial</b> [1] - 347:3</p> <p><b>participate</b> [2] - 394:4, 467:3</p> <p><b>participating</b> [4] - 392:24, 407:7, 407:11, 612:1</p> <p><b>participation</b> [4] - 593:8, 594:3, 634:1, 636:1</p> <p><b>particular</b> [8] - 382:3, 389:22, 395:23, 406:11, 502:5, 550:20, 588:7, 621:5</p> <p><b>particularly</b> [2] - 397:22, 549:24</p> <p><b>partly</b> [1] - 482:9</p>	<p><b>parts</b> [4] - 535:21, 589:3, 621:8, 637:2</p> <p><b>party</b> [2] - 594:24, 618:3</p> <p><b>pass</b> [1] - 460:5</p> <p><b>Pass</b> [1] - 347:12</p> <p><b>passed</b> [1] - 594:1</p> <p><b>passes</b> [4] - 467:1, 467:3, 489:25, 490:4</p> <p><b>passing</b> [1] - 462:5</p> <p><b>past</b> [5] - 564:5, 564:6, 594:10, 596:25, 597:24</p> <p><b>pastor</b> [1] - 588:2</p> <p><b>pasture</b> [1] - 393:14</p> <p><b>pastures</b> [1] - 576:18</p> <p><b>patch</b> [1] - 569:15</p> <p><b>path</b> [5] - 463:15, 463:24, 464:7, 467:18, 467:19</p> <p><b>pathway</b> [2] - 374:9, 374:14</p> <p><b>pattern</b> [1] - 579:8</p> <p><b>Paul</b> [8] - 332:17, 345:7, 345:10, 345:12, 345:15, 345:18, 346:5, 493:25</p> <p><b>PAUL</b> [1] - 337:19</p> <p><b>Pause</b> [2] - 440:18, 525:25</p> <p><b>Pawlowski</b> [17] - 343:6, 343:10, 348:15, 409:6, 409:23, 434:25, 436:24, 438:23, 439:12, 439:22, 439:23, 445:24, 461:5, 472:15, 521:15</p> <p><b>PAWLOWSKI</b> [2] - 333:20, 339:10</p> <p><b>Pawlowski's</b> [1] - 590:13</p> <p><b>Payment</b> [1] - 348:10</p> <p><b>pays</b> [1] - 397:14</p> <p><b>pazour</b> [3] - 335:21, 336:4, 338:19</p> <p><b>Pazour</b> [32] - 332:21, 333:6, 333:18, 334:13, 334:15, 334:21, 335:7, 336:18, 336:21, 337:9, 338:9, 339:5, 339:12, 370:25, 382:23, 418:3, 428:24, 437:23, 469:21, 509:4, 553:13, 569:25, 589:9, 595:20,</p>	<p>595:22, 596:5, 601:17, 601:20, 601:22, 610:7, 613:1, 637:16</p> <p><b>PAZOUR</b> [17] - 336:3, 371:2, 371:8, 383:2, 418:5, 418:23, 428:25, 437:24, 469:23, 471:5, 509:5, 553:14, 570:1, 589:10, 589:12, 589:17, 637:18</p> <p><b>Pazour's</b> [1] - 345:22</p> <p><b>Pedersen</b> [1] - 342:10</p> <p><b>peer</b> [8] - 357:4, 361:5, 361:10, 361:13, 369:14, 379:25, 380:6, 390:23</p> <p><b>peer-reviewed</b> [7] - 361:5, 361:10, 361:13, 369:14, 379:25, 380:6, 390:23</p> <p><b>PEIS</b> [3] - 456:1, 456:4, 456:12</p> <p><b>pen</b> [1] - 601:1</p> <p><b>pending</b> [1] - 353:14</p> <p><b>people</b> [69] - 353:9, 353:21, 357:23, 363:19, 365:12, 369:15, 370:10, 372:13, 379:7, 379:23, 380:25, 385:4, 387:10, 392:23, 395:21, 396:18, 396:21, 401:25, 402:21, 403:2, 403:8, 403:15, 403:24, 409:6, 417:19, 417:20, 420:4, 422:2, 422:6, 422:16, 425:21, 427:4, 427:24, 428:1, 434:2, 434:13, 435:14, 435:17, 452:8, 488:7, 489:10, 490:16, 491:5, 491:10, 491:12, 497:14, 502:1, 503:16, 515:6, 517:23, 519:14, 535:14, 537:11, 537:15, 537:18, 544:9, 544:10, 576:17, 591:20, 592:10, 594:12,</p>

<p>610:13, 618:2, 624:24, 625:1, 625:18, 631:8, 637:24</p> <p><b>people's</b> [1] - 365:8</p> <p><b>per</b> [13] - 364:5, 400:2, 400:4, 400:6, 400:20, 466:19, 488:15, 534:10, 534:15, 540:3, 562:8, 590:13</p> <p><b>perceive</b> [1] - 518:24</p> <p><b>perceived</b> [1] - 520:7</p> <p><b>percent</b> [17] - 409:3, 409:8, 409:9, 467:22, 495:17, 495:18, 520:13, 523:2, 526:14, 527:11, 529:5, 543:23, 554:1, 554:4, 554:25, 555:1, 563:8</p> <p><b>percentage</b> [2] - 488:18, 520:14</p> <p><b>perception</b> [8] - 376:10, 381:7, 382:19, 384:7, 385:17, 386:23, 501:21, 630:3</p> <p><b>Perception</b> [1] - 344:17</p> <p><b>perfect</b> [4] - 539:10, 539:11, 559:13, 567:8</p> <p><b>perform</b> [6] - 354:3, 354:19, 473:6, 477:15, 478:20, 495:6</p> <p><b>performance</b> [1] - 478:15</p> <p><b>performed</b> [8] - 352:21, 353:7, 354:13, 477:3, 486:10, 489:13, 604:9</p> <p><b>perhaps</b> [10] - 401:6, 404:25, 412:7, 414:7, 455:19, 540:20, 553:25, 573:17, 581:12, 599:22</p> <p><b>perimeter</b> [3] - 457:17, 576:8, 588:23</p> <p><b>period</b> [15] - 373:18, 432:1, 447:7, 461:7, 462:18, 464:12, 466:25, 468:12, 496:12, 496:24, 497:14, 507:14, 567:20, 567:24,</p>	<p>568:16</p> <p><b>periods</b> [3] - 432:12, 487:24, 508:10</p> <p><b>permanent</b> [2] - 448:15, 449:5</p> <p><b>permanently</b> [3] - 448:11, 448:22, 456:22</p> <p><b>permit</b> [14] - 351:4, 413:5, 419:14, 419:16, 448:18, 464:13, 471:13, 611:5, 621:9, 627:5, 628:14, 632:14, 632:16, 640:13</p> <p><b>Permit</b> [5] - 346:10, 616:10, 616:11, 619:12, 628:19</p> <p><b>PERMIT</b> [1] - 332:3</p> <p><b>permits</b> [8] - 412:23, 413:13, 619:17, 632:3, 632:6, 632:16, 632:20</p> <p><b>permitted</b> [2] - 475:1, 620:8</p> <p><b>permitting</b> [8] - 429:21, 430:7, 430:9, 440:4, 448:17, 620:11, 620:16, 620:22</p> <p><b>person</b> [17] - 352:1, 374:17, 381:13, 383:17, 383:22, 384:25, 385:7, 385:8, 386:6, 396:4, 402:22, 454:14, 483:16, 551:3, 615:7, 634:16, 634:18</p> <p><b>personal</b> [11] - 375:9, 491:20, 491:21, 527:9, 527:13, 563:23, 563:25, 572:24, 617:13, 625:23, 628:2</p> <p><b>personally</b> [6] - 366:19, 375:11, 377:12, 378:7, 394:6, 400:1</p> <p><b>perspective</b> [2] - 396:3, 549:23</p> <p><b>pertaining</b> [1] - 454:15</p> <p><b>pertinent</b> [1] - 460:4</p> <p><b>Pete</b> [1] - 445:24</p> <p><b>PETER</b> [2] - 333:20, 339:10</p> <p><b>Peter</b> [13] - 348:15, 409:6, 409:23, 434:25, 438:22, 439:12, 439:19,</p>	<p>439:22, 439:23, 446:3, 457:3, 461:5, 521:15</p> <p><b>Peters</b> [1] - 618:2</p> <p><b>PETERS</b> [1] - 333:15</p> <p><b>pH</b> [1] - 371:23</p> <p><b>Ph.D</b> [1] - 581:21</p> <p><b>phase</b> [1] - 416:2</p> <p><b>pheasants</b> [1] - 405:19</p> <p><b>Phi</b> [2] - 571:25</p> <p><b>phone</b> [9] - 519:5, 519:6, 591:12, 592:11, 592:12, 592:14, 616:21, 618:18, 618:21</p> <p><b>phonetic</b> [1] - 609:8</p> <p><b>Photo</b> [1] - 348:6</p> <p><b>phrase</b> [3] - 369:24, 374:12, 573:19</p> <p><b>physical</b> [6] - 415:17, 513:15, 515:7, 515:20, 551:7, 588:11</p> <p><b>physician</b> [1] - 375:9</p> <p><b>Physiological</b> [1] - 347:10</p> <p><b>physiological</b> [5] - 380:2, 389:5, 389:12, 390:3, 390:13</p> <p><b>physiology</b> [1] - 518:21</p> <p><b>pick</b> [4] - 351:7, 413:7, 502:2, 597:5</p> <p><b>picture</b> [5] - 377:2, 394:7, 433:11, 583:17, 595:7</p> <p><b>piece</b> [2] - 558:22, 607:3</p> <p><b>pieced</b> [1] - 641:17</p> <p><b>piecemealed</b> [1] - 642:2</p> <p><b>pieces</b> [3] - 534:11, 538:11, 568:20</p> <p><b>Pierre</b> [1] - 350:3</p> <p><b>pig</b> [10] - 388:10, 388:13, 388:24, 389:2, 389:7, 389:10, 389:19, 389:25, 391:11, 391:14</p> <p><b>pig's</b> [1] - 390:6</p> <p><b>pigs</b> [9] - 380:5, 386:14, 386:17, 388:14, 388:25, 389:22, 391:20, 391:23</p> <p><b>pillow</b> [1] - 575:10</p> <p><b>pipeline</b> [1] - 622:25</p>	<p><b>PIS</b> [2] - 455:3, 455:5</p> <p><b>pitch</b> [2] - 546:11, 547:17</p> <p><b>pitching</b> [1] - 489:1</p> <p><b>place</b> [16] - 393:15, 410:7, 426:16, 453:1, 466:11, 481:12, 508:13, 544:1, 563:22, 592:24, 601:3, 610:10, 612:19, 620:2, 627:19, 641:20</p> <p><b>Placebo</b> [1] - 342:23</p> <p><b>placed</b> [8] - 407:20, 407:24, 408:13, 409:11, 532:16, 541:22, 579:6, 611:4</p> <p><b>places</b> [4] - 442:11, 507:8, 588:16, 599:17</p> <p><b>placing</b> [1] - 457:17</p> <p><b>Plains</b> [3] - 440:23, 471:25, 563:21</p> <p><b>plan</b> [5] - 438:9, 459:7, 459:9, 462:16, 468:23</p> <p><b>planned</b> [1] - 615:23</p> <p><b>planning</b> [1] - 483:19</p> <p><b>plat</b> [1] - 510:6</p> <p><b>play</b> [2] - 498:21, 521:1</p> <p><b>playing</b> [1] - 641:19</p> <p><b>plays</b> [1] - 498:16</p> <p><b>plug</b> [1] - 599:6</p> <p><b>plus</b> [9] - 381:17, 426:2, 510:10, 519:7, 526:13, 529:5, 531:14, 554:3, 581:4</p> <p><b>Point</b> [1] - 571:20</p> <p><b>point</b> [39] - 356:18, 361:5, 361:9, 362:18, 380:23, 396:24, 400:17, 401:11, 417:24, 422:25, 426:1, 474:21, 475:16, 485:18, 489:5, 489:8, 491:2, 495:12, 496:11, 496:13, 497:16, 503:7, 543:15, 558:11, 578:9, 579:16, 580:9, 584:6, 586:18, 591:13, 592:3, 595:12, 597:8, 603:2, 608:11, 616:24, 617:1,</p>	<p>625:25, 638:14 34</p> <p><b>pointing</b> [1] - 393:8</p> <p><b>points</b> [10] - 466:7, 466:8, 508:13, 508:19, 508:22, 541:21, 542:2, 543:10, 544:12, 616:16</p> <p><b>Policy</b> [4] - 340:25, 341:7, 440:22, 471:19</p> <p><b>pool</b> [1] - 409:21</p> <p><b>population</b> [5] - 378:4, 386:7, 452:23, 454:2, 454:5</p> <p><b>populations</b> [2] - 369:20, 437:18</p> <p><b>portion</b> [5] - 393:9, 431:7, 442:7, 504:14, 524:23</p> <p><b>portray</b> [1] - 436:22</p> <p><b>portraying</b> [1] - 436:22</p> <p><b>Pose</b> [1] - 347:16</p> <p><b>position</b> [4] - 369:24, 386:11, 491:14, 581:25</p> <p><b>positions</b> [1] - 369:23</p> <p><b>positive</b> [3] - 394:14, 401:15, 567:16</p> <p><b>positives</b> [1] - 401:21</p> <p><b>possibility</b> [3] - 415:3, 510:13, 515:7</p> <p><b>possible</b> [9] - 355:10, 372:20, 374:8, 374:14, 401:22, 401:23, 558:15, 575:25, 581:5</p> <p><b>Possible</b> [1] - 347:9</p> <p><b>possibly</b> [9] - 363:16, 371:24, 397:3, 414:9, 415:9, 419:3, 458:20, 564:16, 585:7</p> <p><b>postconstruction</b> [9] - 464:16, 465:3, 465:16, 465:19, 466:1, 466:22, 511:19, 512:7, 512:8</p> <p><b>posted</b> [2] - 628:5, 628:8</p> <p><b>Potential</b> [1] - 343:21</p> <p><b>potential</b> [14] - 357:7, 359:11, 401:18, 401:20, 414:12, 428:17, 444:7, 444:16, 456:6, 459:2, 465:6, 539:19, 591:4, 634:1</p> <p><b>potentially</b> [4] - 376:1,</p>
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<p>385:19, 397:16, 444:12</p> <p><b>pounds</b> <sup>[1]</sup> - 563:15</p> <p><b>power</b> <sup>[10]</sup> - 415:6, 415:14, 487:7, 492:4, 552:2, 552:11, 552:18, 624:11, 624:18, 639:4</p> <p><b>Power</b> <sup>[1]</sup> - 349:17</p> <p><b>POWERS</b> <sup>[1]</sup> - 338:7</p> <p><b>pp</b> <sup>[1]</sup> - 342:25</p> <p><b>practicable</b> <sup>[1]</sup> - 451:18</p> <p><b>practical</b> <sup>[1]</sup> - 551:18</p> <p><b>practice</b> <sup>[2]</sup> - 503:11, 504:10</p> <p><b>practices</b> <sup>[2]</sup> - 535:3, 588:5</p> <p><b>practicing</b> <sup>[1]</sup> - 572:7</p> <p><b>practitioner</b> <sup>[1]</sup> - 477:25</p> <p><b>precipitating</b> <sup>[1]</sup> - 487:21</p> <p><b>precise</b> <sup>[1]</sup> - 519:6</p> <p><b>precisely</b> <sup>[1]</sup> - 460:8</p> <p><b>Precision</b> <sup>[1]</sup> - 332:25</p> <p><b>precision</b> <sup>[1]</sup> - 569:13</p> <p><b>preconstruction</b> <sup>[2]</sup> - 465:5, 465:21</p> <p><b>predict</b> <sup>[2]</sup> - 529:9, 531:1</p> <p><b>predicted</b> <sup>[9]</sup> - 492:25, 498:1, 498:3, 500:12, 500:21, 511:7, 520:17, 533:24, 605:2</p> <p><b>predicting</b> <sup>[1]</sup> - 480:5</p> <p><b>Prediction</b> <sup>[1]</sup> - 342:15</p> <p><b>prediction</b> <sup>[1]</sup> - 505:4</p> <p><b>predictions</b> <sup>[10]</sup> - 473:7, 506:2, 506:6, 506:8, 512:9, 512:14, 512:15, 513:16, 516:18, 520:9</p> <p><b>predictor</b> <sup>[1]</sup> - 501:1</p> <p><b>prefaced</b> <sup>[1]</sup> - 495:16</p> <p><b>prefiled</b> <sup>[8]</sup> - 446:12, 447:1, 451:2, 476:3, 477:7, 478:3, 479:1, 523:20</p> <p><b>Prefiled</b> <sup>[10]</sup> - 347:3, 347:4, 347:7, 347:14, 430:15, 430:20, 473:12, 473:15, 523:3, 523:5</p> <p><b>preliminary</b> <sup>[1]</sup> - 522:4</p> <p><b>prepared</b> <sup>[2]</sup> - 455:18,</p>	<p>614:14</p> <p><b>Prepared</b> <sup>[1]</sup> - 341:9</p> <p><b>preparing</b> <sup>[1]</sup> - 454:24</p> <p><b>prescribed</b> <sup>[2]</sup> - 574:19, 574:21</p> <p><b>present</b> <sup>[12]</sup> - 431:21, 449:24, 449:25, 452:3, 452:20, 510:12, 522:5, 565:5, 588:23, 595:25, 626:10, 628:20</p> <p><b>presentation</b> <sup>[1]</sup> - 593:8</p> <p><b>presentations</b> <sup>[1]</sup> - 448:7</p> <p><b>presented</b> <sup>[3]</sup> - 516:3, 593:10, 593:23</p> <p><b>press</b> <sup>[1]</sup> - 624:25</p> <p><b>Pressure</b> <sup>[1]</sup> - 346:24</p> <p><b>pressure</b> <sup>[13]</sup> - 363:18, 365:1, 375:23, 376:5, 381:5, 381:21, 384:5, 384:11, 384:14, 501:2, 501:5, 510:7, 591:3</p> <p><b>pressured</b> <sup>[1]</sup> - 625:18</p> <p><b>presume</b> <sup>[1]</sup> - 353:18</p> <p><b>pretty</b> <sup>[21]</sup> - 388:15, 401:13, 411:17, 423:22, 453:18, 461:13, 462:20, 466:20, 485:10, 493:2, 494:15, 500:10, 511:8, 512:24, 515:2, 519:6, 559:16, 563:10, 603:19, 616:8, 621:25</p> <p><b>Prevailing</b> <sup>[59]</sup> - 332:15, 343:13, 346:16, 351:3, 351:6, 392:8, 392:25, 394:24, 399:6, 401:15, 409:18, 410:8, 410:12, 411:5, 411:10, 421:5, 425:6, 429:5, 429:21, 438:14, 438:18, 438:19, 438:24, 438:25, 439:1, 439:4, 439:9, 441:2, 444:17, 521:22, 524:11, 524:24, 525:9, 526:24, 527:22, 555:15, 562:12, 576:25, 589:24,</p>	<p>591:9, 591:10, 591:19, 610:8, 617:25, 618:6, 618:13, 621:2, 621:6, 623:21, 630:18, 631:18, 632:12, 633:21, 635:8, 635:13, 635:15, 635:24, 636:5</p> <p><b>PREVAILING</b> <sup>[2]</sup> - 332:3, 332:5</p> <p><b>prevent</b> <sup>[1]</sup> - 545:3</p> <p><b>previous</b> <sup>[1]</sup> - 507:21</p> <p><b>previously</b> <sup>[7]</sup> - 436:20, 442:13, 459:5, 461:22, 462:9, 462:12, 601:17</p> <p><b>primary</b> <sup>[2]</sup> - 434:15, 575:21</p> <p><b>printed</b> <sup>[2]</sup> - 367:22, 629:22</p> <p><b>privilege</b> <sup>[1]</sup> - 572:6</p> <p><b>pro</b> <sup>[4]</sup> - 332:19, 332:20, 332:22, 570:17</p> <p><b>problem</b> <sup>[15]</sup> - 352:5, 352:13, 370:14, 373:5, 373:9, 373:12, 373:15, 374:2, 379:12, 386:2, 405:14, 461:18, 473:11, 491:3</p> <p><b>problems</b> <sup>[3]</sup> - 352:11, 490:21, 597:17</p> <p><b>proceed</b> <sup>[2]</sup> - 351:11, 432:25</p> <p><b>proceeding</b> <sup>[6]</sup> - 352:19, 355:15, 618:7, 620:12, 629:12, 636:3</p> <p><b>Proceedings</b> <sup>[1]</sup> - 342:9</p> <p><b>proceedings</b> <sup>[5]</sup> - 350:1, 355:16, 355:17, 643:9, 643:12</p> <p><b>process</b> <sup>[15]</sup> - 354:23, 419:10, 434:17, 446:25, 471:18, 475:12, 486:20, 519:10, 610:8, 620:16, 620:22, 623:17, 627:19, 633:8, 641:2</p> <p><b>processes</b> <sup>[1]</sup> - 489:22</p> <p><b>produce</b> <sup>[1]</sup> - 381:6</p>	<p><b>produced</b> <sup>[1]</sup> - 579:8</p> <p><b>producing</b> <sup>[1]</sup> - 489:3</p> <p><b>production</b> <sup>[7]</sup> - 512:13, 540:14, 540:15, 541:2, 558:21, 572:12, 625:6</p> <p><b>professional</b> <sup>[3]</sup> - 379:9, 477:18, 570:17</p> <p><b>Professional</b> <sup>[2]</sup> - 643:6, 643:19</p> <p><b>professionally</b> <sup>[2]</sup> - 378:8, 477:23</p> <p><b>program</b> <sup>[8]</sup> - 432:7, 432:10, 461:13, 465:1, 465:2, 465:18, 471:1, 613:20</p> <p><b>Programmatic</b> <sup>[9]</sup> - 432:15, 440:19, 440:23, 441:2, 441:6, 452:13, 456:4, 456:8, 471:25</p> <p><b>progress</b> <sup>[2]</sup> - 395:5, 460:23</p> <p><b>progression</b> <sup>[1]</sup> - 403:11</p> <p><b>progressively</b> <sup>[1]</sup> - 547:8</p> <p><b>PROJECT</b> <sup>[1]</sup> - 332:5</p> <p><b>project</b> <sup>[183]</sup> - 358:6, 359:1, 360:20, 361:2, 378:17, 382:3, 392:25, 393:9, 394:2, 394:5, 394:6, 395:5, 395:7, 395:16, 395:18, 396:20, 397:9, 398:5, 401:15, 402:7, 402:10, 402:25, 403:1, 403:13, 403:15, 404:3, 404:19, 404:22, 407:12, 408:21, 409:18, 409:24, 410:4, 410:24, 413:2, 414:12, 415:3, 415:20, 415:23, 416:6, 417:18, 419:16, 419:21, 420:1, 420:24, 425:17, 425:19, 427:2, 427:14, 427:15, 428:2, 429:21, 430:9, 432:1, 432:8, 433:21, 433:25, 434:3, 434:6,</p>	<p>435:15, 437:6, 35 437:18, 438:25, 439:8, 439:16, 440:4, 440:21, 441:1, 441:25, 443:7, 444:11, 447:23, 447:25, 448:3, 449:24, 450:1, 451:8, 451:9, 451:16, 452:1, 452:4, 453:23, 454:19, 454:25, 455:1, 455:17, 455:20, 455:22, 455:24, 456:15, 456:21, 456:22, 457:16, 458:20, 461:14, 461:19, 462:14, 462:22, 463:11, 463:18, 463:21, 464:5, 464:12, 464:17, 465:7, 465:8, 465:9, 465:21, 467:22, 469:11, 469:14, 469:17, 474:1, 477:4, 478:6, 478:18, 480:10, 480:17, 484:5, 484:17, 485:12, 485:23, 486:6, 486:22, 492:21, 494:12, 494:23, 495:5, 495:13, 498:6, 498:10, 500:18, 507:16, 519:20, 519:22, 520:5, 524:15, 525:10, 526:9, 526:19, 532:16, 536:14, 548:10, 548:17, 549:24, 555:10, 555:15, 576:25, 577:8, 578:14, 581:22, 584:7, 584:24, 588:8, 591:9, 592:18, 606:11, 609:4, 610:17, 614:17, 614:18, 616:17, 618:1, 618:14, 621:15, 621:16, 622:17, 623:18, 624:13, 624:16, 624:19, 624:24, 624:25, 633:4, 635:1, 635:5, 639:6, 639:16, 640:23, 640:25, 641:12, 641:14</p> <p><b>Project</b> <sup>[10]</sup> - 343:9,</p>
---	---	--	--	--



<p>343:19, 348:12, 402:18, 410:9, 410:12, 429:22, 620:17, 620:20, 635:14</p> <p><b>project's</b> [1] - 465:11</p> <p><b>projected</b> [1] - 493:7</p> <p><b>projects</b> [32] - 430:8, 430:11, 430:14, 449:11, 456:5, 456:6, 458:17, 461:23, 463:1, 463:13, 463:15, 463:17, 463:25, 464:2, 464:4, 464:8, 483:19, 512:4, 534:24, 536:12, 536:14, 536:16, 555:25, 556:3, 556:7, 618:15, 622:23, 623:25, 640:5, 640:7, 641:10, 641:13</p> <p><b>Projects</b> [1] - 349:17</p> <p><b>promptly</b> [1] - 412:11</p> <p><b>prone</b> [1] - 446:7</p> <p><b>pronounce</b> [1] - 363:1</p> <p><b>propagation</b> [2] - 505:5, 512:3</p> <p><b>propelled</b> [1] - 534:1</p> <p><b>properly</b> [1] - 625:11</p> <p><b>properties</b> [15] - 409:15, 435:6, 435:10, 435:22, 435:25, 436:23, 442:10, 443:5, 443:8, 443:11, 443:13, 443:15, 443:20, 444:4, 615:19</p> <p><b>property</b> [44] - 393:5, 393:11, 393:13, 394:17, 404:2, 404:5, 405:21, 405:23, 406:3, 406:6, 406:11, 411:19, 411:20, 416:22, 417:2, 435:5, 576:8, 576:11, 576:14, 577:6, 577:20, 577:23, 578:17, 578:20, 578:22, 580:7, 585:3, 588:6, 588:9, 588:14, 588:17, 588:23, 589:3, 591:1, 592:6, 603:22, 609:8, 615:2, 616:1, 616:3, 617:10, 620:6, 625:5</p>	<p><b>Property</b> [9] - 344:5, 344:6, 344:9, 344:10, 344:12, 344:16, 344:20, 348:3, 348:7</p> <p><b>proportion</b> [1] - 489:5</p> <p><b>propose</b> [2] - 440:12, 532:2</p> <p><b>proposed</b> [12] - 358:6, 358:25, 464:14, 471:14, 471:15, 498:8, 548:10, 588:8, 589:24, 600:1, 614:9, 614:12</p> <p><b>Proposed</b> [2] - 346:11, 346:12</p> <p><b>proposes</b> [1] - 532:5</p> <p><b>proposing</b> [1] - 440:9</p> <p><b>proprietary</b> [3] - 537:2, 537:4, 537:8</p> <p><b>protect</b> [7] - 369:18, 607:23, 611:11, 628:10, 630:13</p> <p><b>protected</b> [1] - 625:16</p> <p><b>Protection</b> [2] - 341:11, 342:12</p> <p><b>protection</b> [11] - 357:20, 362:1, 369:20, 440:13, 527:9, 527:13, 541:19, 591:7, 625:12, 625:13, 631:18</p> <p><b>protective</b> [4] - 607:8, 607:12, 607:15, 607:20</p> <p><b>protocols</b> [2] - 503:6, 503:13</p> <p><b>proud</b> [1] - 581:19</p> <p><b>prove</b> [2] - 506:2, 506:4</p> <p><b>proven</b> [2] - 391:22, 551:16</p> <p><b>provide</b> [17] - 359:4, 369:20, 430:1, 464:17, 476:6, 501:1, 504:8, 507:12, 522:13, 523:12, 525:15, 532:14, 554:14, 557:11, 558:3, 598:25, 599:1</p> <p><b>provided</b> [23] - 355:12, 360:3, 393:4, 433:17, 433:18, 461:25, 473:22, 476:1, 478:8, 509:12, 509:13, 509:14, 512:16, 529:4,</p>	<p>532:18, 553:21, 553:23, 554:5, 565:20, 602:6, 602:9, 603:5, 635:20</p> <p><b>Provided</b> [1] - 348:11</p> <p><b>provider</b> [1] - 440:6</p> <p><b>providers</b> [1] - 352:16</p> <p><b>provides</b> [1] - 507:11</p> <p><b>providing</b> [1] - 620:15</p> <p><b>proximity</b> [2] - 493:6, 553:7</p> <p><b>prudent</b> [1] - 591:5</p> <p><b>PSC</b> [1] - 349:4</p> <p><b>psychological</b> [1] - 390:3</p> <p><b>PUBLIC</b> [2] - 332:1, 332:9</p> <p><b>public</b> [35] - 355:17, 357:20, 361:25, 417:5, 421:5, 421:12, 421:13, 421:22, 422:1, 422:20, 423:7, 423:9, 423:13, 423:15, 423:16, 433:21, 433:25, 434:2, 434:6, 434:16, 591:11, 610:17, 610:20, 610:24, 619:17, 623:22, 626:13, 628:5, 630:25, 632:5, 632:18, 632:21, 633:7, 641:3</p> <p><b>Public</b> [12] - 341:7, 341:11, 342:3, 342:4, 342:22, 344:17, 423:14, 638:17, 638:21, 639:10, 643:7, 643:18</p> <p><b>publication</b> [6] - 358:8, 390:23, 477:8, 529:19, 533:24, 538:7</p> <p><b>Publication</b> [2] - 348:9, 349:5</p> <p><b>publications</b> [1] - 380:1</p> <p><b>publicly</b> [1] - 634:6</p> <p><b>published</b> [6] - 356:21, 356:24, 371:5, 416:12, 477:9, 477:24</p> <p><b>PUC</b> [17] - 348:16, 348:20, 417:5, 417:8, 421:11, 427:10, 478:4, 623:22, 624:14, 624:19, 633:10,</p>	<p>639:5, 639:16, 640:5, 640:22, 641:11</p> <p><b>PUC's</b> [1] - 626:23</p> <p><b>pull</b> [3] - 429:24, 554:9, 590:6</p> <p><b>pulsating</b> [1] - 490:13</p> <p><b>PUNCH</b> [1] - 337:16</p> <p><b>Punch</b> [1] - 347:14</p> <p><b>purchase</b> [3] - 406:6, 406:12, 421:7</p> <p><b>purchased</b> [3] - 438:25, 439:7, 597:21</p> <p><b>purchasing</b> [1] - 555:12</p> <p><b>purebred</b> [1] - 572:16</p> <p><b>PURPA</b> [3] - 421:6, 624:18, 638:25</p> <p><b>purpose</b> [8] - 385:12, 434:15, 456:4, 456:11, 456:12, 624:11, 625:6, 639:4</p> <p><b>purposes</b> [4] - 358:21, 373:10, 448:17, 640:9</p> <p><b>pursue</b> [1] - 572:3</p> <p><b>pushed</b> [1] - 490:1</p> <p><b>put</b> [27] - 391:3, 396:9, 396:11, 415:9, 472:9, 479:6, 495:6, 503:11, 553:9, 554:15, 568:23, 574:14, 576:4, 577:2, 587:24, 588:2, 588:10, 597:1, 606:5, 607:9, 623:2, 627:17, 628:13, 632:15, 632:19, 641:16</p> <p><b>puts</b> [5] - 352:11, 385:8, 394:1, 415:13, 606:6</p> <p><b>putting</b> [9] - 449:7, 457:16, 491:8, 491:9, 515:12, 544:14, 591:13, 600:6, 617:2</p> <p><b>PV</b> [4] - 349:10, 349:11, 571:7</p> <p><b>PWP</b> [1] - 348:14</p>	<p><b>qualified</b> [2] - 504:8, 366:11, 573:4</p> <p><b>qualify</b> [6] - 367:3, 375:19, 379:4, 448:17, 477:19, 488:17</p> <p><b>qualities</b> [1] - 569:13</p> <p><b>quality</b> [11] - 363:20, 450:16, 450:18, 450:22, 450:25, 465:13, 516:11, 587:13, 622:19, 622:21</p> <p><b>quantify</b> [4] - 376:8, 452:10, 488:17, 497:11</p> <p><b>quantities</b> [1] - 539:5</p> <p><b>quantity</b> [2] - 373:12, 373:14</p> <p><b>quarter</b> [15] - 557:24, 558:2, 558:16, 559:22, 563:13, 567:11, 569:9, 569:10, 576:15, 577:1, 577:11, 579:25, 580:20, 597:23</p> <p><b>quarter-inch</b> [2] - 569:9, 569:10</p> <p><b>question's</b> [1] - 366:9</p> <p><b>questioning</b> [2] - 366:2, 501:17</p> <p><b>Questions</b> [27] - 333:7, 333:13, 333:19, 333:23, 334:4, 334:9, 334:14, 334:16, 334:22, 335:6, 335:12, 335:17, 335:22, 336:6, 336:10, 336:19, 337:6, 337:13, 337:18, 337:22, 338:6, 338:10, 338:15, 338:18, 338:22, 339:6, 339:13</p> <p><b>questions</b> [97] - 359:19, 370:15, 370:24, 371:9, 374:20, 374:22, 376:21, 379:17, 380:11, 382:22, 384:18, 384:19, 386:9, 388:3, 388:7, 388:19, 390:21, 391:17, 398:18, 399:5, 405:10, 406:14, 412:12, 418:25, 425:8,</p>
<div>Q</div>				
<p><b>qualifications</b> [4] - 477:18, 505:11, 518:19, 579:12</p> <p><b>Qualifications</b> [4] - 340:8, 343:15, 343:23, 344:25</p>				

427:5, 428:23, 428:25, 431:24, 432:20, 434:7, 437:9, 437:22, 437:24, 440:2, 445:7, 445:9, 445:11, 445:14, 446:15, 446:17, 446:23, 452:17, 456:18, 457:4, 461:3, 467:10, 467:15, 468:25, 469:2, 469:5, 472:4, 475:20, 476:5, 479:7, 504:17, 509:3, 509:5, 511:10, 511:12, 514:15, 515:24, 518:9, 518:11, 521:3, 522:9, 522:14, 528:12, 550:7, 550:9, 553:12, 553:14, 553:17, 553:20, 561:7, 561:9, 561:16, 561:19, 565:10, 579:19, 579:21, 582:18, 582:20, 589:5, 589:8, 591:23, 591:25, 593:5, 593:16, 598:22, 602:19, 610:2, 611:23, 612:8, 612:12, 636:12, 640:4 <b>quick</b> [12] - 378:21, 391:19, 409:2, 495:12, 497:16, 511:16, 557:16, 557:19, 557:20, 568:13, 621:25, 636:15 <b>quicker</b> [2] - 484:15, 630:12 <b>quickly</b> [5] - 368:5, 392:21, 472:14, 506:15, 590:6 <b>quiet</b> [13] - 372:15, 372:17, 480:18, 480:23, 481:7, 481:10, 481:17, 481:19, 483:10, 483:19, 491:4, 514:7, 576:24 <b>quieter</b> [1] - 510:23 <b>quietest</b> [1] - 495:18 <b>quite</b> [14] - 354:18, 372:18, 448:14, 462:17, 488:19,	499:11, 564:4, 581:5, 584:12, 587:24, 593:19, 623:1, 639:11, 639:22 <b>quote</b> [1] - 462:4  <b>R</b> <b>radiates</b> [1] - 579:15 <b>radiofrequency</b> [1] - 444:17 <b>radius</b> [2] - 559:8, 563:5 <b>rain</b> [1] - 562:8 <b>rains</b> [1] - 376:25 <b>raise</b> [3] - 424:18, 572:10, 607:4 <b>raised</b> [5] - 404:9, 424:9, 467:15, 489:10, 620:4 <b>ramp</b> [2] - 544:2, 568:22 <b>ramp-up</b> [1] - 544:2 <b>rampant</b> [1] - 544:16 <b>ran</b> [1] - 484:19 <b>Rand</b> [1] - 341:3 <b>range</b> [17] - 373:17, 373:19, 375:24, 381:8, 381:16, 381:17, 381:19, 382:18, 481:11, 481:20, 481:21, 497:5, 516:6, 534:12, 534:13, 541:23, 557:11 <b>ranges</b> [7] - 382:9, 382:15, 495:13, 505:12, 519:11, 519:13, 519:17 <b>Rapid</b> [1] - 340:10 <b>rapidly</b> [1] - 422:15 <b>rate</b> [3] - 356:6, 462:24, 492:8 <b>rated</b> [1] - 487:10 <b>rather</b> [6] - 380:19, 510:18, 588:17, 642:1, 642:2, 642:4 <b>reach</b> [5] - 545:25, 547:14, 547:16, 547:17, 610:12 <b>reaching</b> [3] - 539:19, 539:20, 541:1 <b>react</b> [1] - 550:1 <b>read</b> [40] - 353:16, 353:20, 358:23, 360:2, 368:3, 368:19, 368:25, 369:12, 370:3, 374:6, 377:5, 414:3,	418:6, 418:12, 418:13, 423:5, 423:8, 423:12, 423:17, 423:20, 423:22, 424:2, 478:11, 480:12, 490:11, 500:4, 501:23, 502:18, 503:21, 534:9, 566:4, 566:7, 566:21, 586:7, 586:25, 589:25, 595:12, 632:10, 633:14, 633:15 <b>readily</b> [1] - 351:19 <b>reading</b> [8] - 358:19, 410:25, 452:11, 454:12, 498:5, 588:16, 594:10, 616:9 <b>reads</b> [2] - 366:8, 390:17 <b>ready</b> [2] - 398:23, 565:18 <b>real</b> [5] - 544:21, 545:18, 559:16, 574:25, 616:19 <b>reality</b> [1] - 353:1 <b>realize</b> [1] - 557:3 <b>realized</b> [1] - 616:13 <b>realizes</b> [1] - 545:19 <b>really</b> [34] - 354:23, 368:18, 372:20, 375:5, 376:9, 390:9, 400:6, 402:4, 404:20, 439:3, 447:16, 449:15, 450:15, 457:7, 465:13, 465:14, 465:15, 501:14, 501:15, 503:10, 507:9, 517:6, 539:25, 540:1, 579:16, 581:22, 596:23, 602:13, 607:10, 607:12, 625:14, 629:17, 638:24, 639:13 <b>Realtime</b> [2] - 643:6, 643:19 <b>rear</b> [1] - 382:14 <b>reason</b> [18] - 354:5, 369:25, 370:1, 370:2, 378:2, 389:9, 390:5, 391:16, 405:22, 416:12, 460:3, 461:2, 491:11, 491:12, 534:17, 616:12, 627:13, 630:15	<b>reasoning</b> [1] - 403:4 <b>reasons</b> [4] - 369:17, 386:21, 516:10, 630:16 <b>rebuttal</b> [1] - 570:11 <b>REBUTTAL</b> [1] - 339:9 <b>Rebuttal</b> [30] - 340:4, 341:15, 343:10, 343:12, 343:20, 344:22, 344:23, 344:24, 351:17, 353:22, 360:2, 360:16, 361:16, 362:13, 377:6, 430:25, 442:23, 443:1, 444:24, 446:12, 473:19, 473:22, 474:21, 502:14, 504:1, 504:9, 504:11, 504:14, 523:5, 523:24 <b>REC</b> [1] - 604:15 <b>recalling</b> [1] - 641:1 <b>receive</b> [2] - 357:22, 444:20 <b>received</b> [4] - 355:23, 444:18, 522:11, 624:17 <b>receiver</b> [3] - 498:19, 498:20 <b>receivers</b> [2] - 486:9, 486:11 <b>receiving</b> [2] - 489:10, 489:12 <b>recent</b> [1] - 365:10 <b>recently</b> [1] - 587:12 <b>reception</b> [2] - 402:10, 403:14 <b>receptor</b> [6] - 500:17, 509:14, 585:10, 585:14, 586:7, 604:19 <b>Receptor</b> [2] - 605:3, 605:7 <b>receptors</b> [5] - 474:13, 500:17, 586:8, 604:11, 604:13 <b>recess</b> [10] - 406:22, 406:24, 476:16, 476:18, 528:18, 528:20, 595:16, 595:18, 601:14, 642:16 <b>reclassified</b> [1] - 443:9 <b>recognize</b> [2] - 543:15, 546:2 <b>recognizes</b> [4] - 524:25, 545:15,	545:16, 546:19 37 <b>recollect</b> [1] - 641:1 <b>recollection</b> [3] - 354:17, 364:1, 501:3 <b>recommend</b> [2] - 480:22, 485:19 <b>recommendation</b> [1] - 553:24 <b>recommendations</b> [2] - 426:10, 468:21 <b>Recommended</b> [1] - 349:6 <b>recommended</b> [7] - 442:11, 442:12, 444:22, 483:21, 517:10, 526:11, 551:11 <b>recommends</b> [1] - 494:18 <b>reconnaissance</b> [1] - 442:4 <b>record</b> [22] - 365:15, 406:21, 410:20, 436:13, 445:18, 475:11, 475:13, 476:15, 504:13, 504:19, 509:22, 571:10, 596:3, 601:12, 601:19, 602:23, 603:14, 604:7, 613:5, 613:22, 613:24, 629:15 <b>record's</b> [2] - 554:12, 609:7 <b>records</b> [2] - 460:25, 574:7 <b>recount</b> [2] - 617:14, 618:4 <b>recounting</b> [1] - 620:21 <b>recreational</b> [1] - 404:5 <b>RECROSS</b> [11] - 379:18, 380:13, 383:1, 384:22, 388:8, 425:13, 427:7, 469:8, 469:22, 471:9, 518:16 <b>Recross</b> [33] - 333:7, 333:8, 333:8, 333:9, 333:14, 333:14, 333:24, 333:24, 333:25, 334:9, 334:14, 334:15, 334:15, 334:16, 334:17, 334:23, 334:23, 335:7, 335:7, 335:8,
--	--	---	--	---

<p>335:13, 336:20, 336:21, 337:7, 337:8, 337:8, 337:9, 337:14, 337:15, 337:23, 338:11, 338:19, 339:7</p> <p><b>recross</b> [4] - 425:9, 469:1, 471:6, 569:19</p> <p><b>RECROSS- EXAMINATION</b> [11] - 379:18, 380:13, 383:1, 384:22, 388:8, 425:13, 427:7, 469:8, 469:22, 471:9, 518:16</p> <p><b>Recross- Examination</b> [33] - 333:7, 333:8, 333:8, 333:9, 333:14, 333:14, 333:24, 333:24, 333:25, 334:9, 334:14, 334:15, 334:15, 334:16, 334:17, 334:23, 334:23, 335:7, 335:7, 335:8, 335:13, 336:20, 336:21, 337:7, 337:8, 337:8, 337:9, 337:14, 337:15, 337:23, 338:11, 338:19, 339:7</p> <p><b>Red</b> [4] - 349:10, 349:11, 571:7</p> <p><b>red</b> [6] - 435:3, 583:22, 603:16, 603:18, 603:19, 622:7</p> <p><b>redirect</b> [9] - 359:18, 379:14, 388:4, 424:23, 468:6, 514:11, 518:13, 554:18, 569:3</p> <p><b>Redirect</b> [9] - 333:13, 334:22, 335:6, 335:12, 335:17, 336:20, 337:7, 337:14, 339:6</p> <p><b>REDIRECT</b> [4] - 425:1, 468:8, 514:13, 569:5</p> <p><b>reducing</b> [2] - 489:2, 489:4</p> <p><b>redundant</b> [1] - 562:17</p> <p><b>Reece</b> [3] - 332:16, 522:11, 583:5</p> <p><b>Reece's</b> [1] - 642:10</p> <p><b>refer</b> [8] - 353:6, 387:10, 447:3,</p>	<p>451:3, 451:16, 456:20, 608:25, 633:11</p> <p><b>reference</b> [9] - 351:19, 356:17, 362:13, 362:21, 362:23, 380:16, 381:7, 388:11, 450:12</p> <p><b>referenced</b> [6] - 353:16, 353:23, 356:11, 366:15, 369:8, 533:18</p> <p><b>references</b> [4] - 479:24, 504:1, 514:15, 522:15</p> <p><b>referencing</b> [3] - 462:14, 479:16, 517:15</p> <p><b>referred</b> [5] - 365:18, 447:5, 449:18, 479:3, 512:23</p> <p><b>referring</b> [14] - 362:16, 362:19, 442:23, 451:3, 455:17, 466:21, 502:16, 529:12, 559:7, 560:12, 598:11, 609:9, 613:9, 635:14</p> <p><b>refers</b> [1] - 454:18</p> <p><b>reflect</b> [1] - 579:9</p> <p><b>refresh</b> [1] - 501:3</p> <p><b>refuge</b> [1] - 459:15</p> <p><b>refused</b> [1] - 572:3</p> <p><b>regard</b> [2] - 372:6, 579:22</p> <p><b>regarding</b> [11] - 340:21, 343:19, 431:24, 444:16, 451:6, 464:20, 468:11, 573:8, 620:20, 633:25, 634:1</p> <p><b>Regarding</b> [1] - 343:12</p> <p><b>regardless</b> [2] - 369:17, 369:25</p> <p><b>regions</b> [1] - 498:23</p> <p><b>Register</b> [1] - 442:11</p> <p><b>Registered</b> [2] - 643:5, 643:19</p> <p><b>registered</b> [1] - 572:10</p> <p><b>regretfully</b> [1] - 587:17</p> <p><b>regular</b> [8] - 393:19, 443:17, 443:18, 539:8, 630:5, 634:7, 634:9, 634:11</p> <p><b>regularly</b> [1] - 517:24</p> <p><b>regulate</b> [3] - 515:11, 515:21, 640:8</p> <p><b>regulating</b> [1] - 369:18</p>	<p><b>regulation</b> [1] - 363:16</p> <p><b>regulations</b> [4] - 363:11, 363:13, 486:19, 515:17</p> <p><b>regulatory</b> [3] - 478:15, 478:16, 509:12</p> <p><b>reigns</b> [1] - 601:16</p> <p><b>Reiss</b> [18] - 332:23, 333:6, 333:9, 333:12, 333:18, 334:19, 335:16, 335:22, 336:5, 336:14, 336:19, 338:5, 338:10, 338:14, 338:18, 338:22, 420:22, 554:12</p> <p><b>REISS</b> [18] - 398:22, 398:25, 399:2, 405:5, 406:14, 425:12, 553:16, 553:19, 554:16, 561:7, 570:3, 589:19, 589:21, 591:23, 610:4, 610:6, 611:21, 637:21</p> <p><b>reissued</b> [1] - 484:12</p> <p><b>reiterate</b> [1] - 567:2</p> <p><b>relabel</b> [1] - 608:19</p> <p><b>relate</b> [5] - 372:15, 372:19, 376:14, 592:23, 622:5</p> <p><b>Related</b> [1] - 342:6</p> <p><b>related</b> [6] - 365:7, 371:22, 488:1, 572:23, 606:11, 620:16</p> <p><b>relates</b> [1] - 588:8</p> <p><b>relating</b> [2] - 341:8, 386:13</p> <p><b>relation</b> [3] - 426:17, 573:7, 599:23</p> <p><b>relations</b> [1] - 587:14</p> <p><b>relationship</b> [13] - 352:12, 365:13, 382:7, 382:8, 382:11, 387:2, 387:4, 395:3, 395:25, 452:19, 463:24, 464:21, 592:25</p> <p><b>Relationship</b> [1] - 344:19</p> <p><b>relative</b> [2] - 448:4, 464:7</p> <p><b>relatively</b> [4] - 576:6, 576:9, 578:14</p> <p><b>release</b> [1] - 484:14</p>	<p><b>releases</b> [1] - 624:25</p> <p><b>relevance</b> [1] - 426:13</p> <p><b>relevant</b> [7] - 373:11, 386:20, 390:9, 532:11, 532:23, 621:8, 629:11</p> <p><b>reliability</b> [1] - 541:20</p> <p><b>reliable</b> [1] - 551:16</p> <p><b>rely</b> [1] - 594:23</p> <p><b>relying</b> [3] - 370:9, 468:17, 600:22</p> <p><b>remained</b> [1] - 485:10</p> <p><b>remember</b> [23] - 373:6, 381:11, 389:23, 399:9, 411:12, 411:21, 412:16, 420:22, 433:23, 459:20, 462:14, 478:7, 493:22, 493:23, 495:13, 495:15, 500:22, 549:5, 553:22, 568:3, 571:21, 589:15, 617:9</p> <p><b>remembered</b> [1] - 574:3</p> <p><b>remind</b> [4] - 351:9, 431:12, 476:24, 571:5</p> <p><b>remnants</b> [1] - 499:23</p> <p><b>remotely</b> [1] - 458:18</p> <p><b>removed</b> [2] - 474:10, 485:2</p> <p><b>render</b> [1] - 361:2</p> <p><b>rent</b> [1] - 393:16</p> <p><b>repair</b> [1] - 544:22</p> <p><b>repaired</b> [1] - 552:21</p> <p><b>repeat</b> [12] - 366:12, 374:11, 390:15, 390:16, 442:5, 523:21, 529:4, 531:22, 533:6, 542:25, 586:11, 619:1</p> <p><b>rephrase</b> [4] - 405:5, 406:1, 538:20, 610:18</p> <p><b>replicate</b> [1] - 503:4</p> <p><b>replicated</b> [1] - 502:21</p> <p><b>replied</b> [1] - 464:20</p> <p><b>Report</b> [4] - 340:14, 341:12, 342:19, 349:4</p> <p><b>report</b> [15] - 358:12, 358:18, 358:21, 362:24, 363:25, 406:16, 423:10, 464:18, 474:3, 483:1, 484:13,</p>	<p>497:15, 500:20, 38 500:25, 613:21</p> <p><b>reported</b> [2] - 363:20, 380:5</p> <p><b>Reported</b> [2] - 332:24, 346:18</p> <p><b>Reporter</b> [6] - 366:8, 390:17, 643:6, 643:19, 643:19</p> <p><b>REPORTER</b> [1] - 538:3</p> <p><b>reporter</b> [3] - 601:13, 628:20, 643:9</p> <p><b>Reporting</b> [1] - 332:25</p> <p><b>reporting</b> [1] - 364:10</p> <p><b>reports</b> [4] - 423:6, 423:8, 529:20, 536:4</p> <p><b>represent</b> [2] - 508:20, 580:12</p> <p><b>representation</b> [2] - 436:2, 623:16</p> <p><b>representations</b> [1] - 618:14</p> <p><b>representative</b> [2] - 421:22, 617:25</p> <p><b>representatives</b> [1] - 631:20</p> <p><b>represented</b> [3] - 415:2, 625:11, 633:9</p> <p><b>representing</b> [1] - 437:4</p> <p><b>reproducing</b> [1] - 502:25</p> <p><b>reproduction</b> [1] - 503:15</p> <p><b>request</b> [3] - 554:14, 588:7, 626:11</p> <p><b>requesting</b> [3] - 413:6, 504:15, 557:9</p> <p><b>Requests</b> [17] - 345:14, 345:17, 345:20, 345:22, 345:23, 345:25, 346:4, 346:7, 346:9, 347:5, 347:5, 349:12, 349:13, 349:14, 349:18, 349:20, 349:21</p> <p><b>requests</b> [1] - 571:8</p> <p><b>require</b> [1] - 516:13</p> <p><b>required</b> [9] - 412:24, 434:16, 442:19, 471:18, 471:23, 478:21, 527:10, 557:24, 558:5</p> <p><b>requirement</b> [3] - 433:24, 478:14, 478:16</p> <p><b>requirements</b> [4] - 471:20, 515:14,</p>
--	--	---	---	---

525:15, 590:10 <b>requires</b> [4] - 456:8, 477:17, 576:11, 589:2 <b>requiring</b> [1] - 478:17 <b>rerun</b> [1] - 486:16 <b>research</b> [5] - 503:6, 503:13, 563:20, 607:24, 611:15 <b>Research</b> [5] - 340:9, 340:11, 340:15, 340:17, 341:4 <b>researching</b> [1] - 619:21 <b>reserve</b> [2] - 474:24, 570:11 <b>reserved</b> [1] - 402:20 <b>Residence</b> [5] - 346:22, 347:17, 347:22, 348:6, 348:8 <b>residence</b> [28] - 347:18, 399:12, 399:22, 400:23, 407:16, 415:16, 577:3, 577:4, 583:16, 584:1, 585:2, 585:15, 585:19, 585:22, 586:17, 586:20, 588:13, 588:14, 591:1, 602:5, 602:24, 602:25, 603:15, 603:20, 603:21, 604:2, 604:18, 604:24 <b>residences</b> [4] - 427:25, 500:17, 526:16, 583:18 <b>resident</b> [2] - 571:17, 625:3 <b>Residential</b> [3] - 344:5, 344:9, 344:20 <b>residents</b> [1] - 404:1 <b>residual</b> [1] - 527:15 <b>resource</b> [1] - 442:4 <b>Resource</b> [1] - 344:14 <b>resources</b> [2] - 430:5, 431:7 <b>respect</b> [9] - 352:20, 372:12, 425:16, 468:10, 493:4, 514:16, 564:3, 582:14, 635:13 <b>respected</b> [1] - 494:15 <b>respectively</b> [1] - 538:11 <b>respond</b> [14] - 432:5, 439:11, 478:6, 480:10, 480:24, 482:5, 482:14, 482:19, 483:13, 532:12, 532:13, 566:1, 566:2 <b>responded</b> [1] - 474:19 <b>respondents</b> [1] - 490:19 <b>responding</b> [1] - 514:16 <b>responds</b> [3] - 480:18, 480:20, 525:1 <b>response</b> [22] - 359:16, 368:10, 386:14, 387:1, 389:6, 390:1, 390:13, 390:19, 391:5, 391:22, 444:18, 444:20, 445:1, 459:6, 478:14, 478:17, 480:17, 491:7, 504:5, 553:20, 624:17 <b>Response</b> [2] - 349:19, 349:21 <b>Responses</b> [22] - 342:24, 345:4, 345:5, 345:6, 345:9, 345:13, 345:16, 345:19, 345:21, 345:23, 345:24, 346:3, 346:6, 346:8, 346:10, 348:16, 348:17, 348:18, 348:19, 348:20, 348:24, 349:18 <b>responses</b> [12] - 380:2, 389:13, 389:16, 390:3, 391:11, 393:4, 444:25, 481:3, 482:17, 588:11, 595:3, 633:16 <b>responsibilities</b> [1] - 393:22 <b>responsible</b> [2] - 438:15, 615:13 <b>rest</b> [4] - 507:13, 514:25, 515:4, 624:24 <b>restate</b> [1] - 538:1 <b>restated</b> [1] - 629:3 <b>restrictions</b> [6] - 362:9, 405:11, 443:11, 505:15, 505:16, 505:17 <b>result</b> [1] - 621:14 <b>resulted</b> [2] - 474:7, 626:16 <b>resulting</b> [1] - 451:25	<b>Results</b> [2] - 340:5, 343:13 <b>results</b> [5] - 442:8, 474:4, 486:8, 497:6, 498:2 <b>resume</b> [2] - 523:14, 523:17 <b>Resume</b> [3] - 343:7, 343:17, 344:23 <b>retire</b> [2] - 615:15, 620:3 <b>retired</b> [4] - 393:18, 615:16, 615:24, 616:6 <b>returned</b> [2] - 572:5, 628:19 <b>revelation</b> [1] - 372:11 <b>review</b> [20] - 354:24, 355:1, 357:10, 412:4, 435:19, 447:6, 447:20, 447:22, 464:9, 468:2, 471:16, 471:18, 471:21, 471:22, 478:25, 484:17, 533:22, 533:23, 589:22, 590:2 <b>Review</b> [6] - 340:10, 340:12, 340:18, 341:8, 342:12, 343:21 <b>reviewed</b> [13] - 357:4, 361:5, 361:10, 361:13, 364:15, 365:1, 367:15, 369:14, 379:25, 380:6, 390:23, 440:21, 533:19 <b>reviewing</b> [2] - 478:3, 484:25 <b>Revised</b> [2] - 343:21, 344:22 <b>revision</b> [1] - 484:2 <b>Rhode</b> [2] - 344:13, 344:14 <b>rhythmic</b> [1] - 489:22 <b>Richard</b> [1] - 344:15 <b>RICHARD</b> [1] - 337:11 <b>Rick</b> [1] - 498:5 <b>rid</b> [1] - 415:9 <b>ride</b> [1] - 597:7 <b>right-hand</b> [1] - 534:7 <b>rights</b> [3] - 369:19, 625:5, 628:10 <b>rigorous</b> [2] - 365:11, 477:17 <b>ring</b> [3] - 510:11, 510:24, 510:25 <b>rings</b> [5] - 510:6, 510:17, 512:23, 512:24, 513:19 <b>Risk</b> [2] - 348:10, 349:3 <b>risk</b> [2] - 532:17, 551:12 <b>Risks</b> [1] - 347:16 <b>Rislov</b> [1] - 332:13 <b>river</b> [1] - 423:1 <b>River</b> [2] - 426:4, 465:12 <b>road</b> [13] - 397:3, 415:4, 449:8, 584:15, 584:17, 584:20, 607:17, 615:7, 615:10, 620:24, 621:23, 624:6, 627:19 <b>roads</b> [3] - 456:24, 508:2, 526:17 <b>roadways</b> [1] - 508:17 <b>Roberts</b> [3] - 340:7, 341:15, 367:13 <b>ROBERTS</b> [1] - 333:10 <b>robins</b> [1] - 454:4 <b>Rochester</b> [1] - 599:5 <b>rockets</b> [1] - 607:11 <b>Rodney</b> [1] - 609:8 <b>Roger</b> [2] - 407:12, 408:6 <b>Roger's</b> [1] - 407:24 <b>Roland</b> [6] - 411:12, 411:15, 411:17, 617:17, 617:24, 618:18 <b>role</b> [1] - 440:4 <b>roll</b> [1] - 382:13 <b>Ron</b> [1] - 411:9 <b>Ronnie</b> [2] - 411:8, 411:18 <b>roof</b> [2] - 577:21, 578:1 <b>rookie</b> [2] - 570:16, 570:19 <b>room</b> [8] - 425:21, 426:23, 514:2, 519:3, 522:10, 573:20, 634:14, 637:24 <b>rooms</b> [3] - 636:23, 636:24 <b>roosting</b> [1] - 450:4 <b>root</b> [5] - 352:7, 352:8, 352:9, 535:22, 537:10 <b>rotates</b> [1] - 543:22 <b>rotating</b> [1] - 530:14 <b>rotation</b> [2] - 539:13, 542:11 <b>rotational</b> [2] - 575:24, 576:4	39 <b>rotations</b> [1] - 540:3 <b>rotor</b> [16] - 526:13, 529:6, 529:7, 531:14, 554:1, 554:4, 558:22, 558:24, 559:7, 559:8, 559:11, 560:25, 563:5, 563:9, 578:4, 578:6 <b>rotor's</b> [1] - 559:2 <b>rough</b> [1] - 580:16 <b>roughly</b> [8] - 399:16, 411:21, 509:24, 519:18, 526:14, 578:23, 579:6, 612:20 <b>route</b> [1] - 596:2 <b>routine</b> [1] - 477:15 <b>row</b> [1] - 520:22 <b>RPM</b> [7] - 540:12, 545:9, 545:11, 546:17, 546:24, 558:9, 567:21 <b>RPMs</b> [10] - 540:3, 540:4, 540:7, 545:21, 546:2, 546:9, 547:4, 547:8, 547:14, 556:24 <b>RPR</b> [1] - 332:24 <b>rubber</b> [1] - 605:17 <b>rude</b> [1] - 630:3 <b>rudimentary</b> [1] - 386:11 <b>Rueter</b> [1] - 346:20 <b>RUETER</b> [1] - 338:16 <b>Rueter's</b> [3] - 347:22, 348:3, 348:7 <b>rule</b> [2] - 452:7, 618:8 <b>ruling</b> [1] - 617:22 <b>run</b> [6] - 395:22, 415:11, 484:20, 486:3, 486:7, 511:5 <b>running</b> [1] - 397:5 <b>runs</b> [3] - 414:19, 578:19, 578:22 <b>rural</b> [8] - 424:5, 480:18, 481:7, 481:10, 482:15, 573:25, 614:20, 615:1 <b>Ryan</b> [1] - 344:15 <b>Rysdon</b> [1] - 341:14
<b>S</b>		



<p><b>S5</b> [1] - 347:5</p> <p><b>safe</b> [5] - 524:15, 527:11, 529:23, 556:21, 568:24</p> <p><b>safeguard</b> [3] - 556:17, 564:17, 564:18</p> <p><b>safely</b> [3] - 462:20, 527:9, 558:12</p> <p><b>safer</b> [1] - 608:4</p> <p><b>Safety</b> [7] - 340:20, 346:13, 527:7, 528:3, 565:20, 566:13, 566:14</p> <p><b>safety</b> [9] - 526:25, 527:14, 529:22, 535:2, 535:15, 546:11, 546:12, 551:7, 561:18</p> <p><b>sales</b> [1] - 555:11</p> <p><b>Salt</b> [2] - 380:5, 550:22</p> <p><b>sandhill</b> [1] - 457:24</p> <p><b>sarcastic</b> [1] - 446:24</p> <p><b>sat</b> [2] - 364:14, 634:15</p> <p><b>satisfied</b> [1] - 602:8</p> <p><b>Saturday</b> [1] - 401:4</p> <p><b>save</b> [1] - 632:10</p> <p><b>saw</b> [8] - 495:25, 529:10, 529:18, 533:20, 561:25, 585:24, 629:11, 633:10</p> <p><b>scale</b> [2] - 401:21, 517:23</p> <p><b>scared</b> [2] - 395:21, 537:11</p> <p><b>scares</b> [1] - 600:21</p> <p><b>scatter</b> [1] - 441:24</p> <p><b>scenario</b> [7] - 486:14, 487:17, 499:20, 500:21, 514:23, 515:2, 517:8</p> <p><b>scenery</b> [1] - 622:8</p> <p><b>Schenectady</b> [1] - 550:24</p> <p><b>Schoenfelder</b> [8] - 332:17, 345:7, 345:10, 345:13, 345:16, 345:19, 346:5</p> <p><b>SCHOENFELDER</b> [1] - 337:19</p> <p><b>Schoenfelder's</b> [6] - 345:8, 345:11, 345:13, 345:16, 345:19, 346:6</p> <p><b>Schomer</b> [2] - 493:25, 494:18</p>	<p><b>school</b> [15] - 394:8, 394:14, 396:14, 396:16, 396:19, 397:16, 398:10, 398:12, 400:16, 418:7, 418:10, 418:18, 571:18, 571:23, 610:14</p> <p><b>Science</b> [3] - 343:6, 522:23, 571:24</p> <p><b>science</b> [3] - 370:8, 430:5, 605:14</p> <p><b>scientific</b> [2] - 365:23, 366:17</p> <p><b>scoot</b> [1] - 481:22</p> <p><b>scope</b> [5] - 418:21, 524:14, 550:4, 626:20, 626:22</p> <p><b>SCOTT</b> [2] - 335:14, 338:16</p> <p><b>Scott</b> [8] - 344:4, 344:8, 347:22, 348:3, 348:7, 521:23, 522:1, 522:21</p> <p><b>scratch</b> [1] - 446:19</p> <p><b>SD</b> [2] - 341:14, 349:16</p> <p><b>se</b> [4] - 332:19, 332:20, 332:22, 364:5</p> <p><b>search</b> [1] - 470:25</p> <p><b>searches</b> [1] - 470:5</p> <p><b>searching</b> [1] - 562:19</p> <p><b>season</b> [2] - 459:20, 461:1</p> <p><b>seasonal</b> [2] - 453:8, 460:16</p> <p><b>seasons</b> [1] - 616:2</p> <p><b>secluded</b> [1] - 615:3</p> <p><b>Second</b> [7] - 345:11, 345:17, 346:3, 346:6, 348:18, 348:25, 349:12</p> <p><b>second</b> [15] - 352:14, 374:10, 386:25, 411:7, 422:20, 433:13, 451:5, 470:12, 481:19, 534:11, 534:15, 584:16, 601:7, 620:8, 622:13</p> <p><b>seconds</b> [2] - 440:17, 507:12</p> <p><b>Secretary</b> [1] - 341:14</p> <p><b>section</b> [16] - 368:9, 368:13, 368:16, 368:17, 413:24, 414:1, 452:12, 479:3, 577:5,</p>	<p>578:17, 580:21, 583:21, 584:13, 584:14, 600:4, 600:11</p> <p><b>Section</b> [6] - 348:4, 368:20, 368:25, 412:19, 413:23, 480:13</p> <p><b>see</b> [53] - 366:7, 368:9, 384:1, 387:15, 396:2, 397:1, 397:5, 398:2, 398:6, 407:17, 408:10, 408:15, 412:19, 412:21, 413:23, 418:12, 423:20, 436:7, 445:9, 445:18, 453:9, 457:16, 457:18, 464:14, 465:15, 466:18, 479:23, 496:4, 507:2, 517:5, 525:12, 531:10, 534:6, 542:8, 547:13, 548:11, 566:18, 578:5, 583:22, 584:3, 584:21, 585:3, 588:15, 590:4, 593:20, 601:10, 604:13, 608:22, 614:17, 619:16, 621:22, 642:14</p> <p><b>seeing</b> [4] - 437:19, 621:21, 622:1, 622:3</p> <p><b>seek</b> [1] - 352:6</p> <p><b>seeking</b> [1] - 631:12</p> <p><b>seem</b> [5] - 391:16, 510:16, 576:16, 576:18, 587:16</p> <p><b>Self</b> [1] - 346:18</p> <p><b>self</b> [4] - 379:6, 379:11, 379:13, 484:10</p> <p><b>self-diagnosing</b> [1] - 379:6</p> <p><b>self-explanatory</b> [1] - 484:10</p> <p><b>sell</b> [3] - 537:6, 623:13, 624:18</p> <p><b>selling</b> [2] - 624:11, 639:4</p> <p><b>send</b> [3] - 423:16, 536:16, 557:3</p> <p><b>sending</b> [2] - 543:10, 588:3</p> <p><b>sense</b> [11] - 357:24, 371:24, 392:2, 400:19, 449:15, 449:17, 475:10,</p>	<p>475:12, 517:23, 529:24, 539:11</p> <p><b>senses</b> [1] - 543:19</p> <p><b>sensitive</b> [7] - 381:12, 381:13, 488:8, 491:10, 491:12, 596:25, 599:16</p> <p><b>sensitivity</b> [2] - 491:16, 491:17</p> <p><b>sensitization</b> [1] - 381:3</p> <p><b>sensitized</b> [4] - 380:22, 380:23, 381:10, 381:18</p> <p><b>sensor</b> [1] - 557:3</p> <p><b>sensors</b> [1] - 541:22</p> <p><b>sensory</b> [2] - 389:24, 389:25</p> <p><b>sent</b> [4] - 377:2, 624:15, 631:22, 632:1</p> <p><b>sentence</b> [6] - 358:17, 358:23, 368:24, 454:22, 534:6, 538:8</p> <p><b>separate</b> [5] - 438:18, 438:21, 447:11, 466:24, 496:16</p> <p><b>separated</b> [1] - 560:3</p> <p><b>September</b> [3] - 431:1, 473:20, 635:11</p> <p><b>series</b> [1] - 631:8</p> <p><b>serious</b> [8] - 370:4, 370:14, 372:19, 372:22, 373:15, 380:21, 419:17, 419:22</p> <p><b>seriously</b> [1] - 372:16</p> <p><b>Service</b> [6] - 341:7, 342:3, 438:10, 450:14, 468:13, 468:22</p> <p><b>service</b> [2] - 438:10, 465:24</p> <p><b>session</b> [6] - 406:25, 476:20, 522:16, 528:21, 565:24, 595:19</p> <p><b>Set</b> [24] - 345:4, 345:5, 345:8, 345:11, 345:14, 345:17, 345:20, 345:22, 345:23, 345:25, 346:4, 346:6, 348:17, 348:18, 348:19, 348:20, 348:21, 348:25, 349:11, 349:12, 349:13, 349:18, 349:20, 349:21</p> <p><b>set</b> [11] - 441:6,</p>	<p>450:14, 450:23, 471:20, 471:24, 494:7, 494:8, 526:8, 571:8, 620:25, 621:3</p> <p><b>setback</b> [18] - 525:15, 525:22, 526:3, 526:11, 526:16, 526:19, 526:22, 526:23, 551:6, 553:23, 553:25, 554:19, 568:23, 588:12, 588:21, 588:22, 590:4, 611:6</p> <p><b>setbacks</b> [11] - 395:14, 409:15, 426:9, 426:11, 426:18, 588:9, 588:12, 588:17, 590:7, 620:5, 630:19</p> <p><b>sets</b> [1] - 494:6</p> <p><b>setting</b> [2] - 503:1, 619:9</p> <p><b>settings</b> [1] - 378:15</p> <p><b>settled</b> [2] - 353:24, 353:25</p> <p><b>settlement</b> [1] - 354:1</p> <p><b>seven</b> [5] - 408:21, 409:2, 600:15, 600:24, 600:25</p> <p><b>seven-mile</b> [2] - 600:15, 600:24</p> <p><b>seventh</b> [4] - 565:22, 566:4, 566:10, 566:18</p> <p><b>several</b> [4] - 353:8, 492:23, 543:21, 575:19</p> <p><b>severe</b> [1] - 575:4</p> <p><b>Shadow</b> [3] - 340:5, 340:6, 346:23</p> <p><b>shadow</b> [10] - 395:12, 399:8, 399:21, 401:25, 402:4, 425:3, 425:4, 426:5, 426:20, 542:16</p> <p><b>shall</b> [3] - 412:21, 471:17, 471:19</p> <p><b>shape</b> [2] - 513:21, 559:15</p> <p><b>shapes</b> [1] - 580:18</p> <p><b>share</b> [4] - 354:19, 425:17, 425:25, 536:20</p> <p><b>shared</b> [1] - 535:2</p> <p><b>shareholder</b> [1] - 410:11</p> <p><b>shed</b> [2] - 542:15, 568:17</p> <p><b>Shedding</b> [1] - 348:9</p> <p><b>shedding</b> [1] - 542:14</p>
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<p><b>sheds</b> <sup>[1]</sup> - 542:9</p> <p><b>sheet</b> <sup>[1]</sup> - 498:25</p> <p><b>sheets</b> <sup>[1]</sup> - 577:25</p> <p><b>shelter</b> <sup>[3]</sup> - 580:18, 581:9, 584:3</p> <p><b>Sherm</b> <sup>[8]</sup> - 348:5, 349:9, 349:10, 349:10, 349:11, 349:11, 349:12, 349:13</p> <p><b>SHERMAN</b> <sup>[1]</sup> - 335:19</p> <p><b>Sherman</b> <sup>[9]</sup> - 332:18, 345:21, 349:12, 349:13, 349:14, 571:1, 571:15, 591:24, 594:4</p> <p><b>Sherman's</b> <sup>[1]</sup> - 596:1</p> <p><b>shift</b> <sup>[1]</sup> - 444:23</p> <p><b>shifted</b> <sup>[2]</sup> - 485:19, 600:19</p> <p><b>shifting</b> <sup>[1]</sup> - 491:19</p> <p><b>Shimada</b> <sup>[1]</sup> - 341:21</p> <p><b>shine</b> <sup>[1]</sup> - 398:24</p> <p><b>shines</b> <sup>[1]</sup> - 552:23</p> <p><b>Shirley</b> <sup>[2]</sup> - 347:13, 349:5</p> <p><b>short</b> <sup>[12]</sup> - 406:24, 480:15, 481:5, 482:10, 507:19, 528:20, 564:17, 576:6, 587:18, 595:18, 601:14, 614:15</p> <p><b>short-term</b> <sup>[1]</sup> - 481:5</p> <p><b>shorter</b> <sup>[2]</sup> - 548:9, 575:4</p> <p><b>shorthand</b> <sup>[2]</sup> - 643:9</p> <p><b>shortly</b> <sup>[3]</sup> - 353:23, 530:10, 631:19</p> <p><b>shot</b> <sup>[1]</sup> - 437:2</p> <p><b>shoulder</b> <sup>[2]</sup> - 435:7, 579:1</p> <p><b>shoulders</b> <sup>[1]</sup> - 575:9</p> <p><b>shovel</b> <sup>[1]</sup> - 441:12</p> <p><b>show</b> <sup>[9]</sup> - 393:5, 435:2, 435:18, 462:3, 485:25, 486:1, 515:8, 583:6, 614:11</p> <p><b>showed</b> <sup>[4]</sup> - 365:13, 365:16, 437:17, 509:18</p> <p><b>showing</b> <sup>[3]</sup> - 434:24, 484:11, 580:1</p> <p><b>shown</b> <sup>[8]</sup> - 392:3, 428:4, 435:22, 436:18, 461:13, 485:21, 544:17, 553:3</p>	<p><b>shows</b> <sup>[7]</sup> - 369:14, 435:1, 447:8, 449:9, 484:12, 583:18, 604:10</p> <p><b>SHPO</b> <sup>[4]</sup> - 442:18, 442:21, 443:12, 443:17</p> <p><b>shrunk</b> <sup>[1]</sup> - 423:2</p> <p><b>shut</b> <sup>[33]</sup> - 432:8, 457:8, 457:19, 458:12, 458:14, 458:18, 458:24, 461:6, 462:1, 530:11, 539:17, 539:18, 539:20, 541:25, 542:3, 544:21, 545:6, 546:4, 546:15, 546:18, 547:2, 550:20, 551:4, 552:2, 552:7, 556:18, 556:20, 556:25, 557:25, 558:1, 558:5, 558:12, 575:12</p> <p><b>shutdown</b> <sup>[3]</sup> - 557:11, 557:18, 564:18</p> <p><b>shutoff</b> <sup>[1]</sup> - 558:6</p> <p><b>shuts</b> <sup>[4]</sup> - 540:21, 543:15, 547:18, 569:11</p> <p><b>sic</b> <sup>[2]</sup> - 383:9, 618:2</p> <p><b>sick</b> <sup>[1]</sup> - 596:8</p> <p><b>sickness</b> <sup>[1]</sup> - 574:19</p> <p><b>side</b> <sup>[29]</sup> - 427:22, 446:8, 467:2, 507:1, 523:1, 531:11, 534:7, 552:25, 570:21, 572:7, 580:14, 580:15, 583:19, 588:18, 591:5, 593:23, 605:16, 605:19, 605:21, 605:25, 606:2, 606:4, 606:6, 606:7, 622:14, 636:22, 636:25</p> <p><b>sides</b> <sup>[2]</sup> - 392:22, 580:16</p> <p><b>sight</b> <sup>[6]</sup> - 364:3, 365:5, 458:22, 458:23, 459:2, 577:23</p> <p><b>sighting</b> <sup>[1]</sup> - 462:1</p> <p><b>Sign</b> <sup>[1]</sup> - 348:12</p> <p><b>sign</b> <sup>[6]</sup> - 394:21, 411:20, 434:13, 437:6, 510:10, 625:2</p> <p><b>signal</b> <sup>[2]</sup> - 392:2,</p>	<p>557:4</p> <p><b>signals</b> <sup>[1]</sup> - 545:1</p> <p><b>signed</b> <sup>[21]</sup> - 394:24, 402:8, 402:15, 409:7, 410:14, 410:24, 411:13, 411:14, 411:17, 411:18, 412:1, 414:11, 428:15, 434:10, 435:10, 435:14, 436:2, 437:5, 624:24, 631:13</p> <p><b>significant</b> <sup>[4]</sup> - 465:22, 484:24, 485:3, 517:12</p> <p><b>significantly</b> <sup>[4]</sup> - 427:23, 484:23, 507:13, 548:9</p> <p><b>signing</b> <sup>[7]</sup> - 411:2, 411:25, 413:11, 413:16, 414:2, 414:7, 414:9</p> <p><b>similar</b> <sup>[9]</sup> - 382:7, 459:9, 487:20, 507:23, 508:1, 508:2, 508:3, 517:15, 547:22</p> <p><b>similarities</b> <sup>[1]</sup> - 435:20</p> <p><b>simple</b> <sup>[1]</sup> - 627:18</p> <p><b>simpler</b> <sup>[1]</sup> - 390:11</p> <p><b>simply</b> <sup>[6]</sup> - 400:10, 436:7, 436:22, 451:11, 499:22, 513:3</p> <p><b>simultaneously</b> <sup>[1]</sup> - 513:15</p> <p><b>single</b> <sup>[4]</sup> - 439:15, 471:3, 513:7, 515:12</p> <p><b>Sioux</b> <sup>[10]</sup> - 396:10, 420:15, 443:23, 549:2, 549:3, 549:4, 549:6, 549:7, 549:11, 549:18</p> <p><b>sister</b> <sup>[1]</sup> - 397:24</p> <p><b>sister-in-law's</b> <sup>[1]</sup> - 397:24</p> <p><b>sit</b> <sup>[2]</sup> - 423:25, 473:8</p> <p><b>site</b> <sup>[11]</sup> - 409:25, 440:8, 441:23, 455:1, 456:15, 525:12, 548:20, 556:5, 562:11, 578:13, 580:13</p> <p><b>site-specific</b> <sup>[2]</sup> - 455:1, 456:15</p> <p><b>sited</b> <sup>[4]</sup> - 369:21, 410:3, 432:7, 451:17</p> <p><b>Sites</b> <sup>[1]</sup> - 347:11</p>	<p><b>sites</b> <sup>[7]</sup> - 442:16, 443:9, 444:7, 471:2, 506:7, 536:18, 556:6</p> <p><b>Siting</b> <sup>[5]</sup> - 340:24, 340:25, 340:25, 349:16, 368:2</p> <p><b>siting</b> <sup>[8]</sup> - 367:14, 369:18, 525:15, 525:23, 526:4, 639:8, 640:9, 640:12</p> <p><b>sits</b> <sup>[1]</sup> - 605:17</p> <p><b>sitting</b> <sup>[4]</sup> - 519:15, 605:18, 616:9, 616:17</p> <p><b>situation</b> <sup>[5]</sup> - 480:21, 499:2, 552:4, 552:16, 564:13</p> <p><b>situations</b> <sup>[5]</sup> - 483:8, 505:10, 529:25, 543:21</p> <p><b>six</b> <sup>[10]</sup> - 424:13, 424:14, 459:21, 607:17, 617:3, 617:5, 619:11, 619:15, 619:19, 632:20</p> <p><b>sixth</b> <sup>[2]</sup> - 380:17, 632:16</p> <p><b>Sixth</b> <sup>[1]</sup> - 345:5</p> <p><b>size</b> <sup>[8]</sup> - 358:7, 358:8, 359:3, 359:5, 447:16, 448:11, 535:24, 593:18</p> <p><b>sketchiness</b> <sup>[1]</sup> - 624:23</p> <p><b>skew</b> <sup>[1]</sup> - 497:5</p> <p><b>skills</b> <sup>[1]</sup> - 582:14</p> <p><b>skip</b> <sup>[1]</sup> - 452:17</p> <p><b>skull</b> <sup>[1]</sup> - 605:20</p> <p><b>Sleep</b> <sup>[1]</sup> - 346:19</p> <p><b>sleep</b> <sup>[28]</sup> - 356:22, 359:15, 359:22, 359:25, 360:4, 360:10, 360:14, 360:21, 360:24, 361:3, 361:7, 361:11, 362:20, 363:8, 363:23, 364:6, 364:8, 364:11, 364:12, 364:19, 365:13, 365:16, 365:19, 365:20, 365:24, 366:18, 374:18, 575:5</p> <p><b>sleeping</b> <sup>[1]</sup> - 587:15</p> <p><b>slept</b> <sup>[3]</sup> - 492:21, 492:24, 493:6</p> <p><b>sliding</b> <sup>[1]</sup> - 381:14</p> <p><b>slightly</b> <sup>[3]</sup> - 381:13,</p>	<p>474:9, 586:18</p> <p><b>slope</b> <sup>[1]</sup> - 414:19</p> <p><b>slow</b> <sup>[2]</sup> - 516:24, 558:12</p> <p><b>slower</b> <sup>[2]</sup> - 539:15, 558:9</p> <p><b>slowing</b> <sup>[2]</sup> - 539:13, 563:16</p> <p><b>slowly</b> <sup>[1]</sup> - 633:2</p> <p><b>small</b> <sup>[21]</sup> - 393:20, 414:17, 414:22, 416:9, 511:8, 544:18, 564:1, 568:20, 569:15, 576:3, 576:6, 578:14, 578:24, 581:4, 595:12, 614:23, 616:1, 636:23, 636:24, 640:6, 641:10</p> <p><b>smaller</b> <sup>[5]</sup> - 510:18, 510:24, 511:6, 520:14, 623:25</p> <p><b>Smith</b> <sup>[21]</sup> - 332:15, 333:4, 333:16, 334:8, 334:19, 334:22, 335:4, 335:6, 335:10, 335:12, 337:4, 337:12, 337:15, 337:17, 338:8, 338:11, 468:6, 518:14, 518:18, 600:6, 642:11</p> <p><b>SMITH</b> <sup>[41]</sup> - 392:10, 392:15, 398:18, 405:2, 405:24, 418:20, 424:24, 425:2, 425:8, 428:5, 429:7, 429:12, 432:23, 436:5, 439:21, 440:1, 468:7, 468:9, 468:25, 470:7, 472:13, 472:17, 473:2, 474:20, 475:6, 475:19, 476:8, 476:12, 479:9, 479:15, 479:18, 481:22, 497:7, 504:3, 514:12, 514:14, 518:9, 518:14, 521:13, 521:17, 642:12</p> <p><b>snapshot</b> <sup>[1]</sup> - 507:7</p> <p><b>snow</b> <sup>[2]</sup> - 499:21, 511:14</p> <p><b>snowed</b> <sup>[1]</sup> - 552:4</p> <p><b>snows</b> <sup>[1]</sup> - 376:25</p>
--	--	--	---	---

<p><b>so-called</b> [2] - 372:9, 381:9</p> <p><b>social</b> [6] - 419:15, 419:17, 419:20, 419:22, 535:7, 621:10</p> <p><b>society</b> [1] - 494:3</p> <p><b>Society</b> [1] - 480:2</p> <p><b>soft</b> [1] - 499:13</p> <p><b>software</b> [1] - 458:17</p> <p><b>solicited</b> [1] - 357:19</p> <p><b>someone</b> [13] - 370:2, 375:12, 381:10, 383:11, 385:14, 397:15, 458:22, 491:18, 492:5, 550:19, 551:8, 592:10, 619:2</p> <p><b>something's</b> [5] - 539:24, 545:19, 556:24, 557:3, 599:18</p> <p><b>sometimes</b> [4] - 453:17, 576:19, 577:13, 622:12</p> <p><b>somewhat</b> [5] - 447:24, 487:4, 506:23, 567:7, 581:25</p> <p><b>somewhere</b> [10] - 400:3, 412:9, 416:23, 418:15, 498:2, 499:16, 550:19, 551:3, 590:5, 616:2</p> <p><b>son</b> [5] - 397:22, 562:2, 581:15, 581:19</p> <p><b>soon</b> [1] - 597:6</p> <p><b>sorry</b> [33] - 374:10, 388:21, 390:15, 405:3, 428:9, 442:25, 455:11, 481:24, 484:1, 484:22, 499:4, 510:3, 512:8, 512:14, 520:20, 524:7, 528:6, 529:7, 531:22, 533:6, 543:7, 558:23, 566:6, 566:7, 581:16, 592:11, 594:2, 605:8, 614:14, 624:9, 636:9, 638:24, 639:25</p> <p><b>sort</b> [12] - 355:23, 365:4, 387:12, 393:17, 396:21, 402:20, 426:1,</p>	<p>439:14, 447:17, 487:13, 499:20, 499:25</p> <p><b>sorts</b> [1] - 587:19</p> <p><b>SOUKUP</b> [1] - 336:12</p> <p><b>sound</b> [99] - 363:18, 363:22, 364:7, 365:1, 366:18, 372:17, 374:17, 375:23, 376:5, 381:5, 381:21, 383:15, 383:19, 384:5, 384:8, 384:10, 384:12, 384:13, 388:12, 388:17, 399:8, 472:12, 473:6, 473:25, 474:7, 474:17, 476:1, 477:3, 478:5, 480:14, 480:23, 481:5, 482:10, 482:20, 483:23, 487:6, 487:9, 487:12, 487:15, 488:8, 488:23, 489:4, 489:7, 489:20, 490:9, 490:16, 492:9, 492:15, 492:25, 493:11, 493:12, 493:18, 493:22, 494:23, 494:24, 495:17, 496:25, 497:2, 497:14, 500:9, 500:11, 501:1, 501:5, 501:12, 502:25, 505:1, 505:5, 506:9, 506:12, 507:10, 507:13, 507:15, 507:20, 510:7, 511:6, 512:3, 512:22, 516:5, 517:2, 520:8, 520:10, 520:15, 520:17, 576:20, 577:17, 577:18, 579:7, 579:15, 581:1, 585:13, 586:8, 588:3, 588:12, 591:3, 592:24, 604:9, 604:11, 636:19</p> <p><b>Sound</b> [3] - 342:6, 343:14, 346:24</p> <p><b>sounded</b> [1] - 598:16</p> <p><b>sounds</b> [15] - 379:1, 379:2, 385:12, 391:21, 458:8,</p>	<p>459:25, 488:25, 490:12, 516:10, 518:20, 521:21, 579:9, 581:10, 581:13, 605:23</p> <p><b>Sounds</b> [1] - 340:23</p> <p><b>source</b> [8] - 381:23, 498:17, 498:18, 498:20, 501:6, 501:7, 515:11, 515:12</p> <p><b>sources</b> [2] - 488:12, 493:18</p> <p><b>Sources</b> [1] - 341:19</p> <p><b>South</b> [22] - 332:25, 349:17, 350:2, 350:4, 376:24, 392:20, 460:5, 460:19, 461:8, 499:17, 500:7, 548:13, 549:1, 549:12, 551:23, 557:16, 558:8, 562:9, 571:16, 571:24, 643:7, 643:13</p> <p><b>south</b> [7] - 394:1, 405:17, 424:9, 581:12, 584:1, 584:11, 614:3</p> <p><b>SOUTH</b> [3] - 332:1, 332:5, 643:1</p> <p><b>southern</b> [2] - 393:8, 561:24</p> <p><b>southwest</b> [2] - 580:20, 584:14</p> <p><b>speaking</b> [7] - 356:1, 397:13, 503:20, 563:22, 563:24, 573:7, 579:11</p> <p><b>speaks</b> [3] - 402:22, 448:10, 527:7</p> <p><b>special</b> [1] - 539:2</p> <p><b>specialist</b> [1] - 605:24</p> <p><b>specialized</b> [1] - 503:2</p> <p><b>species</b> [11] - 432:13, 449:23, 449:24, 450:16, 451:25, 452:3, 454:7, 460:16, 460:22, 464:22, 465:13</p> <p><b>specific</b> [29] - 352:1, 360:7, 364:22, 453:5, 453:6, 455:1, 455:14, 456:15, 479:3, 480:11, 483:7, 483:16, 498:20, 498:22, 504:13, 505:10, 506:20, 506:21,</p>	<p>510:20, 511:25, 512:1, 522:9, 522:14, 527:14, 535:21, 562:11, 565:25, 621:5, 635:18</p> <p><b>specifically</b> [17] - 376:14, 385:15, 412:17, 464:1, 466:23, 480:4, 480:7, 480:13, 492:23, 493:23, 496:11, 505:8, 516:21, 546:14, 585:13, 629:25, 635:3</p> <p><b>specification</b> [1] - 515:14</p> <p><b>specifications</b> [4] - 486:5, 509:15, 510:20, 512:16</p> <p><b>specify</b> [1] - 505:15</p> <p><b>speculate</b> [2] - 354:23, 368:18</p> <p><b>speculating</b> [1] - 626:4</p> <p><b>speculation</b> [4] - 405:2, 428:6, 550:3, 628:2</p> <p><b>speed</b> [32] - 395:5, 457:21, 487:10, 496:14, 496:15, 520:25, 521:2, 534:15, 539:4, 539:7, 539:8, 539:14, 540:6, 540:9, 540:13, 543:19, 543:24, 545:11, 545:17, 545:18, 545:19, 546:23, 546:24, 546:25, 551:21, 558:9, 563:12, 567:22, 568:5, 583:5, 583:10</p> <p><b>speed's</b> [1] - 546:3</p> <p><b>speeds</b> [9] - 491:25, 534:10, 539:20, 540:12, 545:9, 545:16, 547:9, 552:25</p> <p><b>spend</b> [3] - 416:22, 534:3, 588:13</p> <p><b>spent</b> [2] - 492:24, 573:22</p> <p><b>spherical</b> [1] - 579:8</p> <p><b>spinning</b> [13] - 487:7, 492:7, 492:8, 508:11, 520:9, 521:2, 530:4, 530:7,</p>	<p>543:14, 551:19, 567:6, 573:21, 574:23</p> <p><b>split</b> [5] - 409:4, 409:20, 421:5, 520:2, 639:3</p> <p><b>spoken</b> [2] - 372:20, 538:4</p> <p><b>sponge</b> [1] - 398:4</p> <p><b>sponsor</b> [1] - 522:6</p> <p><b>sponsoring</b> [2] - 527:2, 528:3</p> <p><b>spot</b> [1] - 584:8</p> <p><b>spouse</b> [2] - 593:14, 593:15</p> <p><b>sPower</b> [17] - 348:13, 356:4, 394:25, 413:5, 429:20, 430:10, 432:6, 433:9, 434:9, 434:12, 434:23, 438:21, 439:1, 439:7, 524:8, 524:9, 524:16</p> <p><b>sPower's</b> [1] - 550:23</p> <p><b>spring</b> [3] - 432:11, 453:2, 453:4</p> <p><b>square</b> [4] - 448:13, 508:22, 559:14, 580:14</p> <p><b>squiggly</b> [1] - 578:19</p> <p><b>SS</b> [1] - 643:2</p> <p><b>stable</b> [1] - 507:10</p> <p><b>Staff</b> [26] - 332:23, 346:11, 371:11, 384:18, 398:20, 407:2, 420:23, 425:11, 433:1, 437:25, 464:14, 471:6, 471:14, 475:24, 509:6, 509:21, 521:8, 528:9, 553:15, 570:2, 571:8, 589:18, 589:24, 610:3, 637:19, 638:5</p> <p><b>STAFF</b> [1] - 332:12</p> <p><b>Staff's</b> [13] - 345:4, 345:5, 346:3, 346:6, 346:8, 348:20, 348:25, 349:11, 349:12, 349:19, 349:21, 440:20, 478:4</p> <p><b>STAFFS</b> [3] - 337:2, 339:2, 347:2</p> <p><b>stage</b> [3] - 544:4, 547:14, 620:25</p> <p><b>stand</b> [7] - 351:7, 407:1, 476:22,</p>
---	---	--	---	---

<p>528:22, 570:25, 595:21, 613:13</p> <p><b>Standard</b> <sup>[1]</sup> - 342:8</p> <p><b>standard</b> <sup>[18]</sup> - 466:7, 480:12, 481:5, 481:25, 482:2, 482:8, 483:3, 483:9, 483:18, 486:7, 493:17, 494:11, 505:4, 507:3, 508:21, 508:24, 515:16, 516:6</p> <p><b>standards</b> <sup>[20]</sup> - 465:15, 478:22, 479:4, 479:7, 479:23, 480:1, 480:4, 480:22, 481:2, 482:22, 482:24, 483:7, 494:3, 494:6, 494:7, 494:8, 505:7, 505:9, 512:2</p> <p><b>standing</b> <sup>[2]</sup> - 530:7, 542:24</p> <p><b>standpoint</b> <sup>[4]</sup> - 395:10, 457:8, 457:13, 641:25</p> <p><b>stands</b> <sup>[2]</sup> - 546:16, 549:12</p> <p><b>standstill</b> <sup>[2]</sup> - 538:10, 542:13</p> <p><b>starlings</b> <sup>[1]</sup> - 454:4</p> <p><b>start</b> <sup>[25]</sup> - 364:8, 364:18, 374:23, 374:24, 418:25, 445:9, 450:9, 455:24, 526:1, 530:9, 543:22, 543:24, 552:13, 552:20, 553:1, 553:2, 557:8, 570:13, 576:2, 590:25, 615:21, 626:15, 629:21</p> <p><b>started</b> <sup>[14]</sup> - 353:10, 392:21, 425:10, 543:1, 544:14, 568:21, 593:12, 596:14, 596:24, 597:1, 610:10, 615:6, 619:20, 630:11</p> <p><b>starter</b> <sup>[1]</sup> - 527:20</p> <p><b>starting</b> <sup>[9]</sup> - 371:10, 545:20, 546:21, 561:9, 569:1, 598:3, 598:21, 638:2, 642:13</p> <p><b>startled</b> <sup>[1]</sup> - 461:3</p> <p><b>starts</b> <sup>[12]</sup> - 539:10,</p>	<p>539:13, 542:14, 543:13, 544:19, 546:16, 557:10, 563:16, 563:17, 566:11, 566:19, 567:7</p> <p><b>startup</b> <sup>[2]</sup> - 542:8, 557:5</p> <p><b>Stata</b> <sup>[2]</sup> - 344:3, 344:7</p> <p><b>STATE</b> <sup>[2]</sup> - 332:1, 643:1</p> <p><b>State</b> <sup>[5]</sup> - 341:10, 341:17, 350:3, 571:24, 643:7</p> <p><b>state</b> <sup>[15]</sup> - 362:2, 362:5, 362:7, 362:9, 392:16, 398:10, 398:13, 398:15, 419:13, 449:22, 449:25, 451:24, 615:4, 624:22, 640:8</p> <p><b>statement</b> <sup>[10]</sup> - 443:16, 455:7, 503:3, 503:25, 534:17, 538:13, 547:11, 629:3, 632:7, 639:23</p> <p><b>Statement</b> <sup>[5]</sup> - 340:7, 340:16, 343:15, 343:22, 344:24</p> <p><b>statements</b> <sup>[2]</sup> - 455:9, 635:3</p> <p><b>states</b> <sup>[8]</sup> - 360:19, 380:21, 447:5, 453:23, 454:24, 464:9, 480:13, 500:25</p> <p><b>States</b> <sup>[1]</sup> - 534:20</p> <p><b>stating</b> <sup>[1]</sup> - 380:22</p> <p><b>status</b> <sup>[3]</sup> - 441:8, 442:3, 443:19</p> <p><b>statute</b> <sup>[1]</sup> - 419:15</p> <p><b>stay</b> <sup>[5]</sup> - 397:20, 448:16, 551:11, 596:23, 629:15</p> <p><b>stayed</b> <sup>[2]</sup> - 552:12, 568:21</p> <p><b>staying</b> <sup>[2]</sup> - 398:16, 575:7</p> <p><b>steel</b> <sup>[2]</sup> - 577:25, 620:1</p> <p><b>step</b> <sup>[14]</sup> - 391:18, 392:5, 472:6, 521:11, 543:21, 544:2, 546:1, 546:6, 546:23, 547:9, 547:13, 570:5, 575:1, 613:2</p> <p><b>step-up</b> <sup>[1]</sup> - 543:21</p>	<p><b>Stephen</b> <sup>[1]</sup> - 342:7</p> <p><b>stepping</b> <sup>[3]</sup> - 362:12, 382:6, 537:20</p> <p><b>steps</b> <sup>[1]</sup> - 546:22</p> <p><b>Stereo</b> <sup>[1]</sup> - 501:22</p> <p><b>Steven</b> <sup>[2]</sup> - 374:4, 501:20</p> <p><b>stick</b> <sup>[1]</sup> - 628:2</p> <p><b>sticking</b> <sup>[2]</sup> - 567:17, 567:19</p> <p><b>still</b> <sup>[41]</sup> - 351:10, 381:15, 381:19, 382:18, 398:14, 398:16, 403:25, 420:3, 420:5, 425:21, 438:8, 441:19, 445:4, 457:15, 459:6, 476:21, 476:24, 483:5, 483:14, 488:21, 496:22, 499:20, 499:23, 506:1, 511:6, 515:23, 530:7, 542:10, 542:24, 543:10, 546:16, 564:1, 572:9, 575:2, 609:23, 621:22, 624:19, 630:23, 634:21, 641:23</p> <p><b>stipulated</b> <sup>[4]</sup> - 571:6, 594:17, 595:4, 613:21</p> <p><b>stipulations</b> <sup>[1]</sup> - 456:7</p> <p><b>Stockton</b> <sup>[2]</sup> - 615:18, 628:9</p> <p><b>stop</b> <sup>[5]</sup> - 369:16, 445:17, 529:24, 530:15, 565:16</p> <p><b>stopped</b> <sup>[4]</sup> - 530:16, 530:20, 574:23, 610:14</p> <p><b>storage</b> <sup>[2]</sup> - 580:15</p> <p><b>storm</b> <sup>[1]</sup> - 557:15</p> <p><b>story</b> <sup>[1]</sup> - 612:2</p> <p><b>straight</b> <sup>[1]</sup> - 560:14</p> <p><b>straighten</b> <sup>[2]</sup> - 601:18, 601:20</p> <p><b>stream</b> <sup>[1]</sup> - 449:6</p> <p><b>streamline</b> <sup>[1]</sup> - 456:12</p> <p><b>streams</b> <sup>[5]</sup> - 448:22, 448:24, 448:25</p> <p><b>street</b> <sup>[2]</sup> - 571:16, 638:9</p> <p><b>Street</b> <sup>[3]</sup> - 394:13, 402:14, 638:7</p> <p><b>streets</b> <sup>[1]</sup> - 372:14</p> <p><b>stress</b> <sup>[1]</sup> - 371:20</p>	<p><b>stricken</b> <sup>[1]</sup> - 504:15</p> <p><b>strictly</b> <sup>[1]</sup> - 572:16</p> <p><b>strife</b> <sup>[1]</sup> - 403:17</p> <p><b>strike</b> <sup>[6]</sup> - 475:6, 475:7, 503:25, 504:12, 629:3, 629:4</p> <p><b>strikes</b> <sup>[1]</sup> - 564:15</p> <p><b>striking</b> <sup>[1]</sup> - 629:13</p> <p><b>string</b> <sup>[4]</sup> - 399:13, 399:14, 407:23, 410:2</p> <p><b>striping</b> <sup>[1]</sup> - 615:13</p> <p><b>stroke</b> <sup>[2]</sup> - 482:19, 573:17</p> <p><b>strong</b> <sup>[1]</sup> - 539:25</p> <p><b>strongly</b> <sup>[1]</sup> - 369:9</p> <p><b>struck</b> <sup>[2]</sup> - 551:8, 630:20</p> <p><b>Structure</b> <sup>[1]</sup> - 346:16</p> <p><b>structure</b> <sup>[1]</sup> - 550:2</p> <p><b>stuck</b> <sup>[3]</sup> - 530:5, 560:13, 560:14</p> <p><b>students</b> <sup>[1]</sup> - 396:15</p> <p><b>studied</b> <sup>[2]</sup> - 365:20, 490:15</p> <p><b>studies</b> <sup>[39]</sup> - 361:6, 362:13, 362:16, 363:6, 363:10, 363:14, 363:17, 363:25, 364:6, 365:1, 366:17, 366:23, 368:12, 371:3, 371:4, 372:7, 374:6, 380:5, 386:17, 431:15, 454:16, 462:3, 465:16, 477:15, 489:9, 489:13, 490:14, 490:23, 515:8, 516:2, 529:20, 536:4, 572:1, 602:12, 608:1, 608:3, 608:4, 611:16, 611:17</p> <p><b>Studies</b> <sup>[1]</sup> - 341:8</p> <p><b>study</b> <sup>[73]</sup> - 356:12, 356:15, 356:20, 356:25, 357:3, 357:6, 357:10, 358:5, 361:10, 361:13, 361:14, 361:16, 361:21, 362:8, 362:12, 362:14, 362:17, 362:24, 365:11, 367:17, 367:22, 368:1, 368:3, 373:1, 375:4, 386:20, 388:11, 388:13, 388:24, 390:9,</p>	<p>391:21, 391:24, 431:18, 431:19, 462:18, 462:19, 469:24, 474:17, 474:19, 476:1, 477:3, 478:5, 478:10, 483:23, 491:17, 494:24, 500:9, 501:19, 501:20, 501:24, 502:4, 502:7, 502:12, 502:17, 502:18, 502:23, 503:7, 503:9, 503:20, 503:21, 504:2, 504:5, 505:1, 509:10, 520:18, 525:11, 548:16, 585:8, 585:14, 604:9, 604:11</p> <p><b>Study</b> <sup>[8]</sup> - 341:12, 343:14, 344:6, 344:10, 347:13, 349:4, 364:9, 366:16</p> <p><b>studying</b> <sup>[3]</sup> - 365:12, 455:4, 503:11</p> <p><b>stuff</b> <sup>[6]</sup> - 395:13, 397:9, 398:5, 426:17, 426:20, 599:12</p> <p><b>style</b> <sup>[1]</sup> - 622:2</p> <p><b>sub</b> <sup>[2]</sup> - 511:9, 516:8</p> <p><b>subject</b> <sup>[9]</sup> - 367:6, 369:3, 407:1, 460:12, 464:3, 476:22, 524:6, 528:22, 534:15</p> <p><b>subjective</b> <sup>[3]</sup> - 364:10, 365:12, 501:21</p> <p><b>subjectively</b> <sup>[1]</sup> - 365:17</p> <p><b>submission</b> <sup>[1]</sup> - 533:20</p> <p><b>submissions</b> <sup>[2]</sup> - 529:18, 533:19</p> <p><b>submittal</b> <sup>[1]</sup> - 529:10</p> <p><b>submitted</b> <sup>[6]</sup> - 377:6, 431:6, 522:6, 573:6, 628:18, 633:16</p> <p><b>subsequent</b> <sup>[1]</sup> - 433:18</p> <p><b>subside</b> <sup>[1]</sup> - 369:17</p> <p><b>subsided</b> <sup>[1]</sup> - 425:19</p> <p><b>substantial</b> <sup>[2]</sup> - 373:5, 373:8</p> <p><b>substantially</b> <sup>[3]</sup> - 373:23, 622:20, 633:3</p> <p><b>substation</b> <sup>[2]</sup> -</p>
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469:16, 469:17 <b>substations</b> [1] - 641:17 <b>subtle</b> [4] - 596:15, 596:24, 598:1, 598:2 <b>subtleties</b> [1] - 599:15 <b>successful</b> [5] - 459:10, 461:13, 461:14, 462:16, 572:11 <b>successfully</b> [1] - 620:25 <b>sudden</b> [4] - 397:1, 424:15, 565:21, 623:21 <b>suffered</b> [1] - 373:1 <b>sufficient</b> [2] - 369:4, 455:2 <b>suggest</b> [3] - 366:17, 486:13, 499:14 <b>suggested</b> [6] - 485:22, 485:24, 498:24, 499:6, 500:2, 575:14 <b>suggestions</b> [1] - 499:4 <b>suggests</b> [3] - 482:15, 499:7, 500:5 <b>suitability</b> [2] - 447:18, 448:2 <b>suitable</b> [1] - 464:10 <b>SULLY</b> [1] - 643:3 <b>summa</b> [1] - 571:25 <b>summarize</b> [6] - 351:24, 523:18, 524:1, 524:4, 626:3, 633:2 <b>Summary</b> [1] - 347:12 <b>summary</b> [3] - 367:2, 474:15, 523:12 <b>summer</b> [5] - 417:6, 417:9, 453:9, 587:17, 617:9 <b>sun</b> [5] - 417:1, 426:14, 552:23, 553:3, 617:10 <b>sun's</b> [1] - 542:9 <b>Sunday</b> [1] - 587:25 <b>sunny</b> [1] - 377:3 <b>sunrise</b> [2] - 395:25, 402:4 <b>sunrises</b> [1] - 400:10 <b>sunset</b> [1] - 617:8 <b>sunshine</b> [2] - 376:25, 542:18 <b>supervisor</b> [1] - 615:13 <b>Supplemental</b> [7] - 340:7, 343:6, 343:14, 343:18,	343:22, 346:8, 430:20 <b>supplemental</b> [2] - 446:12, 446:14 <b>Support</b> [1] - 342:21 <b>support</b> [8] - 362:14, 363:6, 391:4, 427:24, 428:2, 543:20, 638:25, 640:1 <b>supporters</b> [1] - 427:19 <b>supporting</b> [2] - 397:11, 430:4 <b>suppose</b> [3] - 355:10, 398:22, 435:23 <b>supposed</b> [3] - 416:10, 436:21, 512:17 <b>surfaces</b> [1] - 579:9 <b>surgery</b> [1] - 596:10 <b>surprise</b> [4] - 427:17, 427:22, 458:3, 460:1 <b>surprised</b> [4] - 377:10, 427:13, 464:4, 561:25 <b>Surrebuttal</b> [1] - 344:22 <b>surrounded</b> [3] - 577:8, 577:14, 582:1 <b>surrounding</b> [6] - 363:13, 447:25, 448:4, 451:7, 451:12, 462:7 <b>surroundings</b> [1] - 607:20 <b>survey</b> [16] - 368:9, 369:6, 437:14, 441:9, 441:10, 441:14, 441:16, 442:4, 442:7, 443:20, 443:21, 466:7, 470:17, 470:19, 470:22, 470:24 <b>surveyed</b> [1] - 369:14 <b>surveys</b> [15] - 397:8, 409:16, 437:16, 437:17, 442:8, 443:24, 443:25, 447:9, 447:10, 447:12, 462:3, 465:5, 465:21, 470:3, 470:11 <b>susceptible</b> [3] - 386:6, 502:1, 503:16 <b>sustained</b> [4] - 366:4, 405:4, 436:6, 550:5 <b>Swedish</b> [1] - 342:12 <b>Swiss</b> [2] - 342:6,	572:10 <b>switch</b> [1] - 557:4 <b>switches</b> [1] - 527:20 <b>switching</b> [1] - 518:15 <b>sworn</b> [10] - 392:12, 429:9, 472:23, 522:2, 570:25, 571:2, 593:15, 595:23, 613:13, 613:16 <b>symptom</b> [3] - 352:5, 352:6, 352:7 <b>syndrome</b> [1] - 372:10 <b>system</b> [44] - 525:2, 525:3, 532:10, 539:3, 540:10, 540:12, 541:5, 541:7, 541:8, 541:14, 541:16, 541:17, 541:18, 543:9, 543:14, 544:6, 544:10, 544:11, 544:24, 545:3, 545:5, 545:10, 545:15, 546:7, 546:11, 546:14, 546:17, 547:7, 550:21, 552:10, 555:10, 555:16, 556:2, 556:4, 556:9, 556:11, 556:16, 556:19, 556:23, 565:2, 565:4, 568:14, 568:15 <b>system's</b> [1] - 543:3 <b>Systematic</b> [1] - 340:18 <b>systems</b> [7] - 531:21, 532:4, 539:4, 542:1, 543:25, 555:8, 568:24	549:12, 550:2, 585:4 <b>tallest</b> [2] - 549:10, 549:11 <b>tan</b> [2] - 435:13 <b>tanks</b> [1] - 576:13 <b>taper</b> [2] - 399:14, 559:17 <b>tapers</b> [1] - 398:13 <b>target</b> [1] - 509:10 <b>tax</b> [4] - 396:13, 396:14, 398:11, 625:6 <b>taxes</b> [1] - 625:4 <b>taxpayer</b> [1] - 625:4 <b>te-te-te-te</b> [1] - 573:19 <b>teach</b> [1] - 393:21 <b>teacher</b> [1] - 446:6 <b>team</b> [1] - 434:25 <b>Team</b> [1] - 349:4 <b>teams</b> [1] - 495:8 <b>Tech</b> [1] - 342:18 <b>tech</b> [1] - 550:25 <b>technical</b> [3] - 455:17, 541:15, 558:23 <b>technician</b> [1] - 527:8 <b>technicians</b> [1] - 535:7 <b>techniques</b> [2] - 494:9, 513:8 <b>technological</b> [1] - 422:14 <b>technology</b> [5] - 422:11, 422:16, 426:8, 458:17, 524:24 <b>teeth</b> [3] - 575:11, 575:13, 575:15 <b>telecommunications</b> [1] - 440:6 <b>temperature</b> [2] - 487:14, 539:16 <b>temperatures</b> [2] - 524:21, 546:10 <b>temporary</b> [3] - 416:1, 475:4, 576:5 <b>tend</b> [3] - 395:21, 405:16, 594:10 <b>tendency</b> [1] - 452:8 <b>tender</b> [3] - 528:15, 582:10, 633:20 <b>tendering</b> [1] - 475:17 <b>tends</b> [2] - 395:21, 513:17 <b>term</b> [12] - 353:3, 428:13, 433:23, 433:24, 450:10, 451:6, 451:11, 480:5, 481:5, 538:18, 569:9, 574:10	<b>terms</b> [9] - 363:11, 415:10, 447:17, 448:6, 535:18, 536:2, 599:2, 600:1, 624:7 <b>terrain</b> [3] - 486:4, 506:18, 506:23 <b>test</b> [3] - 386:14, 502:3, 506:6 <b>tested</b> [2] - 505:12, 544:17 <b>testified</b> [17] - 355:16, 379:22, 387:20, 392:13, 429:10, 439:25, 472:24, 522:3, 524:1, 525:5, 525:6, 545:14, 556:22, 571:3, 595:24, 613:17, 634:4 <b>testify</b> [5] - 419:6, 454:7, 549:22, 633:25, 639:19 <b>testifying</b> [11] - 355:15, 549:13, 549:17, 551:24, 555:14, 564:22, 565:1, 574:5, 574:12, 624:3, 631:8 <b>testimony</b> [9] - 353:9, 353:16, 355:12, 355:19, 355:21, 356:5, 360:19, 361:19, 361:21, 367:13, 373:4, 375:2, 376:17, 377:6, 377:13, 392:6, 404:18, 419:4, 419:5, 429:1, 431:6, 431:10, 431:22, 432:18, 436:5, 436:25, 438:14, 446:12, 446:13, 447:2, 451:2, 467:5, 470:9, 472:6, 474:16, 475:2, 475:16, 475:23, 476:3, 477:7, 478:3, 478:11, 479:1, 479:15, 490:24, 493:21, 497:8, 497:15, 498:5, 502:16, 502:17, 504:12, 510:12, 521:11, 523:13, 523:19, 523:20, 524:5, 528:11, 528:13, 532:9, 532:15, 549:20,
<b>T</b>				
<b>table</b> [4] - 431:15, 470:8, 484:12, 495:2 <b>Table</b> [4] - 346:20, 494:24, 494:25, 586:2 <b>table's</b> [1] - 484:11 <b>tablet</b> [1] - 599:7 <b>tabletop</b> [1] - 447:21 <b>tabs</b> [1] - 460:22 <b>tail</b> [1] - 584:12 <b>talkings</b> [1] - 411:16 <b>talks</b> [4] - 358:18, 417:18, 480:16, 481:3 <b>tall</b> [5] - 506:20, 549:1,				

<p>550:4, 560:2, 560:7, 564:21, 570:4, 570:18, 571:11, 572:22, 582:3, 594:5, 596:1, 596:4, 598:25, 599:3, 602:6, 608:8, 611:12, 611:13, 613:2, 620:14, 620:20, 621:8, 626:20, 626:25, 627:14, 630:12, 634:8</p> <p><b>Testimony</b> <sup>[43]</sup> - 335:20, 336:4, 336:9, 347:3, 347:4, 347:7, 347:14, 351:17, 353:22, 360:2, 360:16, 361:16, 362:13, 377:6, 430:15, 430:21, 430:25, 431:14, 442:24, 443:1, 444:24, 446:11, 446:12, 473:12, 473:15, 473:19, 473:22, 474:21, 489:17, 502:14, 504:1, 504:9, 504:11, 504:14, 523:3, 523:5, 523:23, 523:24, 532:22, 553:21, 602:9, 618:24, 621:4</p> <p><b>testing</b> <sup>[3]</sup> - 388:13, 441:13, 511:19</p> <p><b>tests</b> <sup>[2]</sup> - 357:15, 574:1</p> <p><b>Texas</b> <sup>[8]</sup> - 459:15, 500:7, 522:24, 561:23, 562:1, 562:2, 562:3, 562:10</p> <p><b>thalamus</b> <sup>[1]</sup> - 390:2</p> <p><b>THE</b> <sup>[198]</sup> - 332:1, 332:1, 332:2, 332:5, 332:9, 375:7, 375:11, 375:18, 376:9, 376:15, 376:18, 377:2, 377:8, 377:14, 377:16, 377:21, 378:2, 378:7, 378:11, 378:16, 378:23, 379:1, 379:6, 386:19, 387:6, 387:9, 387:12, 387:25, 391:25, 419:5, 419:11, 419:22,</p>	<p>420:10, 420:14, 420:18, 421:3, 421:8, 421:10, 421:14, 421:17, 421:24, 422:22, 423:11, 423:18, 423:22, 424:2, 424:6, 424:9, 424:21, 429:3, 445:15, 445:20, 446:2, 447:11, 447:22, 448:15, 449:2, 449:5, 449:11, 450:9, 450:12, 451:19, 452:6, 452:22, 453:2, 453:4, 453:6, 453:15, 453:21, 454:9, 455:8, 455:11, 455:16, 456:3, 457:1, 457:22, 458:4, 458:8, 458:15, 459:5, 459:19, 459:25, 460:8, 460:11, 460:15, 460:20, 461:11, 461:18, 461:21, 462:10, 463:1, 463:3, 463:5, 463:10, 463:17, 463:20, 464:1, 464:6, 464:25, 466:9, 466:21, 467:8, 467:20, 467:24, 468:4, 481:24, 511:15, 511:21, 511:24, 512:8, 512:12, 512:19, 512:25, 513:4, 513:6, 513:25, 514:4, 514:7, 538:3, 561:12, 561:14, 561:17, 562:5, 562:11, 562:15, 562:25, 563:2, 563:6, 563:24, 564:10, 564:14, 564:23, 565:7, 566:13, 566:17, 566:20, 566:22, 567:1, 567:5, 568:6, 568:8, 568:11, 568:18, 568:20, 570:6, 571:12, 574:11, 574:14, 574:17, 578:8, 579:20, 579:24, 580:2, 580:5, 580:8, 580:11, 582:4,</p>	<p>582:7, 582:13, 592:7, 593:1, 593:20, 594:7, 595:11, 596:5, 597:21, 598:7, 598:12, 598:19, 598:23, 599:5, 599:24, 600:4, 600:8, 600:19, 600:23, 601:5, 601:24, 602:2, 602:7, 602:12, 602:15, 603:13, 612:4, 612:7, 612:13, 612:19, 612:23, 613:3, 614:2, 618:10, 618:22, 620:18, 638:8, 638:11, 638:24, 639:13</p> <p><b>themselves</b> <sup>[3]</sup> - 434:7, 628:16, 631:25</p> <p><b>theoretical</b> <sup>[2]</sup> - 529:11, 534:2</p> <p><b>theorizing</b> <sup>[1]</sup> - 491:11</p> <p><b>theory</b> <sup>[2]</sup> - 351:24, 491:8</p> <p><b>Theory</b> <sup>[1]</sup> - 347:10</p> <p><b>thereabouts</b> <sup>[1]</sup> - 575:6</p> <p><b>thereafter</b> <sup>[1]</sup> - 530:10</p> <p><b>thereby</b> <sup>[1]</sup> - 489:2</p> <p><b>therefore</b> <sup>[6]</sup> - 352:7, 352:8, 387:22, 518:7, 618:3, 618:4</p> <p><b>thereof</b> <sup>[2]</sup> - 354:6, 585:13</p> <p><b>they've</b> <sup>[8]</sup> - 385:19, 395:11, 395:13, 426:9, 443:9, 444:2, 524:14, 610:10</p> <p><b>thick</b> <sup>[1]</sup> - 552:1</p> <p><b>thickness</b> <sup>[2]</sup> - 557:23, 567:21</p> <p><b>thinking</b> <sup>[9]</sup> - 449:7, 513:23, 577:14, 581:1, 585:6, 588:4, 592:18, 615:22, 625:2</p> <p><b>thinks</b> <sup>[1]</sup> - 537:5</p> <p><b>third</b> <sup>[7]</sup> - 387:15, 415:13, 443:24, 583:17, 594:24, 601:7, 615:2</p> <p><b>Third</b> <sup>[2]</sup> - 345:20, 348:19</p> <p><b>third-party</b> <sup>[1]</sup> - 594:24</p> <p><b>thirds</b> <sup>[1]</sup> - 534:6</p>	<p><b>Thirty</b> <sup>[1]</sup> - 341:3</p> <p><b>thorn</b> <sup>[1]</sup> - 467:2</p> <p><b>Thorstad</b> <sup>[2]</sup> - 343:10, 635:2</p> <p><b>thoughtfully</b> <sup>[1]</sup> - 384:3</p> <p><b>thoughts</b> <sup>[1]</sup> - 467:16</p> <p><b>thousands</b> <sup>[1]</sup> - 454:5</p> <p><b>threat</b> <sup>[1]</sup> - 622:24</p> <p><b>threatened</b> <sup>[1]</sup> - 451:25</p> <p><b>three</b> <sup>[33]</sup> - 399:16, 409:4, 409:21, 412:2, 412:6, 415:9, 415:11, 427:15, 448:21, 459:24, 461:9, 496:17, 497:21, 498:16, 520:22, 559:23, 569:16, 574:21, 574:22, 577:16, 583:18, 584:21, 599:1, 600:5, 606:16, 606:22, 611:10, 614:4, 614:7, 614:8, 622:16, 630:23, 637:23</p> <p><b>three-fourths</b> <sup>[1]</sup> - 399:16</p> <p><b>threshold</b> <sup>[1]</sup> - 376:10</p> <p><b>Thresholds</b> <sup>[1]</sup> - 346:20</p> <p><b>thrilled</b> <sup>[1]</sup> - 641:25</p> <p><b>throughout</b> <sup>[7]</sup> - 449:21, 474:16, 485:10, 519:10, 526:19, 544:16, 613:9</p> <p><b>Throw</b> <sup>[1]</sup> - 348:10</p> <p><b>throw</b> <sup>[23]</sup> - 525:16, 526:11, 526:22, 532:15, 532:17, 533:16, 534:16, 538:8, 540:20, 540:22, 545:4, 551:20, 553:21, 553:24, 563:20, 568:15, 568:16, 568:19, 568:22, 573:18, 573:23, 574:23</p> <p><b>throw's</b> <sup>[1]</sup> - 563:22</p> <p><b>throwing</b> <sup>[1]</sup> - 563:17</p> <p><b>thrown</b> <sup>[3]</sup> - 517:20, 534:13, 567:18</p> <p><b>throws</b> <sup>[9]</sup> - 529:9, 529:16, 529:20, 529:21, 529:22, 530:2, 533:25,</p>	<p>537:21, 537:24 45</p> <p><b>thunder</b> <sup>[1]</sup> - 599:20</p> <p><b>tie</b> <sup>[1]</sup> - 527:11</p> <p><b>tie-off</b> <sup>[1]</sup> - 527:11</p> <p><b>tier</b> <sup>[2]</sup> - 441:1, 456:7</p> <p><b>tiering</b> <sup>[1]</sup> - 432:15</p> <p><b>tightly</b> <sup>[2]</sup> - 575:9, 575:12</p> <p><b>timing</b> <sup>[1]</sup> - 384:9</p> <p><b>tiny</b> <sup>[2]</sup> - 448:14, 457:14</p> <p><b>tip</b> <sup>[4]</sup> - 534:10, 534:15, 560:16, 568:4</p> <p><b>tired</b> <sup>[2]</sup> - 561:15, 587:16</p> <p><b>title</b> <sup>[1]</sup> - 533:15</p> <p><b>tobacco</b> <sup>[1]</sup> - 372:10</p> <p><b>today</b> <sup>[24]</sup> - 356:2, 356:5, 360:9, 360:11, 376:12, 381:20, 419:2, 419:5, 441:12, 443:22, 476:5, 487:21, 535:7, 544:16, 556:22, 570:5, 570:13, 570:23, 592:24, 594:5, 600:2, 614:1, 614:14, 639:8</p> <p><b>toes</b> <sup>[1]</sup> - 382:6</p> <p><b>together</b> <sup>[11]</sup> - 382:14, 398:7, 492:15, 501:5, 501:8, 501:12, 537:23, 585:16, 597:1, 641:16, 641:17</p> <p><b>tomorrow</b> <sup>[2]</sup> - 642:9, 642:15</p> <p><b>ton</b> <sup>[1]</sup> - 534:12</p> <p><b>tongue</b> <sup>[2]</sup> - 575:12, 575:17</p> <p><b>took</b> <sup>[7]</sup> - 494:22, 496:16, 496:17, 502:20, 573:23, 627:19, 643:9</p> <p><b>tool</b> <sup>[2]</sup> - 519:6, 551:12</p> <p><b>tools</b> <sup>[1]</sup> - 495:7</p> <p><b>top</b> <sup>[10]</sup> - 452:12, 523:15, 539:21, 562:23, 562:25, 584:22, 585:5, 589:15, 609:3, 609:4</p> <p><b>topic</b> <sup>[2]</sup> - 477:9, 488:21</p> <p><b>topics</b> <sup>[4]</sup> - 474:15, 498:4, 523:13, 527:5</p> <p><b>topographic</b> <sup>[1]</sup> - 578:13</p>
--	--	--	--	---

<b>topographical</b> [2] - 394:20, 595:13 <b>topography</b> [2] - 508:2, 578:15 <b>tossed</b> [1] - 416:15 <b>total</b> [4] - 409:3, 448:12, 448:13, 456:21 <b>totally</b> [2] - 577:14, 637:25 <b>touch</b> [2] - 422:13, 448:6 <b>touched</b> [1] - 454:13 <b>touting</b> [1] - 544:10 <b>toward</b> [2] - 364:3, 365:6 <b>towards</b> [4] - 472:18, 509:25, 531:11, 578:5 <b>tower</b> [17] - 426:14, 468:3, 489:25, 490:1, 490:3, 490:4, 490:5, 490:6, 490:7, 490:8, 490:10, 547:24, 591:14, 628:12, 628:13, 628:17, 628:21 <b>towers</b> [18] - 422:25, 423:1, 426:2, 426:3, 426:17, 456:24, 547:25, 548:20, 548:21, 548:22, 573:8, 573:10, 573:13, 592:6, 616:14, 617:11 <b>town</b> [9] - 394:8, 396:25, 404:9, 406:10, 415:8, 416:9, 416:23, 423:4, 424:14 <b>towns</b> [1] - 614:23 <b>township</b> [1] - 584:17 <b>Township</b> [1] - 348:4 <b>toxic</b> [1] - 373:16 <b>track</b> [1] - 535:4 <b>tracking</b> [2] - 445:5, 598:18 <b>tractor</b> [1] - 597:7 <b>trade</b> [1] - 606:18 <b>tradition</b> [1] - 593:13 <b>traditional</b> [3] - 443:19, 444:3, 580:14 <b>traditionally</b> [1] - 397:13 <b>traffic</b> [4] - 488:11, 496:15, 505:6 <b>training</b> [3] - 529:23, 538:21, 572:25 <b>transcript</b> [3] - 350:1,	366:3, 366:6 <b>Transcript</b> [1] - 332:6 <b>transcription</b> [1] - 643:12 <b>transfer</b> [1] - 400:7 <b>transmission</b> [9] - 394:22, 414:13, 415:6, 417:14, 417:15, 463:4, 463:7, 469:16, 552:18 <b>transmissions</b> [1] - 444:17 <b>transparency</b> [1] - 629:8 <b>trapped</b> [1] - 581:8 <b>traveling</b> [2] - 419:2, 621:23 <b>treat</b> [1] - 443:13 <b>treated</b> [1] - 352:18 <b>treating</b> [1] - 375:9 <b>treatment</b> [1] - 352:9 <b>trees</b> [2] - 396:2, 615:3 <b>trespass</b> [1] - 461:17 <b>tribal</b> [1] - 444:6 <b>Tribe</b> [2] - 443:23, 444:14 <b>tribe</b> [2] - 444:8, 444:15 <b>tried</b> [3] - 394:7, 508:15, 578:15 <b>triers</b> [1] - 355:22 <b>trigger</b> [2] - 542:11, 542:21 <b>Tripp</b> [2] - 433:19, 614:4 <b>trouble</b> [7] - 445:23, 481:23, 575:5, 575:6, 594:2, 623:12, 633:10 <b>troubling</b> [1] - 446:24 <b>true</b> [12] - 363:22, 379:25, 446:2, 453:12, 453:19, 488:14, 494:13, 494:14, 537:13, 545:13, 637:25, 643:11 <b>truly</b> [1] - 625:10 <b>trust</b> [1] - 592:13 <b>truth</b> [2] - 593:15, 621:13 <b>try</b> [15] - 362:19, 366:21, 434:1, 442:5, 511:13, 536:22, 536:24, 549:21, 562:18, 575:14, 615:25, 619:1, 623:12, 628:1, 628:16	<b>trying</b> [30] - 395:11, 419:24, 426:19, 427:3, 450:24, 454:7, 454:10, 497:1, 507:7, 547:16, 553:2, 560:6, 562:20, 568:3, 573:23, 575:16, 592:21, 592:25, 597:14, 607:22, 607:23, 617:19, 619:23, 624:6, 628:9, 628:12, 630:9, 635:17, 638:6 <b>tubes</b> [1] - 558:20 <b>Tuesday</b> [1] - 631:16 <b>tune</b> [3] - 385:11, 385:16, 385:25 <b>tuned</b> [2] - 385:19, 385:22 <b>tuning</b> [2] - 385:15, 386:2 <b>Turbine</b> [18] - 340:24, 341:12, 341:22, 342:6, 342:15, 343:9, 346:17, 346:18, 346:23, 347:12, 347:15, 348:3, 348:7, 349:6, 407:17, 407:22, 603:16, 603:19 <b>turbine</b> [161] - 358:20, 359:3, 359:5, 359:7, 359:21, 360:4, 364:4, 370:3, 370:6, 372:10, 372:16, 380:18, 394:16, 400:10, 407:20, 408:10, 408:13, 408:15, 408:17, 409:7, 439:15, 444:23, 474:10, 484:16, 485:19, 486:25, 487:1, 487:5, 488:25, 489:21, 491:20, 491:22, 492:11, 492:18, 499:7, 501:21, 509:14, 510:17, 510:21, 510:23, 513:10, 524:19, 524:23, 524:25, 525:2, 525:14, 525:23, 526:4, 526:13, 527:8, 527:10, 527:16, 527:21, 529:22, 530:1, 530:4, 530:11,	530:16, 532:1, 533:1, 534:16, 535:4, 535:14, 535:19, 536:15, 536:18, 536:21, 537:14, 537:18, 538:11, 538:25, 539:9, 539:17, 539:22, 540:3, 541:10, 541:11, 541:20, 541:21, 541:22, 541:25, 542:3, 542:4, 542:5, 542:17, 543:1, 543:12, 543:13, 543:17, 543:20, 543:21, 543:23, 543:24, 544:3, 544:24, 545:6, 545:9, 545:20, 545:25, 546:1, 546:3, 546:6, 546:13, 546:15, 546:16, 546:18, 546:22, 546:25, 547:3, 547:9, 550:14, 550:20, 551:4, 551:11, 552:25, 553:1, 554:3, 555:4, 555:6, 555:7, 555:8, 555:11, 555:18, 556:15, 556:17, 556:18, 556:20, 557:3, 557:4, 557:7, 557:8, 557:10, 557:14, 558:1, 558:4, 558:5, 558:8, 558:10, 558:22, 559:11, 560:4, 560:8, 560:15, 560:16, 561:3, 561:4, 567:5, 567:14, 567:17, 567:24, 569:1, 576:16, 577:2, 584:15, 584:16, 584:22, 598:5, 600:2 <b>turbine's</b> [9] - 359:10, 510:24, 539:14, 542:13, 543:5, 543:8, 546:21, 547:2, 557:17 <b>Turbines</b> [16] - 340:9, 341:9, 341:19, 341:24, 342:11, 342:20, 344:5, 344:9, 344:12, 344:16, 344:20, 347:16, 347:17, 347:23, 349:3, 349:7	<b>turbines</b> [152] - 46 352:24, 352:25, 354:16, 355:4, 356:22, 356:25, 357:8, 358:5, 358:8, 358:25, 359:14, 363:7, 365:8, 367:1, 369:5, 369:15, 369:16, 369:18, 369:21, 370:7, 371:5, 372:6, 374:1, 376:12, 381:24, 395:23, 399:11, 405:11, 408:21, 408:23, 409:1, 409:3, 409:10, 409:11, 409:20, 409:25, 410:2, 410:3, 414:8, 432:8, 444:21, 457:9, 458:12, 458:14, 458:18, 461:6, 462:20, 463:11, 474:9, 477:10, 485:2, 486:13, 487:3, 487:25, 488:3, 488:4, 488:22, 489:11, 490:20, 492:8, 492:13, 493:9, 493:12, 505:23, 508:16, 510:9, 510:13, 511:2, 511:5, 511:6, 513:13, 515:1, 515:18, 520:9, 521:2, 525:15, 530:8, 530:13, 530:15, 530:24, 531:20, 531:24, 532:3, 532:10, 533:17, 534:1, 534:14, 534:18, 534:19, 534:23, 534:25, 535:21, 536:8, 536:11, 536:21, 537:6, 537:20, 537:23, 538:25, 539:1, 540:1, 540:5, 544:11, 544:12, 545:11, 547:20, 547:22, 548:8, 548:9, 548:25, 551:2, 551:15, 552:13, 562:7, 562:14, 564:4, 564:18, 568:16, 572:23, 573:3, 577:12, 577:24, 579:6, 582:1, 584:7,
---	---	---	--	--

<p>584:18, 584:21, 584:24, 585:1, 585:4, 588:19, 589:13, 593:18, 597:16, 599:9, 614:7, 614:16, 616:24, 617:3, 617:4, 618:19, 619:18, 619:19, 622:16, 623:3, 633:13, 636:18</p> <p><b>turn</b> [25] - 358:10, 360:16, 367:8, 370:7, 407:14, 410:16, 412:18, 413:21, 447:1, 450:17, 509:20, 509:24, 514:25, 525:18, 527:21, 533:5, 583:4, 585:8, 599:3, 602:10, 602:17, 603:1, 604:4, 604:21</p> <p><b>turned</b> [6] - 372:4, 441:17, 441:18, 442:9, 499:24, 509:18</p> <p><b>turning</b> [10] - 440:19, 528:11, 539:15, 539:23, 540:9, 546:4, 558:10, 563:12, 567:23</p> <p><b>twice</b> [2] - 466:19, 622:7</p> <p><b>twisted</b> [1] - 454:17</p> <p><b>two</b> [76] - 351:5, 370:20, 386:20, 393:16, 394:1, 399:19, 402:8, 402:9, 402:13, 402:24, 411:21, 412:2, 412:6, 421:25, 423:23, 424:15, 432:7, 438:12, 442:10, 442:12, 448:10, 454:3, 454:4, 458:5, 459:1, 459:22, 464:15, 464:20, 465:4, 465:14, 468:7, 470:2, 470:3, 474:9, 485:4, 487:24, 495:8, 496:2, 501:12, 508:9, 513:12, 514:12, 517:4, 520:22, 521:12, 522:6, 527:5, 530:24, 534:6, 537:3, 542:9,</p>	<p>542:17, 551:7, 558:13, 572:18, 575:3, 577:12, 579:21, 585:16, 586:8, 588:19, 590:25, 591:1, 597:1, 597:25, 600:4, 611:10, 613:9, 626:15, 629:21, 630:23, 631:21, 636:24</p> <p><b>two-mile</b> [1] - 459:1</p> <p><b>two-thirds</b> [1] - 534:6</p> <p><b>type</b> [11] - 402:22, 440:10, 440:12, 462:6, 478:20, 483:21, 490:17, 505:8, 506:3, 514:17, 611:16</p> <p><b>types</b> [5] - 389:12, 450:3, 451:13, 493:19, 516:10</p> <p><b>typical</b> [3] - 488:6, 497:13, 500:5</p> <p><b>typically</b> [6] - 385:15, 450:20, 456:8, 470:14, 487:13, 515:15</p>	<p><b>underneath</b> [4] - 410:19, 449:8, 498:17, 530:1</p> <p><b>understood</b> [6] - 369:22, 388:18, 459:23, 468:1, 568:2</p> <p><b>undertake</b> [1] - 464:15</p> <p><b>undue</b> [1] - 537:11</p> <p><b>unevaluated</b> [2] - 443:9, 443:10</p> <p><b>uneven</b> [4] - 542:7, 542:12, 542:19, 543:12</p> <p><b>unfortunately</b> [3] - 437:17, 457:10, 533:11</p> <p><b>unique</b> [10] - 448:3, 448:6, 449:18, 450:2, 450:6, 451:6, 451:8, 457:12, 462:5, 581:25</p> <p><b>United</b> [1] - 534:20</p> <p><b>university</b> [4] - 561:24, 562:1, 562:3</p> <p><b>University</b> [7] - 342:18, 344:14, 344:18, 344:21, 561:22, 571:25, 572:4</p> <p><b>unknown</b> [1] - 361:4</p> <p><b>unleased</b> [2] - 435:5, 436:23</p> <p><b>unlike</b> [2] - 576:20, 581:17</p> <p><b>unlikely</b> [4] - 352:12, 360:9, 390:18</p> <p><b>unload</b> [1] - 539:18</p> <p><b>unnumbered</b> [1] - 408:10</p> <p><b>unrelated</b> [1] - 388:16</p> <p><b>unsteady</b> [1] - 575:2</p> <p><b>unusual</b> [1] - 453:18</p> <p><b>up</b> [169] - 351:7, 361:3, 365:10, 365:14, 367:9, 373:11, 379:20, 380:15, 382:15, 384:13, 384:20, 385:9, 385:19, 385:25, 394:21, 394:24, 395:5, 397:16, 399:15, 400:16, 402:8, 402:15, 405:21, 407:14, 407:23, 408:10, 409:7, 410:3, 410:14, 410:24, 411:17, 411:18, 411:20, 413:14, 413:16, 413:17,</p>	<p>414:2, 414:7, 414:9, 414:11, 417:1, 418:15, 420:13, 421:5, 422:7, 428:15, 429:24, 433:12, 434:13, 435:11, 435:14, 436:2, 437:5, 437:6, 440:1, 441:17, 441:18, 442:9, 445:25, 446:14, 454:12, 472:15, 473:8, 473:9, 481:13, 482:1, 485:21, 485:25, 486:1, 486:8, 490:24, 492:18, 495:14, 496:21, 497:17, 502:2, 505:21, 510:4, 515:3, 515:22, 516:21, 519:14, 520:5, 524:21, 534:16, 535:9, 536:17, 539:1, 543:1, 543:21, 544:2, 544:11, 545:19, 545:20, 545:21, 546:6, 546:16, 546:21, 547:3, 547:9, 548:20, 549:19, 551:25, 552:13, 552:20, 553:1, 553:2, 556:24, 557:8, 557:10, 558:16, 563:12, 563:16, 568:22, 569:1, 570:22, 572:14, 573:18, 573:23, 574:23, 575:8, 575:9, 575:11, 576:5, 577:6, 578:16, 578:20, 583:6, 583:10, 588:22, 590:6, 592:6, 594:11, 596:8, 596:9, 596:11, 596:12, 597:3, 597:5, 597:9, 597:12, 597:19, 597:22, 597:24, 598:3, 601:6, 602:23, 603:10, 608:1, 609:3, 613:5, 614:23, 616:16, 616:18, 623:2, 623:21, 624:24, 625:2, 627:17, 628:13, 629:17,</p>	<p>630:18, 630:24, 4 7 639:3, 641:9, 642:9</p> <p><b>Up</b> [1] - 348:12</p> <p><b>update</b> [2] - 422:15, 474:7</p> <p><b>Update</b> [1] - 340:25</p> <p><b>Updated</b> [5] - 340:5, 340:6, 343:13, 343:14, 346:9</p> <p><b>updated</b> [3] - 470:25, 476:1, 585:25</p> <p><b>updates</b> [3] - 431:9, 432:17, 473:25</p> <p><b>upper</b> [1] - 440:22</p> <p><b>Upper</b> [1] - 471:25</p> <p><b>ups</b> [2] - 587:25, 606:20</p> <p><b>upset</b> [1] - 397:23</p> <p><b>Urbana</b> [1] - 572:4</p> <p><b>uses</b> [1] - 512:2</p> <p><b>USFWS</b> [1] - 464:18</p> <p><b>Utica</b> [1] - 469:15</p> <p><b>UTILITIES</b> [2] - 332:1, 332:9</p> <p><b>Utilities</b> [4] - 423:14, 638:17, 638:21, 639:10</p> <p><b>utilize</b> [2] - 555:19, 556:4</p> <p><b>utilized</b> [3] - 432:1, 532:19, 556:2</p>
	<p><b>U</b></p>			<p><b>V</b></p>
	<p><b>U.S</b> [4] - 438:10, 450:21, 468:12, 468:21</p> <p><b>ugly</b> [1] - 423:3</p> <p><b>ultimately</b> [2] - 352:17, 448:2</p> <p><b>ultra</b> [1] - 502:25</p> <p><b>Ultrasound</b> [1] - 342:17</p> <p><b>Umwelt</b> [1] - 341:20</p> <p><b>uncertainty</b> [1] - 505:19</p> <p><b>uncle</b> [1] - 407:11</p> <p><b>unclear</b> [1] - 483:5</p> <p><b>uncomfortable</b> [1] - 457:15</p> <p><b>uncommon</b> [1] - 575:8</p> <p><b>under</b> [22] - 351:10, 360:3, 369:10, 392:13, 429:10, 440:22, 448:16, 456:7, 456:19, 472:24, 476:25, 497:23, 515:5, 522:3, 530:19, 540:7, 563:11, 571:3, 595:24, 613:17, 619:14, 641:21</p>			<p><b>vague</b> [2] - 415:5, 537:25</p> <p><b>valid</b> [2] - 403:4, 506:1</p> <p><b>valley</b> [4] - 394:19, 414:15, 578:24, 581:4</p> <p><b>value</b> [12] - 482:16, 496:9, 496:23, 498:24, 499:5, 499:7, 499:25, 514:23, 515:12, 517:3, 518:4, 620:6</p> <p><b>values</b> [9] - 510:8, 515:3, 516:12, 517:9, 517:10, 517:20, 517:21, 518:6, 518:7</p> <p><b>Values</b> [3] - 344:13, 344:16, 344:20</p> <p><b>van</b> [2] - 342:3, 342:4</p> <p><b>varied</b> [2] - 490:19, 519:25</p> <p><b>varies</b> [2] - 459:19, 481:12</p> <p><b>various</b> [4] - 417:18, 483:2, 486:5, 587:7</p>



<p><b>vast</b> [1] - 497:23</p> <p><b>vehicle</b> [1] - 599:19</p> <p><b>vein</b> [1] - 439:14</p> <p><b>velocity</b> [3] - 457:21, 562:20, 568:4</p> <p><b>vendor</b> [2] - 486:4, 512:16</p> <p><b>verbal</b> [1] - 357:22</p> <p><b>verbatim</b> [1] - 617:18</p> <p><b>verification</b> [3] - 512:5, 512:7, 512:9</p> <p><b>verify</b> [2] - 492:7, 590:8</p> <p><b>Vermillion</b> [1] - 598:12</p> <p><b>version</b> [1] - 456:14</p> <p><b>versus</b> [8] - 487:23, 489:6, 490:22, 506:19, 514:16, 530:22, 545:18, 567:22</p> <p><b>vertical</b> [2] - 381:11, 381:15</p> <p><b>vertigo</b> [7] - 371:16, 371:20, 371:21, 371:25, 574:2, 574:18</p> <p><b>veterans</b> [1] - 376:3</p> <p><b>viability</b> [1] - 439:10</p> <p><b>vibrating</b> [11] - 541:5, 541:7, 541:17, 541:18, 542:24, 543:2, 543:5, 543:9, 544:24, 544:25, 545:3</p> <p><b>vibration</b> [16] - 525:3, 539:3, 541:23, 542:5, 542:6, 542:11, 542:20, 542:21, 544:1, 544:6, 544:20, 550:15, 551:4, 565:3, 568:14, 605:22</p> <p><b>vibrations</b> [3] - 543:13, 543:15, 605:19</p> <p><b>Vibrotactile</b> [1] - 346:19</p> <p><b>Vice</b> [2] - 388:2, 418:25</p> <p><b>VICE</b> [1] - 332:10</p> <p><b>vicinity</b> [3] - 394:3, 569:1, 598:11</p> <p><b>VICKI</b> [1] - 338:20</p> <p><b>Vicki</b> [6] - 347:17, 347:18, 347:20, 347:20, 347:21, 347:21</p> <p><b>Video</b> [6] - 347:19, 347:20, 347:20,</p>	<p>347:21, 347:21, 348:3</p> <p><b>videos</b> [1] - 347:18</p> <p><b>view</b> [1] - 585:1</p> <p><b>View</b> [4] - 347:17, 347:22, 348:5, 348:8</p> <p><b>views</b> [2] - 368:15, 434:12</p> <p><b>visibly</b> [1] - 508:11</p> <p><b>Visit</b> [2] - 349:9, 349:10</p> <p><b>visit</b> [2] - 571:6, 571:7</p> <p><b>visited</b> [1] - 444:6</p> <p><b>Vitae</b> [2] - 343:11, 347:14</p> <p><b>vocalization</b> [1] - 427:22</p> <p><b>voice</b> [3] - 385:16, 477:15, 594:20</p> <p><b>Vol</b> [1] - 342:24</p> <p><b>voltages</b> [1] - 546:8</p> <p><b>Volume</b> [1] - 332:8</p> <p><b>volumes</b> [1] - 402:22</p> <p><b>vote</b> [4] - 627:3, 627:9, 627:17, 627:24</p> <p><b>voted</b> [3] - 632:14, 632:15, 632:25</p> <p><b>votes</b> [2] - 627:21, 627:22</p> <p><b>Vyn</b> [1] - 344:15</p>	<p>544:12, 575:1, 607:13</p> <p><b>watcher</b> [1] - 445:16</p> <p><b>watching</b> [3] - 546:9, 546:10</p> <p><b>water</b> [4] - 404:12, 449:10, 449:13, 576:13</p> <p><b>watt</b> [1] - 535:24</p> <p><b>waves</b> [3] - 376:5, 384:12, 384:13</p> <p><b>ways</b> [2] - 515:11, 588:9</p> <p><b>wear</b> [2] - 599:6, 607:12</p> <p><b>weather</b> [12] - 420:13, 441:12, 443:22, 453:10, 453:20, 487:11, 530:9, 530:17, 530:22, 548:18, 564:12, 567:6</p> <p><b>web</b> [1] - 406:17</p> <p><b>week</b> [3] - 377:1, 416:25, 471:2</p> <p><b>weekend</b> [1] - 607:11</p> <p><b>weekly</b> [1] - 535:15</p> <p><b>weeks</b> [5] - 459:21, 459:24, 461:8, 574:25, 628:14</p> <p><b>weigh</b> [1] - 467:14</p> <p><b>weighing</b> [1] - 538:11</p> <p><b>weight</b> [4] - 539:6, 542:10, 551:20, 563:15</p> <p><b>weighted</b> [2] - 517:2, 522:25</p> <p><b>weighting</b> [3] - 516:17, 517:22</p> <p><b>weightings</b> [2] - 516:16, 516:20</p> <p><b>weights</b> [1] - 534:12</p> <p><b>welcome</b> [4] - 376:24, 429:3, 602:16, 634:25</p> <p><b>well-being</b> [1] - 369:19</p> <p><b>west</b> [10] - 408:9, 449:12, 468:15, 600:12, 603:16, 603:19, 619:19, 622:13, 636:22, 636:24</p> <p><b>West</b> [3] - 440:8, 440:12, 571:20</p> <p><b>western</b> [1] - 578:21</p> <p><b>wet</b> [1] - 524:21</p> <p><b>wetland</b> [1] - 447:15</p> <p><b>wetlands</b> [3] - 409:16, 447:16, 448:10</p>	<p><b>whack</b> [1] - 539:24</p> <p><b>whatnot</b> [2] - 398:8, 628:2</p> <p><b>wheel</b> [1] - 382:13</p> <p><b>whereby</b> [1] - 432:7</p> <p><b>white</b> [7] - 403:19, 552:23, 577:22, 577:25, 584:8, 584:15</p> <p><b>WHO</b> [1] - 348:21</p> <p><b>whole</b> [13] - 398:9, 402:21, 415:18, 500:6, 500:9, 524:3, 524:15, 572:19, 577:13, 578:6, 580:21, 600:19</p> <p><b>whooping</b> [37] - 431:24, 432:2, 432:7, 438:6, 446:19, 447:5, 448:3, 449:22, 450:5, 452:19, 452:21, 453:1, 453:25, 454:3, 457:18, 457:20, 457:23, 458:22, 458:23, 459:14, 461:24, 462:1, 462:17, 462:24, 463:12, 463:24, 464:11, 464:24, 465:5, 465:10, 467:14, 467:17, 468:2, 468:11, 472:1, 642:3</p> <p><b>whoosh</b> [11] - 489:22, 489:24, 490:2, 490:5, 490:9, 490:18, 492:9, 492:12, 492:14, 492:17, 492:19</p> <p><b>WI</b> [2] - 341:8, 341:9</p> <p><b>wide</b> [1] - 381:8</p> <p><b>width</b> [3] - 559:4, 559:9</p> <p><b>wife</b> [7] - 393:16, 400:16, 418:14, 573:23, 587:19, 587:21, 588:2</p> <p><b>wife's</b> [1] - 592:14</p> <p><b>Wildlife</b> [5] - 438:10, 450:13, 450:21, 468:13, 468:22</p> <p><b>wildlife</b> [4] - 430:8, 451:25, 459:15, 622:5</p> <p><b>Williams</b> [1] - 346:14</p> <p><b>willing</b> [1] - 461:6</p> <p><b>win</b> [4] - 394:9, 398:9</p> <p><b>win-win</b> [2] - 394:9,</p>	<p>398:9</p> <p><b>Wind</b> [83] - 332:15, 340:9, 340:13, 340:16, 340:19, 340:23, 340:24, 340:24, 340:25, 341:4, 341:9, 341:11, 341:19, 341:22, 341:24, 342:6, 342:8, 342:11, 342:15, 342:20, 343:13, 344:4, 344:8, 344:12, 344:16, 344:19, 346:16, 346:18, 346:23, 347:8, 347:9, 347:11, 347:12, 347:13, 347:15, 347:16, 348:12, 349:3, 349:5, 349:5, 349:17, 351:3, 368:1, 392:25, 394:24, 401:15, 402:17, 425:6, 429:21, 438:15, 438:18, 438:24, 439:1, 439:4, 439:9, 441:2, 444:17, 471:25, 508:4, 508:8, 521:22, 524:11, 524:24, 525:9, 526:24, 527:22, 577:10, 578:21, 614:5, 614:16, 616:16, 616:22, 620:11, 620:16, 620:20, 621:6, 635:6, 635:8, 635:13, 635:15, 635:25, 636:6</p> <p><b>WIND</b> [3] - 332:3, 332:3, 332:5</p> <p><b>wind</b> [171] - 351:4, 352:24, 352:25, 353:10, 354:2, 354:15, 355:3, 355:9, 355:13, 355:20, 356:21, 356:25, 357:7, 357:18, 359:21, 360:4, 363:7, 363:10, 365:6, 365:8, 366:25, 367:14, 369:4, 369:15, 369:21, 370:3, 370:6, 370:21, 371:5, 372:6, 372:9, 372:15, 374:1, 376:12, 380:18,</p>
--	---	--	--	--

380:20, 381:24, 382:16, 394:11, 395:23, 397:17, 399:11, 401:19, 402:12, 405:11, 415:8, 428:18, 430:7, 430:11, 430:14, 439:15, 440:23, 456:24, 457:9, 461:14, 461:19, 461:23, 462:22, 463:1, 463:11, 463:13, 463:14, 463:21, 464:8, 468:3, 473:7, 477:10, 487:25, 488:1, 488:13, 488:15, 488:16, 488:22, 488:25, 489:2, 489:10, 489:13, 489:21, 490:20, 491:20, 491:21, 491:24, 492:6, 492:22, 493:7, 493:9, 493:11, 499:6, 500:4, 501:21, 505:23, 507:22, 508:4, 513:9, 513:14, 513:19, 516:13, 520:24, 522:24, 525:22, 526:3, 527:8, 527:21, 533:17, 534:1, 534:14, 535:2, 535:8, 535:9, 536:12, 538:11, 538:25, 539:14, 539:21, 540:9, 540:13, 541:19, 543:19, 543:22, 545:8, 545:16, 546:3, 546:24, 546:25, 548:18, 550:25, 552:5, 552:15, 552:19, 552:25, 553:4, 553:8, 555:23, 558:9, 558:12, 558:20, 558:21, 562:11, 564:4, 567:22, 572:23, 573:3, 573:8, 573:10, 573:13, 575:20, 576:16, 576:23, 577:24, 578:3, 581:2, 584:6, 589:13, 599:9, 599:23, 600:1, 614:9, 616:13, 616:24, 618:19,	621:9, 622:25, 625:8, 640:9, 640:11 <b>wind's</b> [2] - 539:22, 539:25 <b>Wind's</b> [1] - 351:6 <b>windmill</b> [2] - 622:1, 622:3 <b>window</b> [1] - 617:6 <b>windows</b> [2] - 397:1, 401:4 <b>Windpower</b> [1] - 346:20 <b>Winds</b> [29] - 392:8, 399:6, 409:18, 410:8, 410:12, 411:5, 411:10, 421:5, 429:5, 438:19, 438:25, 555:15, 562:12, 577:1, 589:24, 591:9, 591:11, 591:19, 610:8, 617:25, 618:6, 618:13, 621:2, 623:21, 630:18, 631:19, 632:12, 633:21, 635:15 <b>windy</b> [1] - 540:11 <b>winter</b> [4] - 453:9, 499:17, 500:2, 617:9 <b>wire</b> [2] - 552:1, 564:17 <b>wires</b> [2] - 576:5, 588:25 <b>Wis</b> [1] - 349:4 <b>Wisconsin</b> [4] - 340:24, 367:14, 367:17, 368:1 <b>Wish</b> [2] - 596:20, 598:9 <b>withdraw</b> [1] - 623:23 <b>withdrawn</b> [1] - 550:6 <b>withdrew</b> [2] - 571:19, 641:9 <b>WITNESS</b> [196] - 335:18, 336:2, 337:2, 339:2, 339:9, 375:7, 375:11, 375:18, 376:9, 376:15, 376:18, 377:2, 377:8, 377:14, 377:16, 377:21, 378:2, 378:7, 378:11, 378:16, 378:23, 379:1, 379:6, 386:19, 387:6, 387:9, 387:12, 387:25, 391:25, 419:5, 419:11,	419:22, 420:10, 420:14, 420:18, 421:3, 421:8, 421:10, 421:14, 421:17, 421:24, 422:22, 423:11, 423:18, 423:22, 424:2, 424:6, 424:9, 424:21, 429:3, 445:15, 445:20, 446:2, 447:11, 447:22, 448:15, 449:2, 449:5, 449:11, 450:9, 450:12, 451:19, 452:6, 452:22, 453:2, 453:4, 453:6, 453:15, 453:21, 454:9, 455:8, 455:11, 455:16, 456:3, 457:1, 457:22, 458:4, 458:8, 458:15, 459:5, 459:19, 459:25, 460:8, 460:11, 460:15, 460:20, 461:11, 461:18, 461:21, 462:10, 463:1, 463:3, 463:5, 463:10, 463:17, 463:20, 464:1, 464:6, 464:25, 466:9, 466:21, 467:8, 467:20, 467:24, 468:4, 481:24, 511:15, 511:21, 511:24, 512:8, 512:12, 512:19, 512:25, 513:4, 513:6, 513:25, 514:4, 514:7, 561:12, 561:14, 561:17, 562:5, 562:11, 562:15, 562:25, 563:2, 563:6, 563:24, 564:10, 564:14, 564:23, 565:7, 566:13, 566:17, 566:20, 566:22, 567:1, 567:5, 568:6, 568:8, 568:11, 568:18, 568:20, 570:6, 571:12, 574:11, 574:14, 574:17, 578:8, 579:20, 579:24, 580:2, 580:5, 580:8, 580:11, 582:4,	582:7, 582:13, 592:7, 593:1, 593:20, 594:7, 595:11, 596:5, 597:21, 598:7, 598:12, 598:19, 598:23, 599:5, 599:24, 600:4, 600:8, 600:19, 600:23, 601:5, 601:24, 602:2, 602:7, 602:12, 602:15, 603:13, 612:4, 612:7, 612:13, 612:19, 612:23, 613:3, 614:2, 618:10, 618:22, 620:18, 638:8, 638:11, 638:24, 639:13 <b>witness</b> [31] - 366:1, 392:7, 392:9, 392:12, 429:4, 429:6, 429:9, 436:14, 446:10, 471:7, 472:7, 472:9, 472:23, 475:1, 478:4, 504:8, 521:12, 522:2, 570:7, 570:25, 571:2, 595:20, 595:23, 613:4, 613:16, 617:13, 620:10, 624:3, 625:22, 631:7, 642:6 <b>witness's</b> [2] - 503:24, 550:4 <b>witnessed</b> [5] - 622:6, 626:6, 629:7, 630:21, 632:11 <b>Witnesses</b> [1] - 345:3 <b>witnesses</b> [3] - 446:11, 570:11, 613:8 <b>WITNESSES</b> [7] - 333:2, 334:2, 335:2, 336:7, 336:11, 337:10, 338:2 <b>WITTLER</b> [1] - 643:5 <b>Wittler</b> [3] - 332:24, 643:17, 643:18 <b>WL</b> [1] - 346:15 <b>WNAX</b> [1] - 423:8 <b>woke</b> [1] - 575:11 <b>wonderful</b> [1] - 602:4 <b>wonderfully</b> [1] - 450:15 <b>wondering</b> [3] - 366:16, 591:13, 616:23	<b>Wood</b> [1] - 459:16 49 <b>woozy</b> [1] - 575:1 <b>word</b> [9] - 368:19, 378:22, 403:22, 450:1, 477:12, 566:11, 566:19, 589:25, 590:1 <b>wording</b> [1] - 413:9 <b>words</b> [2] - 419:24, 451:18 <b>workers</b> [1] - 402:17 <b>works</b> [10] - 416:16, 487:3, 540:11, 540:12, 545:15, 605:13, 605:14, 605:15, 605:23, 612:5 <b>world</b> [6] - 370:11, 396:15, 505:4, 507:6, 574:23, 606:19 <b>worms</b> [1] - 593:20 <b>worried</b> [4] - 400:24, 402:2, 517:7, 597:14 <b>worries</b> [1] - 396:1 <b>worry</b> [2] - 395:19, 401:25 <b>worrying</b> [1] - 607:14 <b>worse</b> [1] - 637:2 <b>worst</b> [5] - 487:16, 500:21, 501:1, 514:23, 615:19 <b>worst-case</b> [4] - 487:16, 500:21, 501:1, 514:23 <b>worth</b> [2] - 520:8, 574:25 <b>worthy</b> [1] - 380:21 <b>wow</b> [1] - 397:2 <b>wrenching</b> [1] - 612:2 <b>write</b> [5] - 377:12, 421:1, 586:10, 587:25, 603:10 <b>write-ups</b> [1] - 587:25 <b>writing</b> [1] - 456:11 <b>written</b> [7] - 357:22, 373:4, 375:2, 438:14, 477:9, 523:20, 632:7 <b>wrote</b> [2] - 420:25, 588:1 <b>Wuerttemberg</b> [2] - 341:17, 341:20
<b>X</b>				
<b>Xs</b> [1] - 579:5 <b>Xu</b> [1] - 342:17				

Y	473:3, 477:13, 477:25, 522:19, 553:6, 571:10, 593:11, 596:3, 613:24, 619:6 <b>yous</b> <sup>[1]</sup> - 587:25 <b>youth</b> <sup>[1]</sup> - 587:22
<b>Yan</b> <sup>[1]</sup> - 342:17 <b>Yankton</b> <sup>[2]</sup> - 423:8, 443:23 <b>yard</b> <sup>[4]</sup> - 577:21, 577:24, 581:8, 581:11 <b>year</b> <sup>[29]</sup> - 400:4, 400:6, 400:7, 411:20, 439:6, 470:13, 500:6, 514:25, 515:4, 525:13, 544:9, 562:9, 562:14, 573:15, 575:25, 587:23, 596:14, 596:20, 597:3, 598:1, 599:14, 622:7, 635:11, 636:22, 637:4 <b>Year</b> <sup>[2]</sup> - 344:6, 344:10 <b>yearly</b> <sup>[8]</sup> - 480:14, 481:4, 482:10, 482:11, 482:12, 482:20, 515:7, 515:22 <b>years</b> <sup>[40]</sup> - 353:8, 370:19, 370:20, 398:13, 402:8, 402:9, 402:24, 404:10, 411:21, 415:18, 421:25, 424:14, 424:15, 430:12, 438:12, 464:15, 464:21, 465:4, 465:14, 470:2, 477:16, 522:25, 525:11, 544:8, 548:16, 548:18, 548:19, 564:1, 564:4, 564:6, 572:7, 572:17, 587:10, 591:16, 597:25, 599:11, 607:15, 608:1, 620:1 <b>Years</b> <sup>[1]</sup> - 341:3 <b>years'</b> <sup>[1]</sup> - 534:18 <b>yes/no</b> <sup>[1]</sup> - 359:17 <b>yesterday</b> <sup>[7]</sup> - 351:10, 358:15, 371:15, 372:25, 420:15, 443:12, 510:12 <b>Yew</b> <sup>[1]</sup> - 347:23 <b>York</b> <sup>[1]</sup> - 550:24 <b>Yoshinori</b> <sup>[1]</sup> - 342:13 <b>yourself</b> <sup>[13]</sup> - 377:13, 429:18, 429:25,	<b>Z</b>  <b>Zealand</b> <sup>[1]</sup> - 342:8 <b>zero</b> <sup>[2]</sup> - 498:9, 552:3 <b>zoning</b> <sup>[14]</sup> - 395:14, 625:18, 626:14, 626:21, 628:15, 630:2, 630:8, 630:25, 631:23, 631:24, 632:1, 634:2, 635:21 <b>Zoning</b> <sup>[1]</sup> - 348:9