

2327 1 STATE OF NEW MEXICO ENVIRONMENTAL IMPROVEMENT BOARD 2 3 No. EIB 21-27(R) 4 IN THE MATTER OF PROPOSED NEW REGULATION, 20.2.50 NMAC - Oil and Gas Sector - 5 Ozone Precursor Pollutants 6 7 8 9 10 TRANSCRIPT OF PROCEEDINGS 11 12 BE IT REMEMBERED that on the 29th day of 13 September, 2021, this matter came on for hearing before 14 FELICIA ORTH, Hearing Officer, virtually through Cisco 15 Webex Meetings video conferencing, at the hour of 8:30 16 a.m. 17 18 Volume 8 19 20 21 REPORTED BY: CHERYL ARREGUIN, RPR New Mexico CCR No. 21 22 Albuquerque Court Reporting Service, LLC 3150 Carlisle Boulevard, Northeast 23 Suite 104 Albuquerque, New Mexico 87110 24 (505) 806-1202 abqcrs@gmail.com 25	2329 1 A P P E A R A N C E S (Continued) 2 For the New Mexico Oil and Gas Association: 3 ERIC L. HISER BRANDON CURTIS 4 Jordan Hiser & Joy, PLC 5080 N. 40th Street 5 Suite 245 Phoenix, Arizona 85024 6 (480) 505-3900 ehiser@jhjlawyers.com 7 bcurtis@jhjlawyers.com 8 DALVA L. MOELLENBERG Gallagher & Kennedy, PA 9 1239 Paseo de Peralta Santa Fe, New Mexico 87501 10 (505) 982-9523 dlm@gknet.com 11 12 For Conservation Voters New Mexico, Dine C.A.R.E., Earthworks, Natural Resources Defense Council, San Juan 13 Citizens Alliance, Sierra Club, and 350 New Mexico ("Clean Air Advocates"): 14 15 TANNIS FOX Attorney at Law Western Environmental Law Center 16 409 East Palace Avenue #2 17 Santa Fe, New Mexico 87501 (505) 629-0732 fox@westernlaw.org 18 DAVID R. BAAKE Baake Law LLC 19 2131 North Main Street Las Cruces, New Mexico 88001 20 (575) 343-2782 david@baakelaw.com 21 22 23 24 25
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2335 1 I N D E X 2 PAGE 3 WITNESSES: 4 LIZ THOMSON 5 Public Comment 2367 6 ADAM HOROWITZ 7 Public Comment 2371 8 LISA DEVORE (Topic Orders 1, 2 and 24) 9 Direct Testimony 2387 10 Cross-Examination by Mr. Rose 2398 11 Cross-Examination by Mr. Swift 2399 12 Cross-Examination by Mr. Hiser 2400 13 Cross-Examination by Mr. Baake 2402 14 Examination by the Board 2406 15 ELIZABETH BISBEY-KUEHN and BRIAN PALMER (Topic Order 27) 16 Direct Examination by Ms. Katz 2428 17 Cross-Examination by Ms. Gutierrez 2441 18 Cross-Examination by Mr. Rose 2447 19 Cross-Examination by Mr. Hiser 2448 20 REBECCA LONG 21 Public Comment 2490 22 HAROLD POPE 23 Public Comment 2492 24 LORI WALTERS 25 Public Comment 2496 26 SHELLEY MANN-LEV 27 Public Comment 2500	2337 1 I N D E X (Continued) 2 PAGE 3 WITNESSES (Continued): 4 JOHN R. SMITHERMAN (Topic Order 27) 5 Direct Examination by Mr. Hiser 2637 6 Direct Examination (Continued) by Mr. Hiser 2665 7 Cross-Examination by Ms. Fox 2694 8 Examination by the Board 2696 9 Further Direct Examination by Mr. Hiser 2708 10 Further Examination by the Board 2710 11 BRENDA MC KENNA 12 Public Comment 2650 13 DEE DICAMILLO 14 Public Comment 2654 15 DAVE ANDERSON 16 Public Comment 2657 17 SANDERS MOORE 18 Public Comment 2661 19 TAMMY THOMPSON (Topic Order 27) 20 Direct Examination by Ms. Paranhos 2717 21 Cross-Examination by Mr. Rose 2729 22 Cross-Examination by Mr. de Saillan 2735 23 Examination by the Board 2738 24 CLIFFORD VILLA (Topic Order 27) 25 Direct Examination by Mr. Shimanek 2743 26 Cross-Examination by Mr. de Saillan 2764 27 Cross-Examination by Mr. Rose 2766 28 Examination by the Board 2771 29 ELIZABETH BISBEY-KUEHN and BRIAN PALMER (Topic Order 27 continued) 30 Direct Examination by Ms. Katz 2774
2336 1 I N D E X (Continued) 2 PAGE 3 WITNESSES (Continued): 4 JONATHAN SENA 5 Public Comment 2504 6 JESSE BARNES 7 Public Comment 2508 8 LESLIE NOLTING (Topic Order 27) 9 Direct Examination by Ms. Gutierrez 2515 10 DANNY HOLDERMAN (Topic Order 27) 11 Direct Examination by Mr. Janoe 2524 12 Cross-Examination by Mr. Hiser 2529 13 Examination by the Board 2531 14 DAVID LYON (Topic Order 27) 15 Direct Examination by Ms. Paranhos 2537 16 Cross-Examination by Mr. Curtis 2564 17 Cross-Examination by Mr. de Saillan 2577 18 Cross-Examination by Ms. Fox 2578 19 Examination by the Board 2582 20 Redirect Examination by Ms. Paranhos 2588 21 HILLARY HULL (Topic Order 27) 22 Direct Examination by Ms. Paranhos 2591 23 Cross-Examination by Mr. Hiser 2613 24 Cross-Examination by Mr. Rose 2620 25 Cross-Examination by Ms. Fox 2621 26 Cross-Examination by Mr. Jaynes 2624 27 Examination by the Board 2627	2338 1 E X H I B I T S 2 ADMITTED 3 NOTE: No exhibits are attached physically to this transcript. They can be found online at www.env.nm.gov/opf/docketed-matters/ 4 ENVIRONMENTAL DEFENSE FUND: 5 EDF XXa. Amendments to the Rebuttal Testimony of David Lyon 2539 6 EDF A. EDF's proposed revisions to NMED's Proposed Oil and Gas Sector-Ozone Precursor Pollutants Rule, 20.2.50 NMAC (May 6, 2021) 2539 7 EDF C. Alvarez et al., Assessment of Methane Emissions from the U.S. Oil and Gas Supply Chain, 361 SCI. 186-88 (2018) 2539 8 EDF D. Permian Methane Analysis Project, EDF 2539 9 EDF E. Zhang et al., Quantifying Methane Emissions from the Largest Oil-Producing Basin in the United States from Space, 6 SCI. ADVANCES, Apr. 22, 2020 2539 10 EDF F. Robertson et al., New Mexico Permian Basin Measured Well Pad Methane Emissions Are a Factor of 5-9 Times Higher Than U.S. EPA Estimates, 54:21 ENVTL. SCI. TECHNOL. 13926-13934 (2020) 2539 11 EDF G. Lyon et al., Concurrent Variation in Oil and Gas Methane Emissions and Oil Price During the COVID-19 Pandemic, ATMOS. CHEM. PHYS. DISCUSS (in review, Dec. 11, 2020) 2539 12 EDF H. Cusworth et al., Intermittency of Large Methane Emitters in the Permian Basin, 8:7 Env'tl. Sci. Technol. Lett. 567-573 (June 2, 2021) 2539 13 EDF I. Irakulis-Loitxate et al., Satellite-Based Survey of Extreme Methane Emissions in the Permian Basin, 7:27 Sci. Adv. (June 30, 2021) 2539

2339		2341	
1	E X H I B I T S (Continued)	1	E X H I B I T S (Continued)
2	ADMITTED	2	ADMITTED
3	ENVIRONMENTAL DEFENSE FUND (Continued):	3	NEW MEXICO OIL AND GAS ASSOCIATION:
4	EDF K. EPA, Lessons Learned from Natural Gas	4	NMOGA 58. PowerPoint presentation, Topic 27S
5	Star Partners: Options for Reducing Methane	5	CENTER FOR CIVIC POLICY AND NAVA EDUCATION PROJECT:
6	Emissions from Pneumatic Devices in the	6	CCP and NAVA EP 6. Rebuttal Testimony of
7	Natural Gas Industry, Appendix 1 (2006)	7	Clifford Villa
8	EDF QQ. Rutherford, Jeffrey S. et al., Closing	8	CCP and NAVA EP 7. Curriculum Vitae of
9	the Gap: Explaining Persistent	9	Clifford Villa
10	Underestimation by US Oil and Natural Gas	10	
11	Production-Segment Methane Inventories,	11	
12	EARTHARXIV (in review)	12	
13	EDF RR. Direct testimony of David Lyon	13	
14	EDF YY. Deighton, Jacob A. et al., Measurements	14	
15	show that marginal wells are a	15	
16	disproportionate source of methane relative to	16	
17	production, 70(10) J. AIR & WASTE MGMT.	17	
18	ASSOC. 1030 (Aug. 2020)	18	
19	EDF ZZ. Omara, M. et al., Methane Emissions	19	
20	from Natural Gas Production Sites in the	20	
21	United States: Data Synthesis and National	21	
22	Estimate, 52 ENVTL. SCI. TECHNOL. 12915	22	
23	(Sept. 2018)	23	
24	EDF P. Resume of Hillary Hull	24	
25	EDF Q. Smith et al., Airborne Quantification of	25	
	Methane Emissions over the Four Corners		
	Region, 51 ENVTL. SCI. TECHNOL. 5832 (2017)		
	EDF R. Allen et al., Methane Emissions from		
	Process Equipment at Natural Gas		
	Production Sites in the United States:		
	Pneumatic Controllers, 49:1 Env'tl. Sci.		
	Technol. 633 (Dec. 9, 2014)		
	EDF T. O&G Emissions Inventory Project: Greater		
	San Juan and Permian Basin, Western Regional		
	Air Partnership ("WRAP")		
2340		2342	
1	E X H I B I T S (Continued)	1	HEARING OFFICER ORTH: Let's prepare to
2	ADMITTED	2	begin.
3	ENVIRONMENTAL DEFENSE FUND (Continued):	3	I believe I've captured all of the attendees
4	EDF U. Oil and Natural Gas Sector: Standards for	4	who should be made panelists.
5	Crude Oil and Natural Gas Facilities,	5	No matter how many times I try to do grid
6	Background Technical Support Document for the	6	setting, it goes to speaker.
7	Proposed New Source Performance Standards 40	7	Good morning.
8	CFR Part 60, subpart 0000a (Aug. 2015)	8	I see Ms. Gutierrez on the screen and
9	EDF V. Colorado Air Quality Control Commission	9	Mr. Shimanek and Cheryl, our court reporter.
10	Rule, 5 C.C.R., 1001-9, D.	10	I just had a text now from Tannis saying she
11	EDF X. Proximity Dataset Table	11	cannot hear us. Hmm. She's going to log on and off.
12	EDF Y. Control Techniques Guidelines for the Oil	12	So we'll give her a moment to do that.
13	and Natural Gas Industry Table 9-13, EPA	13	We're on the platform this morning at 8:30,
14	(Oct. 2016)	14	before nine o'clock public comment.
15	EDF Z. Background Technical Support Document,	15	MS. FOX: Can you hear me?
16	Proposed Reconsideration of the New Source	16	HEARING OFFICER ORTH: Yes.
17	Performance Standards 40 C.F.R. Part 60,	17	MS. FOX: I can't hear you. And I --
18	subpart 0000a (Sept. 2018)	18	HEARING OFFICER ORTH: Uh-oh.
19	EDF AA. Analysis of 0000a Annual Air Emission	19	MS. FOX: -- tested my sound before I came on.
20	Reports, MJB&A (Dec. 11, 2018)	20	I'm going to log on and off.
21	EDF CC. California Air Resources Board ("CARB"),	21	HEARING OFFICER ORTH: All right. Thank you.
22	Summary of Cost, Emissions, and Cost per Ton	22	While Ms. Fox is doing that, as I understand
23	using the 20 year and 100 year GWP,	23	it, we're going to address three topics this morning.
24	Respectively (revised Feb. 17, 2017)	24	One is the exhibits subject to objection on the basis
25	EDF DD. American Community Survey Data, United	25	that they relate to methane. The second is the NMOGA's
	States Census Bureau, and Places:Local Data		
	For Better Health, Centers for Disease Control		
	and Prevention, (data drawn from multiple		
	links)		
	EDF FF. Resume of Tammy M. Thompson		
	EDF JJ. Rebuttal Testimony of Hillary Hull		
	EDF III. Marcy Lowe and Robin Lowe-Skillern, Datu		
	Research, Find, Measure, Fix: Jobs in the U.S.		
	Methane Emissions Mitigation Industry (2021)		

2343 1 motion to strike certain sections of CCP and NAVA 2 exhibit, particularly the rebuttal testimony of 3 Professor -- I think it's Villa, rather than Villa. And 4 we'll go from there to the motion to strike NMOGA's 5 newest surrebuttal. 6 But let's wait. And if there's something I'm 7 missing that we need to do before 9:00, please speak up, 8 while we're waiting for Tannis. 9 Tannis, can you hear me? 10 A text is saying she still cannot hear. 11 MS. FOX: No. I can. This is very odd, but 12 yes, I can now. When I first came on, I couldn't, but I 13 can. Thank you. 14 HEARING OFFICER ORTH: All right. I'm glad -- 15 I'm glad that worked. 16 Let's start with the exhibits. 17 I'm going to pick on Mr. Rose for a minute. 18 Mr. Rose, what -- let's see. I don't see 19 Mr. Rose. 20 Is he with us? 21 He's not. All right. 22 Mr. Hiser. You know, having -- having 23 conducted the methane hearing in January for the OCC, I 24 certainly appreciate the distinction between what the 25 OCC was doing then and what the EIB would be doing now,	2345 1 And with that -- that's really all we're 2 seeking here, is just a reminder along those lines. 3 HEARING OFFICER ORTH: Okay. And I would 4 certainly put that in any report, number one. 5 Number two, I really think that this Board is 6 sufficiently engaged and sophisticated, frankly, about 7 our subject matter that they would not, in fact, be 8 confused. That's just how I feel about this Board. But 9 thank you for that. 10 MR. HISER: (Simultaneous discussion) Madam 11 Hearing Officer, that I think that New Mexico is well 12 served by the Board that it has in this case, which is 13 very actively engaged, obviously, has spent quite a bit 14 of time on the issues. So I heartily second that 15 sentiment that you have. 16 HEARING OFFICER ORTH: Thank you. 17 Ms. Paranhos, anything to add? 18 MS. PARANHOS: Thanks so much, Madam Hearing 19 Officer. 20 I would just really agree with what Mr. Hiser 21 just said. I mean, the information that we've offered 22 with respect to methane is either by way of 23 demonstrating co-benefits, we're never asking the Board 24 to directly regulate methane, nor to rely on methane 25 reductions as the basis for a cost effectiveness
2344 1 but I'm wondering if you would offer the most charitable 2 characterization that you could of why folks who perhaps 3 aren't as close to these rulemakings would be confused 4 here. We had heard some about methane in the hearing, 5 particularly from public commenters. 6 MR. HISER: I'm sorry, Ms. Orth. It's not 7 clear to me what motion you're actually addressing at 8 this point. 9 HEARING OFFICER ORTH: These are the 10 objections by NMOGA and IPANM. 11 MR. HISER: You're asking about our objection 12 to a couple of the exhibits from either EDF or Clean Air 13 Advocates? 14 HEARING OFFICER ORTH: Yes. 15 MR. HISER: Yes. Our -- our -- we have -- our 16 objection I just think goes to a question of nuance, 17 Madam Hearing Officer, which is that we think by and 18 large they've been used appropriately throughout the 19 hearing, and I think that we would be satisfied just 20 with a reminder from the Hearing Officer that this is a 21 rule about ozone and its precursors, and that 22 information should be considered in that light, as 23 opposed to the Board suddenly crafting a methane rule 24 based on the fact that there's a methane document in the 25 docket.	2346 1 analysis, nor to rely on any methane-only specific 2 control technology. 3 So methane is co-admitted with VOCs, it is 4 part of natural gas, and so we think it's appropriate to 5 speak to the co-benefits of what happens when a 6 regulator reduces VOC emissions as part of an ozone 7 precursor rule. There will also be methane co-benefits. 8 And I guess I would just add that that is very 9 standard practice. EPA does that routinely. They 10 consider co-benefits. Other regulators do, as well. 11 Just one example is in 2012 when EPA 12 promulgated the first New Source Performance Standards 13 for oil and gas sources, that was just a VOC rule. They 14 weren't directly regulating VOCs, but they did estimate 15 the cost effectiveness of methane reductions, and they 16 did talk a lot about methane co-benefits, and they 17 relied on information about methane control technologies 18 that operators had employed as part of the Natural Gas 19 STAR Program. 20 And so it's a very similar kind of a 21 proceeding here as to what EPA did back in 2012, and for 22 that reason that's why we've included some of this 23 information on methane emissions and control technology 24 that can produce both methane and VOCs. 25 HEARING OFFICER ORTH: Thank you very much.

2347 1 Mr. de Saillan, anything to add? 2 Right -- right now I'm just planning to 3 (unintelligible and/or inaudible) NMOGA'S objection, 4 IAPNM's objection to EDF and NMED exhibits and CCP, 5 but -- 6 THE REPORTER: Excuse me, Ms. Orth. Could you 7 repeat that. You cut out a little bit. 8 HEARING OFFICER ORTH: Oh, I'm very sorry. 9 I was asking Mr. de Saillan if he had anything 10 to add on my way to overruling the objections based on a 11 possible confusion between methane and ozone. 12 Mr. de Saillan? 13 MR. DE SAILLAN: Thank you, Madam Hearing 14 Officer. I just want to make a couple of comments here. 15 I agree with what Ms. Paranhos said, but I 16 also want to make the point that earlier in this hearing 17 we heard from a NMOGA economist expert, Mr. Dunham, and 18 he testified about the negative consequences in his view 19 of this rule, things like lost jobs and lost revenues to 20 the state. 21 Insofar as I'm aware, none of the parties 22 objected to that testimony or to his report. And 23 without commenting on the quality of that evidence, I 24 think it is generally the -- the type of evidence that 25 this Board can and should hear. But by the same token,	2349 1 MR. ROSE: And, Madam Hearing Officer, I'm 2 sorry I'm late, but I was having logistical problems. 3 And I thought we had agreed that the evidence 4 would be admitted subject to our objection and that we 5 brief the objection in the posthearing submittals so 6 that we wouldn't hold up the hearing. So -- at least 7 that was my understanding with Ms. Fox and others as to 8 why we didn't argue them at the admission of their 9 evidence, and they're putting on their evidence. 10 So -- 11 HEARING OFFICER ORTH: Okay. 12 MR. ROSE: -- if you rule on this motion, 13 obviously, I'd want to be heard, but it wasn't a motion, 14 it was merely an objection to admissibility, and it 15 seems to me that -- that we've stated any number of 16 times that -- that the evidence is being admitted 17 subject to the objection which would be addressed in 18 posthearing submittals. 19 So I certainly was not prepared to argue this 20 as a motion this morning, and as you can tell, I was 21 having logistical problems, and it seems to me arguing 22 it without me being able to actually present it and 23 respond I think is inappropriate. 24 HEARING OFFICER ORTH: All right. Thank you, 25 Mr. Rose.
2348 1 I think that it's important for the Board to hear about 2 the -- the co-benefits, the consequential benefits, if 3 you will, of this rule. 4 So we strongly oppose this motion. 5 Thank you. 6 HEARING OFFICER ORTH: Thank you. 7 So just to put it on the record, NMOGA and 8 IPANM's objections to the exhibits listed both in an 9 e-mail and in the attached Word document from IPANM are 10 overruled, and there will be a mention to the Board, at 11 least in my report, and presumably in the parties' 12 posthearing submittals, just being clear -- 13 MR. HISER: Madam Hearing Officer -- 14 (Simultaneous discussion.) 15 HEARING OFFICER ORTH: -- over the rulemaking. 16 Ms. Hise -- Mr. Hiser. 17 MR. HISER: (Unintelligible and/or inaudible) 18 counsel, Mr. Hiser. 19 I would note that in your discussion of the 20 proceedings for this morning, you did not specifically 21 mention IPA's objections for this, and so therefore I 22 think it's not appropriate for you to rule which is 23 basically on an IPA New Mexico solely on the strength of 24 NMOGA's position on that. 25 HEARING OFFICER ORTH: Okay.	2350 1 I'm sorry. I was going through my -- 2 Hold on, Ms. Fox. 3 I was going through my stack of papers that I 4 felt like I still needed to address, and this seemed 5 more straightforward than the others. 6 Ms. Fox, I'd like to move on, unless you have 7 something you need to say right now. 8 MS. FOX: Thank you, Madam Hearing Officer. 9 I was just going to suggest since it appears 10 that you've already formulated an opinion on this issue, 11 that -- and I understand Mr. -- we did have this 12 agreement with Mr. Rose on one hand. 13 On the other hand, you seem to have addressed 14 this issue fully, and I wonder and -- but I do 15 appreciate Mr. Rose wanting an opportunity to speak on 16 this issue, and so perhaps that could be done in order 17 to take this issue off the table. Maybe Mr. Rose could 18 present his argument over the lunch hour or some other 19 time today. 20 I don't think crafting that argument will take 21 too much of his time, and it does appear as though, 22 Madam Hearing Officer, you've -- you understand the 23 issue and you've made your decision. 24 HEARING OFFICER ORTH: All right. Thank you. 25 We have just a little bit of time left. I'd

2351 1 like to move on to NMOGA's motion to strike CCP and NAVA 2 Exhibit 6, which is the rebuttal testimony of technical 3 witness Professor Villa. 4 Let me just say I carefully considered the 5 motion, the response and the reply. I certainly want to 6 thank CCP and NAVA for their -- the excellent written 7 response. 8 Here, too, though, I don't feel like I need to 9 hear extensive motion argument, because NMOGA's 10 understanding just doesn't comport with my own, and in 11 this case, Mr. Hiser, you have the disadvantage of 12 having as a Hearing Officer someone who has been in the 13 EIB's orbit since the mid-'80s. 14 We have taken a lot of technical testimony 15 that was, in fact, expert legal testimony. We took it 16 in the Solid Waste Management Regulations overhaul in 17 2006. We heard expert legal testimony from the general 18 counsel of the Municipal League. We took it in, I 19 think, our first clean cars hearing in 2008. Certainly 20 heard lots of it from former EPA lawyers in the 21 greenhouse gas emissions hearings in 2010 and 2011, when 22 they were put into place and when they were undone. 23 So it's just the statements here, I think, are 24 simply incorrect. This Board is accustomed to hearing 25 expert legal testimony.	2353 1 what they're putting forward by the way of legal test -- 2 testimony really isn't expert legal testimony, it's 3 basically legal argument. It seems to me that giving 4 them basically more than one bite at the apple in terms 5 of making legal argument is inappropriate. 6 It seems -- the testimony, as it were, seems 7 to me to be perfectly appropriate if you're going to 8 argue it posthearing, but I don't think it rises to the 9 level of needing expert testimony. All of us can read 10 the statutes and decide -- and argue whether or not 11 they're applicable in this context. 12 So I don't think the Board needs legal advice 13 from out -- someone outside of the Board's counsel, and 14 it seems to me it's really improper factual testimony, 15 as well. It wouldn't rise to the level of expert 16 testimony, I don't believe, in a court proceeding. So I 17 don't think it should be here, as well. 18 HEARING OFFICER ORTH: All right. Thank you 19 for that. 20 I certainly have again on behalf of the Board 21 a history of navigating the line between the sort of 22 expert testimony that would be taken in a court and the 23 sort of expert testimony that would be taken before an 24 administrative board, and I believe Professor Villa 25 clears that -- clears that bar.
2352 1 Are there any questions about that? 2 I really -- it's just part of our history, 3 part of the Board's history. 4 MR. HISER: For the record, I would simply 5 note that this is inconsistent with this Hearing 6 Officer's prior resolution on the NMOGA matter, and so 7 we simply adhere to that prior approach that was taken. 8 I have nothing further to add other than making that 9 note for the record. 10 HEARING OFFICER ORTH: Thank you. 11 Ms. Katz? 12 MS. KATZ: Madam Hearing Officer, I would just 13 note that the arguments that were made regarding the 14 legal argument that NMOGA put forward were based on the 15 fact that the technical experts that that testimony was 16 purportedly attached to were not actual legal experts, 17 and that when you have a lawyer who is a legal expert, 18 then that is an appropriate time to make those types of 19 legal -- that you could put that testimony before the 20 Board. 21 HEARING OFFICER ORTH: All right. Thank you 22 for, that Ms. Katz. 23 Mr. Rose? 24 MR. ROSE: Yes. First, we join in NMOGA's 25 motion; but secondly, it seems to me that what we're --	2354 1 Mr. Hiser, did you have something to add? 2 I'd like to move to the -- I'd like to move -- 3 MR. HISER: Madam Hearing Officer, I have 4 nothing else. 5 HEARING OFFICER ORTH: All right. Thank you. 6 So as to Clean Air Advocates, EDF's and NMED's 7 joint motion to strike parts of NMOGA's proposed 8 surrebuttal on LDAR, I certainly read the motion and the 9 response, and a few things came to mind. 10 Certainly if a lot of economic data would be 11 coming in to surprise any rulemaking petitioner halfway 12 through the hearing, I -- I want to avoid that 13 fundamental unfairness to any petitioner, and I'm 14 sensitive to any sandbagging or other attempts at 15 surprise in a rulemaking, which doesn't serve anyone's 16 best interest. 17 At the same time, having gone through the 18 table that NMOGA put together at the end of the 19 narrative part of their motion, it seemed like there 20 wasn't perhaps as much data as I feared that was new. 21 So I'd like to spend a little time on the 22 slides and the spreadsheets in particular, because this 23 is where I still had questions. NMOGA states that it's 24 entitled to rebut the statements made on rebuttal, that 25 EIB should conclude from Oxy's joining of the proximity

2355 1 LDAR concept that the measures are feasible for 2 industry. 3 Mr. Hiser, if you would address that, please. 4 I -- I imagine that NMOGA would have been motivated to 5 offer whatever evidence it had on feasibility regardless 6 of what Oxy was doing. I mean, presumably you felt the 7 way you felt before Oxy reached whatever agreement it 8 reached with -- with the others. Would you address 9 that? 10 MR. HISER: So, Madam Hearing Officer, I think 11 that NMOGA has addressed throughout this hearing its 12 concerns about the frequency and cost of LDAR provisions 13 in the testimony of Mr. Smitherman and in a number of 14 its exhibits, which were introduced without objection, 15 including Exhibit 37, which is, for example, our cost 16 model and all the underlying data from the greenhouse 17 gas reporting program. 18 However, under the Clean Air Act, as 19 Ms. Paranhos has reminded us and as you yourself just 20 spoke, any time an industry member does something, that 21 may be used as, quote, proof in the Clean Air Act 22 context that something is technically and economically 23 feasible. 24 Clean Air Act -- Advocates witness Dr. McCabe 25 specifically makes that point in his rebuttal testimony,	2357 1 In Hillary's direct she estimated the 2 reductions and the costs that EDF believes are 3 applicable to our LDAR proximity proposal, and no party 4 in their rebuttal rebutted that particular analysis. 5 That analysis is different than what NMED did, because 6 EDF used its own estimate of the VOC emissions that 7 would accrue, as well as our own estimate of cost. 8 And so it is particularly prejudicial to us 9 that on surrebuttal NMOGA is now rebutting our cost 10 effectiveness estimate. I would have been happy to have 11 responded in our surrebuttal had they responded in their 12 rebuttal. However, now we don't have that opportunity. 13 HEARING OFFICER ORTH: Thank you. 14 Let's see. Ms. Fox and then Ms. Katz. 15 MS. FOX: Thank you, Madam Hearing Officer. 16 You know, all that I have to add to what 17 Ms. Paranhos just said is -- if I could have screen 18 sharing ability, I'd like to just briefly show you 19 Ms. Hull's testimony just so you have a sense of the 20 detail of it. 21 Thank you. 22 We see -- there we go. 23 So Ms. Hull presented pretty detailed 24 testimony in her direct testimony on the estimated costs 25 of our LDAR proposal in the estimated emissions
2356 1 and that means that to the extent that that may not have 2 been an issue, that it's been reopened for us to 3 investigate. Those comments were all made in rebuttal. 4 Therefore, we could not have responded to them prior to 5 that time frame. 6 On the general issue, though, of LDAR costs 7 and LDAR frequency, NMOGA's position has been pretty 8 clear since its direct testimony that it believes that 9 the costs do not warrant the benefits that are here, 10 although we agree that there should be LDAR overall, as 11 you heard from Mr. Smitherman in his testimony on 12 pneumatics. 13 So I think, then, that the whole question of 14 us not being able to speak to the relative frequency 15 when that has been an issue that we have placed in front 16 of the Board since the inception of this case is 17 counterfactual, charitably, by the other parties. 18 HEARING OFFICER ORTH: Thank you. 19 I saw Ms. Paranhos first and then Ms. Fox. 20 MS. PARANHOS: Thank you so much. 21 So I think in particular with respect to EDF's 22 LDAR proximity proposal, there was no testimony nor any 23 type of exhibit even that directly rebutted Hillary 24 Hull's cost effectiveness estimate of our enhanced LDAR 25 proximity proposal.	2358 1 reductions. 2 I have seven pages up here where she 3 describes, you know, how they got to the number of 4 wells, for example, that would apply, the methodology 5 that we use to estimate the number of homes or EDF 6 number of homes in places of residence and business that 7 would apply, methodology to estimate leaks, cost 8 effectiveness of the proposal, and even comparing the 9 cost effectiveness of the proposal with other 10 jurisdictions. 11 So they're all backed up with numbers, and 12 then this testimony is backed up with numerous exhibits, 13 as well. 14 And so if NMOGA wanted to rebut the cost 15 estimates and the emission reductions, they should have 16 done it in rebuttal, not in response to a comment from 17 Dr. McCabe, who is not an economist, that merely said 18 that the fact that Oxy is joining in this proposal shows 19 that it's technically feasible. That's what they're 20 hanging their hat on to provide this kind of evidence 21 rebutting the proximity proposal, when they said in -- 22 in NMOGA's rebuttal they did not mention the proximity 23 proposal at all. 24 HEARING OFFICER ORTH: Okay. Thank you. 25 Ms. Katz?

2359 1 MS. KATZ: Thank you, Madam Hearing Officer. 2 And NMED's concern was mainly regarding the 3 NMOGA model plant issue and the spreadsheets that NMOGA 4 has now put forward as surrebuttal, and in -- and in 5 their slides 10 through 11 of the surrebuttal. And they 6 point their -- in their table that they included with 7 their response, they say that they provided all the data 8 in their Exhibit 27. 9 You know, that is the GHGRP data, and so they 10 had that data, and then they just put the final numbers 11 that they had in their -- in their testimony. And now 12 in rebuttal, they -- they didn't show any of their work 13 on that, how they got to that -- those numbers, and 14 their -- that one page, tiny -- the tiny, little font 15 GHGRP data, there's nothing intuitive as to how they 16 went from that to these model plant numbers that they 17 put forward. 18 And so, you know, it's incumbent on them to 19 show their work, how they did that, and now they're 20 putting that forward in slides 10 and 11 and these 21 spreadsheets, and, you know, the -- and those 22 spreadsheets all point out that if you look at the file 23 data they were created on July 22nd and July 26. So 24 they -- they clearly had them -- or they had done the 25 work to -- and had that methodology that they could have	2361 1 understood what the import of our analysis was. They 2 disagreed with our contention about the greenhouse gas 3 data. 4 And so this is really just supplying 5 additional information to help people understand what 6 that point was. There's no question about surprise, and 7 they -- plus they've had since last Thursday to look at 8 this. It's not like we've sprung this on them last 9 night, which has been sort of the practice for turning 10 in surrebuttal testimony. 11 So I don't believe that the Department has any 12 real thing that it can say. 13 Plus, the Department itself is changing its 14 position constantly about what its frequency is, and 15 that puts the cost effectiveness of its constant changes 16 of frequency certainly at issue. We couldn't respond to 17 that. They did that after the rebuttal deadline. So I 18 don't think the Department has anything really to say 19 here. 20 In terms of Ms. Paranhos and the environmental 21 groups, a quick and simple response to that is that our 22 principal beef here is with the Department's data, and 23 our response is to the Department's data. And so while 24 we believe that the issue of cost effectiveness is 25 certainly joined, we are particularly proposing to
2360 1 and should have provided with their direct testimony or 2 their rebuttal, but they didn't. 3 And so it's just really not appropriate for 4 that to come in now, in the middle of the hearing as 5 surrebuttal. And that was the Department's main issue. 6 HEARING OFFICER ORTH: All right. Thank you. 7 Mr. Hiser, is there some reason the data 8 wasn't provided earlier so that it would not be a 9 surprise? 10 MR. HISER: Well, Madam Hearing Officer, it 11 was discussed, and the basic point that we had made, 12 which was that the greenhouse gas reporting data, which 13 includes the equipment count, shows that the equipment 14 counts that were being used is pretty clear in terms of 15 its import and impact. And all that data is publicly 16 available to anybody. 17 We didn't think it was necessary to actually 18 show the math at the level of two times two equals four. 19 But the Department said that they were having trouble 20 following the math, and so we're merely providing the 21 math that shows that the -- what we did before is what 22 we said we did. 23 So I don't think that there's any question of 24 surprise here. The NMED devoted like eight pages to our 25 economic analysis and the cost data. They clearly	2362 1 surrebut the specific numbers that are in their data, 2 where our focus is on the Department's data, and that's 3 what we're showing here. 4 HEARING OFFICER ORTH: All right. 5 Oh, Ms. Fox. 6 MS. FOX: Just very briefly, Madam Hearing 7 Officer. 8 So I'm not -- I'm not sure, but maybe I heard 9 Mr. Hiser just say that he's withdrawing the slides with 10 regard to the occupied area proposal? 11 MR. HISER: I am not withdrawing them, because 12 we placed in issue frequency from our direct testimony 13 thereon. 14 MS. FOX: Okay. 15 MR. HISER: That means it's an issue before 16 the hearing, and if they want to rely on their data, 17 they may, but we're certainly entitled to rely on the 18 Department data on the frequency issue. 19 MS. FOX: Sorry. 20 Just again in order to really understand 21 what's going on here, the Department put forth their 22 LDAR costs and estimated reductions in a spreadsheet 23 that they put online in January -- in June and then put 24 that in their direct testimony. 25 And in NMOGA's comments in its direct case, in

2363 1 its red-line, the comments that were struck because they 2 were inappropriately filed, NMOGA specifically 3 referenced that spreadsheet, which is -- I mean, it's 4 very complicated. 5 I'm sure, Madam Hearing Officer, you've seen 6 it. I'm just going to throw it up on the screen here. 7 Oh, hold on. 8 HEARING OFFICER ORTH: I see it. I'm holding 9 it, Ms. Fox. 10 MS. FOX: Okay. Great. 11 And so, you know, NMOGA was fully aware 12 that -- of that spreadsheet. It referenced it in its 13 direct case. As Ms. Katz has pointed out, the two 14 spreadsheets, which are really the most problematic 15 evidence to -- that they're offering at this late date, 16 were created before NMOGA filed its direct case. 17 And so it's -- it really is unfair not to 18 show -- have shown that evidence now. And we also 19 question whether Mr. Smitherman is the witness who 20 developed that table, those spreadsheets, and is the 21 correct witness to present that evidence. 22 HEARING OFFICER ORTH: All right. Thank you 23 for that. 24 We're now -- oh, Ms. Katz. 25 MS. KATZ: Sorry, Madam Hearing Officer.	2365 1 partly the responsibilities of the Hearing Officer, 2 partly the definition of record proper, for example, 3 what I'm inclined to do -- because I really am sensitive 4 to detailed information coming in as a surprise, I do 5 think it's fundamentally unfair to the petitioner, to 6 handle it more as an offer of proof, that is to say to 7 exclude it, but allow NMOGA to describe what they would 8 be offering if they were allowed to offer it, because it 9 will remain in the record proper for better or worse. 10 We can talk further about this after I accept 11 public comment if we need to have more discussion. 12 Okay. Board Members, if you're on the 13 platform, you can turn on your screen now. 14 Thank you very much for waiting while we 15 discussed some procedural matters just now. 16 Members of the public, my name is Felicia 17 Orth, Hearing Officer conducting a hearing in EIB 21-27, 18 a rulemaking on ozone precursors. 19 We have public comment sessions every day at 20 9:00, 1:00 and 5:00. 21 This morning I'll be calling on the public who 22 reached out to the Board administrator in this order, 23 Representative Andrea Romero, Representative Liz 24 Thomson, Duane Chili Yazzie and Adam Horowitz. 25 If you're on the platform and did not
2364 1 Did you -- you froze so -- and I had raised my 2 hand. I don't know if you called on me. 3 HEARING OFFICER ORTH: I'm sorry if I froze. 4 Please, Ms. Katz. 5 MS. KATZ: I just simply wanted to respond to 6 Mr. Hiser's statement that NMED has been changing 7 constantly, and I just wanted to say that it's true in 8 our September 7th filing that we had proposed some 9 changes to the LDAR frequencies, but that then one week 10 later we changed it, and that simply went back to what 11 it was before. 12 So the suggestion that there have been, you 13 know, un- -- those were totally unanticipated and 14 difficult to understand, it simply went back to what it 15 had been the whole time before. So it changed for a 16 week, and then it went back to exactly what it was 17 throughout -- since it was -- as it was in May, when we 18 filed the petition. 19 HEARING OFFICER ORTH: All right. Thank you. 20 So we are now a few minutes past nine o'clock. 21 We do have four public commenters this morning. 22 If you're on the platform to offer public 23 comment, I will invite it in just a moment. 24 At this point, based on my understanding of 25 the Board's rulemaking procedures in 20.1.1, including	2366 1 communicate via e-mail with the Board administrator, I 2 am still happy to accept your comment. Please reach out 3 through the chat which is enabled for everyone. 4 Public comment is taken under oath, is taken 5 by audio, not video, and is limited to five minutes. 6 So let me look for Representative Romero. 7 I am not seeing Andrea Romero. 8 Let me look for Liz Thomson. 9 All right. Can you hear me, Representative 10 Thomson? 11 Hello? 12 MS. THOMSON: Yes. I can hear you. Thank 13 you. 14 Are you ready? 15 HEARING OFFICER ORTH: Oh, good. I can hear 16 your voice -- I can hear your voice clearly. 17 If would you please spell your name. 18 MS. THOMSON: Okay. Liz, L-I-Z, Thomson, 19 T-H-O-M-S-O-N. 20 HEARING OFFICER ORTH: Thank you. 21 If you would raise your right hand. 22 Do you swear or affirm to tell the truth? 23 MS. THOMSON: I do. 24 HEARING OFFICER ORTH: Thank you. 25

2367 1 LIZ THOMSON 2 having been first duly sworn or affirmed, gave 3 public comment as follows: 4 PUBLIC COMMENT 5 HEARING OFFICER ORTH: I'm going to start your 6 five minutes now. 7 MS. THOMSON: Thank you. 8 As I said, I'm Representative Liz Thomson. I 9 represent House District 24, which is in the Northeast 10 Heights of Albuquerque. But I'm speaking on behalf of 11 kids' lungs statewide. 12 I have served the previous six years as 13 co-chair of the New Mexico Tobacco Settlement Oversight 14 Committee, and one of our main goals is to keep teens 15 from using to -- youth from using tobacco, because we 16 know how important lungs are. 17 I support Governor Michelle Lujan Grisham's 18 call for nation-leading oil and gas pollution rules. To 19 achieve that goal, the Environmental Improvement Board 20 must strengthen the New Mexico Environment Department's 21 proposed ozone precursor rules to protect those living 22 closest to development. 23 As a mother and a grandmother, my top concern 24 is the lungs and health of all kids, my kids and 25 grandkids included. Every child in our state has the	2369 1 New Mexicans' air, water and health, but rural 2 communities, tribal communities, children and the 3 elderly are especially at risk. And I will note that I 4 grew up in the Crownpoint area. I grew up in 5 Crownpoint. 6 More than 130,000 New Mexicans live within a 7 half a mile of oil and gas development, including 8 communities of color, that face disproportionate impacts 9 from climate change and air pollution. Leaks due to 10 equipment malfunction and lack of maintenance account 11 for 70 percent of the oil and gas industry's emissions 12 statewide. 13 I appreciate the strong rules that NMED has 14 put forward to a strong -- and they have put forward a 15 strong proposal. Here are three critical improvements 16 that EIB should make to protect communities and address 17 major sources of pollution. 18 One, protect those living closest to 19 development by requiring more frequent inspections to 20 find and fix leaks. 21 Two, ensure strong requirements for operators 22 to control pollution during completion of an oil or gas 23 well, as well as when they redevelop an existing well. 24 And strengthen requirements -- number three is 25 strengthen requirements to cut pollution from pneumatic
2368 1 right to breathe clean air without industry threatening 2 that -- that those same kids' schooling will be taken 3 away with these rules. That is not the case. 4 Every industry, no matter what it contributes 5 to society, has an obligation to be a good corporate 6 citizen. Industry contributes to our schools and our 7 state budget, but they also make billions of dollars in 8 profit by extracting publicly held resources off of our 9 public lands, and they export most of that profit out of 10 state. Spending a miniscule amount to protect our kids' 11 lungs is the least they can do. 12 These rules are a basic courtesy to the people 13 who live close to industry and threatening to leave the 14 state because of the same industry rules that it follows 15 in Colorado is unacceptable. In fact, Colorado has 16 successfully implemented more frequent inspection 17 schedules for homes and schools that have oil and gas 18 wells in their backyards, and New Mexico should do the 19 same. 20 Also, setting strong rules at the state level 21 sets a good bar for forthcoming federal methane rules 22 that can help protect New Mexicans from states like 23 Texas who does -- who don't have the same kind of 24 regulations. 25 Oil and gas pollution are taking a toll on all	2370 1 controllers that are used in oil and gas production. 2 The devices are the second largest source of oil and gas 3 methane emissions in New Mexico. NMED should require 4 companies to inspect pneumatics for leaks and accelerate 5 the timeline to retrofit equipment with zero bleed or 6 zero emission pneumatic controllers. 7 Thank you for taking the time to listen to me. 8 Thank you for all that you do, especially to protect a 9 New Mexican's kids. Thank you so much. 10 HEARING OFFICER ORTH: Thank you, 11 Representative Thomson. 12 Let me look for Duane Chili Yazzie. 13 I don't see him by name. Perhaps Call-in User 14 Number 5. 15 Caller Number 5, would you tell us who you 16 are? 17 Caller 5? Hello? 18 CALL-IN USER 5: (Unintelligible and/or 19 inaudible.) 20 HEARING OFFICER ORTH: Caller 5? 21 CALL-IN USER 5: (Unintelligible and/or 22 inaudible.) 23 HEARING OFFICER ORTH: Okay. 24 Let me move to Mr. Horowitz. 25 Mr. Horowitz, I've unmuted you.

2371 1 Can you hear me? 2 MR. HOROWITZ: Yes, I can. Thank you. 3 HEARING OFFICER ORTH: If you would spell your 4 name first, please. 5 MR. HOROWITZ: Yes. Adam, A-D-A-M, Horowitz, 6 H-O-R-O-W-I-T-Z. 7 HEARING OFFICER ORTH: And if you would raise 8 your right hand. 9 Do you swear or affirm to tell the truth? 10 MR. HOROWITZ: I do. 11 HEARING OFFICER ORTH: Thank you. 12 ADAM HOROWITZ 13 having been first duly sworn or affirmed, gave 14 public comment as follows: 15 PUBLIC COMMENT 16 HEARING OFFICER ORTH: I'll start your five 17 minutes now. 18 MR. HOROWITZ: Thank you. 19 Good morning, all, and thank you so much for 20 accepting public comment on this important methane 21 pollution rule. 22 My name is Adam Horowitz, and I'm a New Mexico 23 resident and a co-founder of three national nonprofit 24 organizations working at the intersection of faith, 25 community and social environmental justice. As a person	2373 1 While the Environment Department has put 2 forward a strong proposal, more work needs to be done to 3 protect communities and to meet the Governor's 4 aspiration of nation-leading rules to cut pollution. 5 Specifically, the Environmental Department -- 6 the Environment Department should require more frequent 7 inspections to find and fix leaks, ensure stronger 8 requirements for operators to control pollution during 9 the completion or redevelopment of an oil or gas well, 10 and to strengthen requirements to cut pollution from the 11 very high emissions pneumatic controllers that are used 12 in oil and gas production. 13 So let us prove to our young people and to 14 frontline communities that we are not willing to 15 sacrifice their health and well-being for convenience 16 and profit. Let us do our part to curb climate change 17 and ensure that young people in New Mexico and around 18 the world have a liveable future. 19 Thank you. 20 HEARING OFFICER ORTH: Thank you very much, 21 Mr. Horowitz. 22 Let's see. Let me look for Representative 23 Romero again. 24 I don't see an Andrea Romero in the list. 25 And I don't see Duane Chili Yazzie.
2372 1 rooted in a faith tradition, which holds all of creation 2 as sacred, and as a citizen of the US, one of the 3 world's top contributors to climate change, I believe we 4 face a profound moral responsibility to do everything we 5 can to protect life on our precious planet. 6 My work brings me into contact with many young 7 adults who are fearful of the climate chaos in the world 8 they are inheriting. Earlier this month the results of 9 a worldwide survey of young people, ages 16 to 25, 10 showed that some 60 percent were very or extremely 11 worried about climate change, and 65 percent felt that 12 governments were failing young people when it comes to 13 climate change. 14 Here in New Mexico, a state that emits more 15 than 1.1 million tons of methane each year, a state that 16 made national news for its methane cloud visible by 17 satellite, we have a chance to make a difference, and to 18 model a government that is not failing its young people. 19 But it will take more effort. 20 We have many young people and children living 21 within critical ranges of the oil and gas industry in 22 New Mexico whose health is adversely affected by these 23 operations. We have a responsibility to care for our 24 children and youth whose voices are often not heard in 25 forums like these.	2374 1 I'm going to go back to Caller 5. 2 Caller 5, can you hear me? 3 Nothing there. Okay. 4 There are several more opportunities to offer 5 public comment in this hearing, 9:00, 1:00 and 5:00 6 every day. Please reach out to Pam Jones, the Board 7 administrator, to identify the slot in which you would 8 like me to call your name. 9 Let's return to the technical case at this 10 time. 11 Board Members, we heard some argument between 12 8:30 and 9:00. We did not quite finish the 13 conversation, and at this point the -- let me sum up, 14 and I'll invite counsel to come back on the screen if 15 they have questions. 16 I denied the motion to preclude Professor 17 Villa from testifying, noting that I've taken a lot of 18 legal testimony as, quote, unquote, technical testimony. 19 I've served the Environmental Improvement Board, a 20 variety of boards over the years, 1999, and the 21 Environmental Improvement Board has a long history of 22 accepting legal testimony, if you will, expert legal 23 testimony, in its rulemaking hearings. 24 I also used to accept it at Department 25 hearings in permitting and enforcement cases, and I

2375 1 believe Professor Villa clears -- clears the bar, as I 2 said, for providing knowledgeable testimony that may 3 assist this Board in its deliberations. 4 So we'll hear from CCP and Nava's witness on 5 rebuttal. 6 The motion to strike some of NMOGA's 7 surrebuttal was definitely more challenging. 8 MEMBER HONKER: Madam Hearing Officer, you're 9 cutting out at least on my system. I don't know if 10 everybody else is hearing that. 11 HEARING OFFICER ORTH: Oh, I'm very sorry. 12 I'm going to turn off my video, then, just to get 13 through this. I'm not getting any messages on my screen 14 so I'll just turn off my video. 15 Okay. Is this better? Yes? 16 Okay. I see Madam Chair nodding. 17 So we -- we -- if I could sum up, although 18 NMOGA has had certain data around the feasibility of 19 some of the LDAR provisions since July, it chose to 20 offer it in these spreadsheets just a handful of days 21 ago, after the hearing had started. The other parties 22 don't really have an opportunity to study the data and 23 provide their own analysis of it with just a couple days 24 left in the hearing. 25 My read of 20.1.1, which is your rulemaking	2377 1 own answer to it. 2 But that's not going to be possible this week, 3 it's not something they can do overnight, at which point 4 I think you would have to schedule another day of 5 hearing for sometime in the future. 6 Do the Board Members have any questions about 7 that? 8 MR. HISER: Madam Hearing Officer, if we may, 9 we have a lot of questions. 10 Are you excluding all of Mr. Smitherman's 11 testimony or just the two tabular Excel spreadsheets? 12 HEARING OFFICER ORTH: Right now the two 13 spreadsheets, and again to -- what I'm -- what I'm 14 seeking to exclude again is the surprising material, not 15 that portion of Mr. Smitherman's testimony that was 16 based on information that was already included in his 17 direct. So we may need to -- we may need to keep 18 talking about this. 19 Let me ask, though, the Board Members, first, 20 if they have questions. 21 Board Members, questions. 22 CHAIR SUINA: Thank you, Madam Hearing 23 Officer. 24 I did have the opportunity to listen in on 25 some of the discussion before the meeting. So I -- I
2376 1 procedures, in terms of the duties of the Hearing 2 Officer and also the definition of record proper, say to 3 me that I cannot strike these documents in the sense of 4 directing the Board administrator to reach into the 5 files and remove them. 6 That's not, in my mind, a -- either possible 7 or desirable, particularly because this Board may 8 disagree with my conclusion that these -- this new data 9 should be excluded and not presented today, when we're 10 doing LDAR, on the basis that really no rulemaking 11 petitioner should be surprised by new data toward the 12 end of a hearing, particularly when, you know, in this 13 case the rulemaking petitioner has been so vigorously 14 engaged in negotiating on all fronts really throughout 15 the rulemaking. 16 So it -- my read of your procedural rules is 17 that I will grant the motion insofar as I would like to 18 say to NMOGA you cannot present this surprising data 19 today in the name of surrebuttal. 20 Having said that, again I have to contemplate 21 the possibility that this Board would -- would reach a 22 different conclusion, at which point my suggestion to 23 you would be to allow the other parties, particularly 24 the Department who would be surprised by this new data, 25 an opportunity to actually study it and develop their	2378 1 think I understand, you know, how you are phrasing this. 2 So I'll leave it to some of the other Board Members if 3 they have questions. 4 VICE-CHAIR TRUJILLO DAVIS: I'm going to take 5 the opposite. I came in late on the discussion. So I 6 wasn't really sure what the issue was. 7 Was this testimony that we already heard or 8 that we were going to hear? 9 HEARING OFFICER ORTH: This is NMOGA's LDAR 10 testimony. We were going to devote most of today to 11 LDAR, which is why we were having discussion before 12 public comment today. 13 VICE-CHAIR TRUJILLO DAVIS: Okay. I'm clear 14 on it now. Thank you. 15 HEARING OFFICER ORTH: Um-hum. 16 Other questions? 17 All right. So we can go back to -- to the -- 18 Mr. Hiser, if you want to come back on screen, and any 19 other counsel who would like to come back on screen 20 briefly. 21 As I understand it, please correct me if I'm 22 wrong, what I would be excluding specifically would be 23 slides 52 to 56 and the Excel spreadsheets. 24 MS. KATZ: And I believe, Madam Hearing 25 Officer, the Department was ask -- the slides 10 and 11

2379 1 that are associated with those spreadsheets. 2 HEARING OFFICER ORTH: That's right. 3 And I wonder, you know, obviously, about the 4 Department's September 16 final rule proposal following 5 rebuttal testimony, but I think you -- you've explained 6 that. 7 Let's see here. Ms. Fox? 8 MS. FOX: I have nothing more to add. Thank 9 you, Madam Hearing Officer. 10 HEARING OFFICER ORTH: Okay. 11 Mr. Rose? 12 MR. ROSE: Yes. My understanding of what 13 Mr. Hiser was offering were demonstrative exhibits. So 14 they weren't being offered into evidence, in any event. 15 So I don't know that you can necessarily strike them 16 because they're not part of the evidence. I thought 17 your ruling was with respect to the testimony that would 18 be adduced under the -- in respect to those -- those 19 slides. 20 So I think what you're talking about here is 21 excluding Mr. Smitherman from testifying on those issues 22 as opposed to excluding the exhibits. So I just wanted 23 to make it clear that it's -- your ruling on the 24 admissibility of his oral testimony in surrebuttal on 25 those issues.	2381 1 in his direct testimony, is not appropriate, because the 2 Board is entitled to hear the explanation of why NMOGA 3 did that so they can understand the cost context of 4 Mr. Smitherman's testimony. 5 The Department clearly understood, because 6 they devote several pages to the differences in the 7 model plant, what those issues are. And they are, I 8 might say, incremental to what's already in the record, 9 and the model plant data is already in the record as an 10 admitted exhibit for that. 11 So I don't believe that there's any prejudice 12 to the argument about whether there are six, four, seven 13 of a certain component at the model plant to the 14 Department. 15 HEARING OFFICER ORTH: I'll let Ms. Katz speak 16 now. My -- my memory was, though, that all the 17 Department was doing when it addressed the model plant 18 statements from NMOGA was pointing out that NMOGA wasn't 19 supporting those statements with data. 20 Ms. Katz, do I have that wrong? 21 MS. KATZ: Yes. There were two different 22 model plants. There was the CTG model plants, and those 23 were NMOGA's own model plants, and so we're not speaking 24 about CTG model plants. But NMOGA's model plants, we 25 said that there wasn't the data, they didn't show how
2380 1 HEARING OFFICER ORTH: Yes. Sorry. 2 Ms. Fox? 3 MS. FOX: Thank you, Madam Hearing Officer. 4 It's my understanding that NMOGA was offering 5 the two spreadsheets as exhibits so those would be 6 excluded from evidence. 7 And I agree with Mr. Rose that what we said in 8 our motion is that with respect to the slides, that they 9 should be excluded. They are demonstrative exhibits so 10 they won't technically come in, but in all associated 11 testimony. 12 And so while Mr. Hiser can make an offer of 13 proof, that doesn't mean he gets to offer all the 14 testimony in support. It's only an offer of proof. 15 HEARING OFFICER ORTH: That's -- that's 16 what -- if I didn't say that clearly, thank you, 17 Ms. Fox. 18 Let's see. I see Ms. Paranhos. 19 MS. PARANHOS: I'm just on the screen just so 20 that I'm here, but I understand what you're saying, 21 Madam Hearing Officer, and I appreciate what your ruling 22 is. 23 MR. HISER: I think, Madam Hearing Officer, 24 that we think that the proposal to exclude the NMOGA 25 model plant, which Mr. Smitherman addresses repeatedly	2382 1 they got the numbers, and my understanding is that those 2 spreadsheets are -- show that, and that should have been 3 provided as part of their direct testimony. 4 MR. HISER: Very (unintelligible and/or 5 inaudible) Madam Hearing Officer. 6 The EPA's basis in the CTG document for the 7 model plant also is not in the record in that same way, 8 and so in the interest of a level playing field, I think 9 it's perfectly appropriate for there to be a discussion 10 about whether the model plant has six or seven of a 11 certain component and what the emissions impacts of that 12 are. And that's something that's useful for the Board 13 to understand. 14 HEARING OFFICER ORTH: Okay. 15 MS. KATZ: However, EPA -- the information is 16 in EPA's record. So we don't have to go create it 17 ourselves. And that is the problem with NMOGA's model 18 plant, and they are -- they are providing spreadsheets 19 now that show how they got where they did, and that was 20 not obvious or clear from what they had presented in 21 their direct testimony. 22 HEARING OFFICER ORTH: All right. Thank you. 23 Ms. Fox? 24 MS. FOX: Thank you, Madam Hearing Officer. 25 You know, as I'm looking through the other

2383 1 demonstrative slides that we moved to exclude, I am 2 seeing that some of the data in some of the other slides 3 besides the two that Ms. Katz referenced is data from 4 the spreadsheets that are excluded. 5 And I'm not able to go through all these 6 slides right now very quickly, although I can later 7 during a break, to identify those which reflect data in 8 the spreadsheets that are being excluded, and so those 9 slides should be -- at least the testimony around those 10 slides should be excluded, as well. 11 MR. HISER: Madam Hearing Officer -- 12 HEARING OFFICER ORTH: All right. 13 MR. HISER: -- those spreadsheets are merely 14 the same thing as what's in Mr. Smitherman's direct 15 testimony, and therefore, the fact that they may also be 16 in the spreadsheet doesn't change the fact they've 17 already been testified to and admitted. 18 HEARING OFFICER ORTH: All right. Thank you. 19 It seems that we may need further discussion 20 as the -- as the testimony is offered. And I am not 21 sure we're going to be able to do any more as part of a 22 general discussion before we actually get to 23 Mr. Smitherman and the slides. 24 So, Mr. Hiser, are there other -- other things 25 we can do before we actually get to the testimony?	2385 1 the petitioner and the other participants in this 2 proceeding, they would have to schedule another day of 3 hearing at a time that allows for mitigation of the 4 surprise. 5 So it's not something they can do by Friday. 6 MR. HISER: So, Madam Hearing Officer, one 7 last question before you move on. 8 My understanding is that we are to use the 9 information in Mr. Smitherman's testimony as it was in 10 his direct. We may draw reasonable extensions from that 11 information, because otherwise you're also saying that 12 NMOGA can only repeat what it said previously without 13 any opportunity for surrebuttal. 14 Is that your intent? 15 HEARING OFFICER ORTH: No. My intent is to 16 carve off that surrebuttal which is based on surprising 17 information that should have been provided earlier in 18 this process. 19 MR. HISER: Subject to that understanding, and 20 understanding that we will certainly be challenging that 21 characterization before the Board, we will do that, and 22 where we believe appropriate, we'll be happy to offer 23 proof at that time. 24 HEARING OFFICER ORTH: Thank you very much. 25 Ms. Fox?
2384 1 MR. HISER: I guess, Madam Hearing Officer, 2 I'm not sure what other things you're asking us to do. 3 HEARING OFFICER ORTH: So when you put on 4 Mr. Smitherman on -- on LDAR, I would like to navigate a 5 distinction here between testimony he would be giving 6 that was based on data already in the record and 7 testimony that he might have given based on data that 8 was presented only on September 23rd. 9 When we get to the testimony related to the 10 spreadsheets and the other new information from 11 September 23rd, I'd like you not to go through 12 Mr. Smitherman's testimony, but instead to offer a 13 description of what he would be testifying to were it 14 not excluded on the basis of surprise. 15 MR. HISER: I guess, Madam Hearing Officer, 16 subject to, I think, our ability to request the Board to 17 review this decision to essentially exclude much of the 18 cost information from industry about one of the 19 significant provisions of this rule, which is our 20 understanding of what you're attempting to do. 21 HEARING OFFICER ORTH: Yes. Because my -- I 22 understand completely the Board is the decision-maker in 23 this matter, but I think it's important that the Board 24 understand that if, in fact, they're to take this new 25 and surprising data into account, that in fairness to	2386 1 MS. FOX: Madam Hearing Officer, sorry to 2 prolong this, but thank you. 3 So I think in the interest of efficiency -- I 4 think it would be helpful if we did identify the 5 specific slides in NMOGA's proffered surrebuttal that 6 reflect data in the spreadsheets that have been 7 excluded, and then I think that we won't get into 8 arguments during Mr. Smitherman's presentation whether a 9 particular slide is allowed in or not or whether 10 particular testimony on that slide is allowed in or not. 11 And during -- during a break, you know, we 12 can -- we can endeavor to identify those slides that 13 reflect information in the spreadsheets that have been 14 excluded. 15 HEARING OFFICER ORTH: Right. Thank you very 16 much. 17 As I understand it, we're going to turn, then, 18 from this discussion. We've had public comment. We're 19 going to go to Ms. Devore of the National Park Service. 20 I see Ms. Devore. 21 Thank you for coming onto the screen, 22 Ms. Devore. 23 I don't know if I've sworn you before. 24 MS. DEVORE: You swore me in when Mr. Vimont 25 gave his testimony last Monday, but I --

2387 1 HEARING OFFICER ORTH: All right. 2 MS. DEVORE: -- if you feel more comfortable. 3 HEARING OFFICER ORTH: No, no. That's fine. 4 You're still under oath. 5 LISA DEVORE 6 (Relating to Topic Orders 1, 2 and 24) 7 having been first duly sworn or affirmed, was 8 examined and testified as follows: 9 DIRECT TESTIMONY 10 HEARING OFFICER ORTH: Please proceed with 11 your presentation. 12 Do you need screen sharing? 13 MS. DEVORE: Yes, I do. Yes. 14 HEARING OFFICER ORTH: All right. 15 THE REPORTER: Excuse me one second. I'm 16 having technical issues. 17 Okay. Thanks. I don't know why that keeps 18 happening. 19 MS. DEVORE: Before I share my screen, I'm 20 going to be referring in this rebuttal and surrebuttal 21 to the Park Service -- 22 THE REPORTER: Excuse me one second. Sorry 23 about that. It happened again. 24 HEARING OFFICER ORTH: Cheryl, you might want 25 to turn off your video.	2389 1 So I wanted to make sure that the Board Member 2 had a clear picture of this. I don't know what advice 3 the Board's counsel will give them as to how they should 4 address this issue. But I think that's something 5 between the Board and its counsel. 6 HEARING OFFICER ORTH: I agree with you, 7 Mr. Rose. 8 Thank you, Member Garcia. 9 Let's see here. 10 Oh, I have a question from Member -- 11 Vice-Chair Trujillo Davis. If you'd like to put it on 12 the record, go ahead, Vice-Chair. 13 VICE-CHAIR TRUJILLO DAVIS: Yes. I was just 14 kind of following Member Garcia's question here. 15 Do -- does the Board need to make a decision? 16 Do we need to vote on a decision here? 17 I'm just kind of curious about our -- our next 18 steps. 19 HEARING OFFICER ORTH: So my suggestion would 20 be to allow your counsel, who I believe has been on the 21 platform for the entirety of the hearing, to consider 22 this question and to advise the Board. I'm not going to 23 ask her to jump onto the discussion onto the record 24 right -- right this second. She may want to offer her 25 counsel to you privately, which is certainly an option
2388 1 THE REPORTER: No. It's in my software. 2 HEARING OFFICER ORTH: Oh, okay. 3 THE REPORTER: Yeah. Can we just take two 4 minutes and let me restart it? 5 HEARING OFFICER ORTH: Certainly. 6 THE REPORTER: Thank you. Sorry. 7 (Proceedings in brief recess.) 8 HEARING OFFICER ORTH: Cheryl, are you back, 9 or no? 10 THE REPORTER: Yes, I am. 11 HEARING OFFICER ORTH: You are. Okay. 12 So I was just responding to a question from 13 Member Garcia about posthearing submittals. 14 Let's see. Mr. Rose, do you have something to 15 offer? 16 MR. ROSE: Yes. And that was in response to 17 Board Member Garcia's comments. 18 My -- while this can be raised in posthearing 19 submittals, my understanding under the Board's rules is 20 they can review your determination on admissibility of 21 the evidence even before posthearing submittals are due, 22 depending on if NMOGA intends to raise them directly to 23 the Board. So I -- I mean, given the nature of this, 24 they may be raised even before we get to posthearing 25 submittals.	2390 1 for her. 2 So when we next break, I will reach out to 3 your counsel and come back with an answer, or she will 4 come back with an answer, one way or another. 5 VICE-CHAIR TRUJILLO DAVIS: Okay. Thank you 6 very much. 7 HEARING OFFICER ORTH: Sure. 8 MR. HISER: I just wanted to reserve my 9 ability to make a formal motion if appropriate. 10 HEARING OFFICER ORTH: All right. Thank you 11 very much, Mr. Hiser. 12 Let's see. Ms. Devore, we are back to you. 13 If you would spell your name for the 14 transcript, please, and then proceed with your 15 statement. 16 MS. DEVORE: Okay. So Lisa, standard 17 spelling, and then Devore, D-E-V-as-in-Victor-O-R-E. 18 And I was about to say before technical issues 19 and logistical conversation that I will be referring to 20 the National Park Service's exhibits from rebuttal, so 21 Exhibits B, C, D and E, as well as our notice of 22 rebuttal statement. And I may also need to pull up some 23 of the -- let's see. It's the Department's Rebuttal 24 Exhibit 23, just depending on the conversation and 25 questions.

2391 1 So with that, I am going to go ahead -- I'm 2 going to formally introduce myself. So I'm Lisa Devore 3 with the National Park Service. I am the Intermountain 4 Region's air quality specialist. The Intermountain 5 Region spans from Texas to Montana. So I manage the 6 states within those regions for air quality issues. 7 I have over 15 years of experience in the air 8 quality -- in the air pollution control industry. I 9 came from the Department -- the Colorado Department of 10 Public Health and Environment, where I worked on policy 11 issues, rulemakings and engineering analyses. So I held 12 multiple positions with that department, including 13 engineer, policy planner. 14 I am a mother. I have a bachelor of science 15 in environmental engineering and a master of science in 16 civil engineering from the University of Colorado at 17 Boulder, and I hold my professional engineering license 18 in the State of Colorado. 19 I also worked on the recent rulemaking in 20 Colorado for engines 1,000 horsepower and above. 21 So with that, I'm going to share my screen. 22 Can we all see -- it should say The data 23 support the need for this rule? 24 Anybody -- 25 VICE-CHAIR TRUJILLO DAVIS: Yes. We see it.	2393 1 that. And that's why I may need to pull up their 2 tables. 3 And then the turbine standards also 4 subsequently changed. So the ones I'm going to show you 5 here are the outdated, but I can still refer to it in 6 surrebuttal where we're at now. 7 So the ones that were proposed have been 8 similar, and there's been a lot of conversation about 9 the similarities and some of the dissimilarities of the 10 standards in other states, including Texas and 11 Pennsylvania. There's also standards that are more 12 stringent. So we have standards in California that are 13 more stringent. Some of the standards in Texas are more 14 stringent for nonattainment areas. 15 I know we're treading a line here where we're 16 trying to get -- you know, New Mexico is trying to get 17 ahead of being nonattainment, but it's important to be 18 thoughtful about, you know, coming back again and again 19 and what kind of standards you may be looking at and 20 what's also possible. 21 So, you know, we have Colorado just to the 22 north. From a lot of the information from New Mexico, 23 there is a lot of similarities between Colorado's recent 24 rule and what's being proposed today. However, there 25 are a couple of stark differences.
2392 1 MS. DEVORE: Okay. I just want to make sure 2 before I go ahead. So I'm jumping in. 3 So Mr. Vimont last Monday presented some of 4 this presentation, and we are now continuing this for 5 the engines part of this conversation for rebuttal and 6 surrebuttal. 7 So just going back to -- I'm just going to 8 summarize this slide real quick, just to have everybody 9 remember how we discussed Carlsbad Caverns and how the 10 air quality at that park frequently exceeds the 11 standards for ozone. 12 The air quality there is actually on the order 13 of cities like Santiago, Chile and Mexico City, Mexico. 14 And I think those are some -- something that's important 15 to note for all of us to remember when we're having 16 these conversations about all these aspects of this 17 rule, what's at stake here. 18 So then the information presented highlights 19 the need for both NOx and VOC reductions. And at the 20 time of the rebuttal, we had thought that the proposed 21 engine and turbine standards were going to be what -- 22 like 1,000 horsepower and up for engines, and then -- 23 and there was only one category for that, and they were 24 lower than what NMED came out with in their rebuttal 25 statement. So I'm going to talk a little bit about	2394 1 All right. So -- I don't know why I cannot 2 get rid of this. Okay. There we go. 3 So, you know, based on the example from 4 Pennsylvania's requirement, I'm not going to really talk 5 a lot about this, because we're in a different place 6 now, but, you know, rich-burn engines is -- it's easier 7 to control rich-burn engines than it is to control 8 lean-burn engines. I'll completely agree to that fact. 9 And so, you know, some of the lower limits for the 10 rich-burn engines are appropriate. 11 One thing I would like to note, and kind of 12 combining rebuttal and surrebuttal here, but we don't -- 13 I would strongly encourage New Mexico to come back and 14 look at standards for engines lower than 15 1,000 horsepower with the exception of the 16 500 horsepower that remains on the books for the future. 17 So I think at this point, you know, there's so much 18 going on with this hearing, just sorting out some of the 19 issues with the engines that are on the books for over 20 1,000 horsepower, and we do not have any concerns with 21 the 500 rich -- or 500 rich-burn. It's really for more 22 of the specific categories. 23 So for lean-burns, we do assert that it's 24 possible to control again under 1,000 horsepower, and we 25 are not bringing a lot of this back up at this point.

2395 1 We just want to reassert that New Mexico should go back 2 and visit these in the future. I would note that there 3 were plans for Colorado to go back and visit smaller 4 engines. So I encourage New Mexico to keep an eye on 5 that rulemaking whenever that occurs. It should be 6 fairly soon. 7 And as far as turbines go, we're also not 8 going to talk a lot about this today. Unfortunately, 9 the staff member that was more familiar with this topic 10 is -- had surgery on Monday and can't be here, but we 11 still encourage New Mexico to look at revisiting 12 turbines in the future. 13 Right now a lot of the limits are -- do -- 14 like as NMOGA -- as some of their exhibits, you know, 15 they've been back and forth, but is New Mexico trying to 16 just duplicate the requirements of Quad K, or are you 17 trying to go further? So I think that's important to 18 think about. 19 And some other notes that I want to make is 20 that the removal -- and now I'm going to move to the 21 table so we can -- we can look at that. Zoom in a 22 little bit. 23 But -- so a couple of notes here is that -- so 24 the removal of "or installed" -- so for these areas that 25 are subject to this rule, this means that the engines	2397 1 NOx and CO. So I will admit that I think that's 2 appropriate, just because we're really trying to get at 3 NOx here. 4 And there does need to be a limit on CO so the 5 operators are applying their controls properly and we're 6 not seeing levels of CO shift into high realms, but at 7 the same time we don't want it so low that it's not -- 8 it's not technically feasible for operators to work 9 their controls properly. 10 So those are the comments that I had. And 11 with that -- let me see -- let me make sure I didn't 12 miss anything here. 13 You know, I just want to really re-emphasize 14 that we think it's really important those couple of 15 things be strongly reconsidered in the final rule by the 16 Board. So again the addition -- "installed" needs to 17 come back, and it actually applies for engines and for 18 turbines in this case. So, you know, if it isn't taken 19 out, then -- sorry. If it isn't added back in, then you 20 can move those type of equipment into these areas and 21 they won't be subject to the rule. So I think that's a 22 really important aspect to think about. 23 We just want to also point out that the 24 modeling was -- originally assumed, you know, much 25 greater reductions, and, you know, the revised standard
2396 1 from other places can still be moved into these areas, 2 and we'll be looking at -- they won't be subject to 3 these rules. And so I think it's that -- the removal of 4 this language is a really key point. 5 You know, in Colorado we've been working on 6 this rule -- or on a similar rule, tried to be really 7 thoughtful about relocation and engines not being moved 8 around into these areas that have these ozone issues to 9 become dumping grounds for old engines. And those can 10 come from out of state, or they can come from other 11 areas in New Mexico and then be subject to this rule. 12 So I think that's really something that we feel strongly 13 should be pulled back into the rule and not be removed. 14 And then the second point I'd like to make is 15 that this 2 grams per horsepower-hour here for 16 four-stroke lean-burn engines -- so in Colorado the 17 standard for all lean-burn engines is 1.2 grams per 18 horsepower-hour, and so I think that should be the 19 ceiling. And right now this number is higher. We don't 20 have any opinion on the carbon monoxide standard or 21 the -- the VOC standard. 22 So those are -- those match this -- this table 23 doesn't match Colorado, but some of the proposed numbers 24 match Colorado. So the 2 grams per horsepower-hour for 25 CO matches Colorado. You have to have a balance between	2398 1 is much lower. And we need to reduce both pollutants, 2 so NOx and VOCs, if we want to see is the ozone levels 3 also be reduced in Carlsbad and in other areas of New 4 Mexico that are close to the ozone standards. 5 So with that, I will take questions. 6 And I will stop sharing my screen if I can 7 figure out what's going on here. 8 HEARING OFFICER ORTH: Thank you, Ms. Devore. 9 If you are a party, counsel and have questions 10 of Ms. Devore, please turn on your camera. 11 I see Mr. Rose. 12 Mr. Rose? 13 MR. ROSE: Again, yes, Madam Hearing Officer. 14 I just need some clarification from Ms. Devore, if 15 that's possible. 16 CROSS-EXAMINATION 17 BY MR. ROSE: 18 Q. My understanding is you are testifying on 19 behalf of the Park Service; is that correct? 20 A. Yes. The National Park Service. 21 Q. And I'm just wondering since I didn't see an 22 attorney enter an appearance in this matter on behalf of 23 the Park Service, has your testimony been vetted with 24 management of the Park Service before it's been offered, 25 and does it represent the official position of the Park

2399 1 Service? 2 A. We did report out that we would be testifying 3 in this hearing to National Park Service management. 4 Yes. And we have -- we have coordinated with -- so for 5 the Park Service we don't call them lawyers per se. 6 They're solicitors that help with the Department of the 7 Interior, and we have coordinated with them, as well. 8 Q. Okay. And they have an office in Albuquerque 9 so -- and there are solicitors here. I was just curious 10 as to -- as to whether it was your testimony or had been 11 vetted from -- through management and been approved as 12 the official position of the Park Service. 13 I have no further questions. 14 HEARING OFFICER ORTH: All right. Thank you. 15 I see Mr. Swift. 16 Mr. Swift? 17 MR. SWIFT: Thank you, Madam Hearing Officer. 18 CROSS-EXAMINATION 19 BY MR. SWIFT: 20 Q. Ms. Devore, my name is Whit Swift. I am 21 counsel for the Gas Compressor Association. 22 And I just had one again at least starting off 23 more clarifying. 24 You discussed that -- and in your Exhibit B 25 you had included some recommended standards for those	2401 1 that folks from the Park Service are quite busy. 2 You expressed some concern about the 3 installation -- "or installed" and how that was removed 4 from, I believe, Table 1 and Table 2 and a concern that 5 that might allow other turbines or engines to be brought 6 into an area and not be subject to the rules; is that 7 correct. 8 A. Yes. 9 Q. And wouldn't those units still regardless of 10 where they were first installed -- still have a 11 construction or reconstruction date on them? 12 A. They would. But -- if so they're brought in 13 from out of state, then it becomes more difficult for 14 the state to figure out if they're going to be subject 15 to the rule or not. 16 Q. Yes. 17 But isn't it the obligation of the owner or 18 operator of that unit to provide that information to the 19 state as part of its either permitting or notice 20 provisions? 21 A. It would be. 22 Q. Okay. Thank you. 23 But if that date is available, then that 24 would -- that would answer your concern about making 25 sure that they were appropriate classified as between
2400 1 smaller size category engines, that is generally under 2 1,000 horsepower, but then in your discussion in your 3 testimony that you've just given us, you've represented 4 those as -- as, I guess, things that you want New Mexico 5 to consider in a future proceeding, but you're not 6 necessarily recommending them as part of this particular 7 rulemaking; is that correct? 8 A. Yes. So we have changed our position on that 9 fact. 10 Q. Okay. All right. Well, with that 11 clarification, I did have some questions for you about 12 those smaller engine source -- or size categories, but I 13 will not -- in the interest of keeping you -- keeping 14 things moving along, I won't drag you through them, and 15 I'll keep things moving here with the hearing. 16 Thank you very much for your testimony. 17 HEARING OFFICER ORTH: Thank you. 18 Mr. Hiser? 19 MR. HISER: Yes. 20 CROSS-EXAMINATION 21 BY MR. HISER: 22 Q. Thank you, Ms. Devore. 23 I'm Eric Hiser, and I represent the New Mexico 24 Oil and Gas Association. 25 Appreciate your appearing here today. I know	2402 1 Tables 1 and 2, would it not? 2 A. But -- I think, yeah. 3 MR. HISER: Thank you. 4 I don't have any other questions. Appreciate 5 it. 6 HEARING OFFICER ORTH: Okay. Thank you. 7 I think I saw Mr. Baake briefly. 8 Are there any other questions from -- oh, 9 there you are, Mr. Baake. 10 MR. BAAKE: Yes. 11 HEARING OFFICER ORTH: Go ahead. 12 MR. BAAKE: I just had two brief questions. 13 If I could have sharing privileges. 14 CROSS-EXAMINATION 15 BY MR. BAAKE: 16 Q. Let's see. I just wanted to look at the 17 Colorado language. Let's see if it works. 18 I don't know if that's -- is this -- can you 19 see the Colorado language there? 20 A. Yes. 21 Q. So I appreciate your testimony, Ms. Devore. I 22 just wanted to make sure I understood two things. 23 You mentioned you worked on this Colorado 24 rule, right? 25 A. Yes.

2403 1 Q. That was last year? 2 A. Last year. It was really three years long, 3 but yes. We ended up in rulemaking last year. 4 (Simultaneous discussion.) 5 Q. And I wanted to ask first about this issue 6 about the installation date. So -- and I'm not familiar 7 with the rule. I didn't work on it. 8 But as I -- it seems to me that Colorado does 9 make it based on the installation data that it -- 10 you're -- that a newly installed engine is considered 11 subject to the standards; is that correct? 12 A. Yes. 13 Q. So they use the word "placed in service." So 14 it -- in service date. Okay. So I think that's 15 helpful. 16 And the second, I just wanted to make sure I 17 understood, too. 18 So with this -- these four-stroke lean-burn 19 engines, I think that I understood you to say that New 20 Mexico had proposed a standard of 2 grams 21 horsepower-hour; is that correct? 22 A. For the class size, yes. For one of the class 23 sizes, um-hum. 24 Q. And Colorado has it at 1.2? 25 A. I feel like that should be the ceiling, if not	2405 1 HEARING OFFICER ORTH: One at a time. 2 MR. ROSE: The Hearing -- the court reporter 3 is -- seems to be having problems discerning who is 4 saying what to whom. 5 So that was the only question, is to where in 6 the record is it so that the record is clear what you're 7 talking about, because the written transcript only 8 refers to the screen, and the Board won't have in front 9 of them what you're referring to. 10 MR. BAAKE: Yeah. Thank you, Mr. Rose. 11 That's a -- that's a good point for the record. 12 So I had -- I had just pulled up the 5 13 Colorado Code Regulations Section 1001-9EI. I pulled it 14 up online, but I think that it's -- I don't think 15 there's any dispute that that's what the regulation is. 16 MR. ROSE: And I assume that's Reg 7 or -- 17 it's referred to, I think, throughout the hearing as 18 Colorado Reg 7? Is that what -- or is this another 19 Colorado reg? 20 MS. DEVORE: It's Reg 7. 21 MR. ROSE: Okay. 22 That's all I needed. Thank you. 23 MR. BAAKE: And I just put the code section in 24 the -- in the chat if any -- thank you. 25 HEARING OFFICER ORTH: Mr. Baake, I'm sorry.
2404 1 lower, especially when -- 2 Q. Okay. 3 A. -- a need to have a -- you know, room for 4 Alternative Compliance Plans, which is the case for both 5 Colorado and New Mexico's rules. 6 Q. Okay. That's -- that's very helpful. So we 7 should probably be taking a look at what they did in 8 Colorado. 9 All right. Thank you so much, Ms. Devore. 10 MR. ROSE: Madam Hearing Officer, I just -- 11 HEARING OFFICER ORTH: Yes, Mr. Rose. 12 MR. ROSE: Is the exhibit that Mr. Baake 13 showed her -- is that in the record somewhere? 14 MS. DEVORE: That's one of New Mexico's 15 exhibits. 16 MR. ROSE: Okay. 17 MS. DEVORE: Look at their list to see -- 18 (Simultaneous discussion.) 19 MR. ROSE: -- record is clear what we're 20 referring to here. 21 (Simultaneous discussion.) 22 MR. BAAKE: I just pulled this up. This is 23 the -- 24 THE REPORTER: Excuse me. One at a time, 25 please.	2406 1 Chat is only enabled to the host. 2 If you would, I'll read it. It's 5 Colorado 3 Code Regs Section 1001-9-E- -- I imagine that's an I. 4 (Simultaneous discussion.) 5 HEARING OFFICER ORTH: Oh, it's a -- 6 MR. ROSE: Madam Hearing Officer, the chat's 7 been enabled for everyone. So we can all see it. 8 HEARING OFFICER ORTH: Okay. Great. Thank 9 you. 10 Anything further from any counsel or parties? 11 No? 12 I'm going to turn to questions from the Board. 13 While I'm doing that, if you're on the 14 platform as an attendee and would have a question, 15 please reach out in the chat. 16 EXAMINATION 17 BY THE BOARD: 18 HEARING OFFICER ORTH: Madam Chair, do you 19 have questions of Ms. Devore? 20 CHAIR SUINA: Yes. Thank you, Madam Hearing 21 Officer. I just have a few follow-up for Ms. Devore. 22 Thank you again for your testimony, 23 Ms. Devore. Appreciate it. 24 How many national parks are also in Colorado? 25 MS. DEVORE: There are four national parks in

2407 1 Colorado. 2 CHAIR SUINA: And can you just tell -- share 3 with us the general location of those parks? Like is it 4 in the north? South? 5 MS. DEVORE: So there's Rocky Mountain 6 National Park, which is just to the northwest of Denver. 7 And then there's Black Canyon of the Gunnison, which is 8 just to the southeast -- southeast of Grand Junction, in 9 the middle of the state. And then there's the Great 10 Sand Dunes National Park and Preserve, which is just to 11 the west of Pueblo, so it's into -- into like kind of 12 southwest -- south -- mid-portion of the state. And 13 then Mesa Verde, which has actually been discussed a few 14 times in this rulemaking, which is in the southwest 15 portion of Colorado, on the border of New Mexico. 16 CHAIR SUINA: Thank you for that, Ms. Devore. 17 And I just ask that so I can get an idea as to where the 18 general location of the parks are in Colorado. 19 So in the Colorado rulemaking, did the 20 National Park Service also have similar stances as, I 21 think, Mr. Rose had mentioned from the National Park 22 Service perspective regarding more stringent or stricter 23 rules for Colorado? 24 MS. DEVORE: So the National Park Service 25 participated in the stakeholder process for Colorado's	2409 1 a large oil and gas basin, as well. And the Colorado 2 National Monument, which is pretty much in Grand 3 Junction, also faces some similar challenges. So we are 4 seeing -- and Mesa Verde is impact -- is impacted by oil 5 and gas from that -- from the basin next to it, as well. 6 So we are facing a lot of these dilemmas, 7 albeit on different scales, but we do see them in other 8 parks in Colorado. 9 CHAIR SUINA: Okay. Thank you. 10 And then so just in terms of the National 11 Park's position on this, as Mr. Rose mentioned earlier, 12 is -- so as -- as ongoing activities or, I guess, 13 initiatives for the National Park Service, is there 14 going to be additional -- and maybe -- that's maybe too 15 far broad, but let me -- let me rephrase that. 16 As Carlsbad Cavern is -- I think was a part of 17 a lot of the testimony earlier on, but, as well, I think 18 you referred to it in your testimony this morning as the 19 national park, that you've been -- you -- the National 20 Park Service has some additional data on -- do you 21 foresee that this rule would help the National Park 22 Service's air quality within the Carlsbad area, Carlsbad 23 Caverns area? 24 MS. DEVORE: All -- all pollution reductions 25 for NOx and VOCs will improve -- will improve ozone. You
2408 1 engine rulemaking. They ultimately did not file to be a 2 party, I think because of some of the differences in the 3 language and the way that that rule was approached. 4 There were similar comments about lower standards for 5 future rulemakings. So Colorado at the time, the way 6 things work is the engines with lower horsepower weren't 7 considered as part of the scope of that rulemaking. 8 So if something's not part of the scope -- and 9 other parties did this, too, where, oh, we have comments 10 about this, and it's like, well, we're only looking at 11 this scope, and so we've -- Colorado at the time said, 12 okay, we'll think about that for the future. So it's 13 similar to what I echoed today for New Mexico. 14 CHAIR SUINA: Thank you for that, Ms. Devore, 15 that clarification. 16 So in some of the national parks in Colorado, 17 are there similar concerns in terms of air quality 18 because of oil and gas activities, as well? 19 MS. DEVORE: So for Rocky Mountain National 20 Park -- and then I should also mention there are two 21 national monuments in Colorado. I apologize, I didn't 22 say that a little earlier here, the monuments and the 23 park. 24 So Dinosaur National Monument is in the 25 northwest corner of Colorado, and they're very close to	2410 1 know, I think that more needs to be done. You know, 2 there's like a lot of different source sectors that need 3 to be examined. But oil and gas is a part of that pie, 4 and it will improve ozone if this rule is -- 5 CHAIR SUINA: Okay. 6 MS. DEVORE: -- comes into effect. 7 CHAIR SUINA: Okay. Thank you, Ms. Devore. 8 That's all I have for now. 9 HEARING OFFICER ORTH: Thank you. 10 Vice-Chair Trujillo Davis? 11 VICE-CHAIR TRUJILLO DAVIS: Yes. I only have 12 a couple questions. 13 Thank you, Ms. Devore, for taking time to chat 14 with us today. 15 Is there a park-specific -- or National 16 Park-specific initiative to reduce ozone in all national 17 parks? 18 MS. DEVORE: Not a specific initiative, but 19 the Air Resources Division of the National Park Service 20 works on air quality issues for the Park Service, and 21 that division, which is a national office that I work 22 with, believes that ozone and -- you know, so working on 23 air quality issues that impact our parks is a priority 24 for that division. 25 VICE-CHAIR TRUJILLO DAVIS: So outside of

2411 1 participating in rulemaking in various states, what 2 other activities has the National Park taken up to 3 reduce ozone in their parks? 4 MS. DEVORE: So one example would be for Rocky 5 Mountain National Park, and actually there is a lot of 6 parks throughout the nation. I just couldn't speak to 7 those as specifically. But the Park Service has worked 8 hard to do things like Clean Air Fleets, and there 9 are -- a lot of parks have Green Teams to reduce impacts 10 from within the parks on ozone and for -- you know, 11 off -- like we've heard a lot during this hearing, so 12 air pollution spans oftentimes multiple issues, you 13 know. So you may see like greenhouse gas reductions and 14 also improve ozone. 15 In Rocky Mountain National Park we have issues 16 with nitrogen deposition which comes from ammonia and 17 from nitrogen oxides. So we try to look at that 18 holistically. 19 And then parks oftentimes -- our larger parks 20 undergo the green opportunities to reduce their impacts 21 to said issues such as ozone. 22 VICE-CHAIR TRUJILLO DAVIS: So would you say 23 that participating in rulemaking is probably one of your 24 biggest initiatives to reduce ozone? 25 MS. DEVORE: I think it -- yes, because	2413 1 MEMBER BITZER: Yeah. 2 Thank you for your testimony. 3 I think it was counsel, Mr. Rose, who had 4 asked if your presentation was the official position of 5 the Park Service. 6 And was that a yes answer, that you gave? 7 MS. DEVORE: Yes. 8 MEMBER BITZER: That's all I have. Thank you. 9 MS. DEVORE: Okay. Thank you. 10 HEARING OFFICER ORTH: Okay. Thank you. 11 Member Garcia? 12 MEMBER GARCIA: Yes. Thank you. 13 And thank you for being with us today, 14 Ms. Devore. 15 You made a statement in the very beginning 16 which really struck me, and I want to make sure I got it 17 correctly. 18 Did I hear you say that the air quality around 19 Carlsbad National Caverns was on the order of the air 20 quality in Santiago, Chile and Mexico City? Did I hear 21 that correctly? 22 MS. DEVORE: Yes. 23 MEMBER GARCIA: Wow. I travel to Mexico City 24 fairly often, and it's pretty horrible. So -- 25 MS. DEVORE: Yeah.
2412 1 oftentimes, you know, the parks don't -- aren't the 2 significant contributors to the ozone or whatever issue 3 may be impacting that park. So we try to participate in 4 hearings. 5 Another example would be for regional haze, 6 where we are participating across the US, that's 7 stipulated in that rule for, you know, states when 8 they're working on their plans about which sources 9 contribute to regional haze, which is basically 10 visibility at the parks. 11 VICE-CHAIR TRUJILLO DAVIS: Okay. 12 And the National Park Service is part of the 13 Department of Interior; is that correct? 14 MS. DEVORE: (Nods head.) 15 VICE-CHAIR TRUJILLO DAVIS: And BLM is also 16 part of that, as well? 17 MS. DEVORE: (Nods head.) 18 VICE-CHAIR TRUJILLO DAVIS: Okay. I just 19 want -- was trying to understand that structure. 20 So thank you. I don't have any more 21 questions. 22 MS. DEVORE: Okay. No problem. Thank you. 23 HEARING OFFICER ORTH: Thank you. 24 Member Cates? 25 Member Bitzer?	2414 1 MEMBER GARCIA: -- that's -- that's quite a 2 statement. 3 Do you mean in terms of a particular 4 constituent or just general smog? 5 MS. DEVORE: So in terms of ozone. So we're 6 seeing the frequency of the elevated ozone levels in 7 Carlsbad. It's -- it's bad as those other two cities 8 that you just mentioned, in terms of like -- in VOC 9 levels. 10 MEMBER GARCIA: Thank you. 11 MS. DEVORE: Um-hum. 12 HEARING OFFICER ORTH: Member Honker? 13 MEMBER HONKER: Thanks for your testimony, 14 Ms. Devore. 15 I have no questions. 16 HEARING OFFICER ORTH: All right. Thank you. 17 Ms. Devore, is there anything else at all you 18 would add based on the questions you've been asked by 19 the parties and the Board? 20 MS. DEVORE: I think the only other thing I'd 21 add is that the -- so the counselor -- Board Member 22 Davis' question about how the Park Service participates. 23 I did neglect to mention that we also participate in 24 what's called Prevention of Significant Deterioration 25 reviews. So that's when large facilities are built

2415 1 within a certain distance from national parks. We do 2 weigh in on those permitting processes. 3 So -- and then we also work on what's called 4 National Environmental Protection -- or Policy Act, so 5 when we see activities within a certain distance of 6 national parks. And this can range from oil and gas 7 leases to mining leases, are a couple of examples. 8 That -- that rule is very broad. For example, there's a 9 highway near one of our parks in Arizona, and we give 10 input on to -- into those processes, as well. 11 Just for additional context from other things 12 that we work on with air quality priorities. 13 HEARING OFFICER ORTH: Thank you. 14 Vice-Chair Trujillo Davis, anything further 15 based on that? 16 VICE-CHAIR TRUJILLO DAVIS: No. 17 Thank you for the additional information. 18 HEARING OFFICER ORTH: Thank you. 19 Thank you very much, Ms. Devore. 20 So let's see. The two parties I remember with 21 rebuttal or surrebuttal to the National Park Service was 22 the Department and NMOGA. 23 I will certainly give you the choice, 24 Mr. Hiser and Ms. Katz, to do this later, if you'd like 25 to leap into LDAR sooner rather than later, or you can	2417 1 MS. KATZ: Yes. We can -- 2 HEARING OFFICER ORTH: I'm sorry. 3 (Simultaneous discussion.) 4 MR. BAAKE: Yes. This is David Baake. 5 I wanted to flag. I believe we had mentioned 6 that we did want to put on a -- I guess it's a 7 surrebuttal witness to the changes that were made in 8 rebuttal version of the NMED. The reason -- it's not 9 going to take very long, but our witness is not 10 available today. He would need to -- it's Dr. Daniel 11 Orozco, I believe you had mentioned. And he would 12 testify tomorrow. 13 HEARING OFFICER ORTH: That's fine. That's 14 fine. I'll make a note to loop back to Mr. Orozco. 15 So, Ms. Katz -- 16 (Simultaneous discussion.) 17 MR. HISER: -- did come, Madam Hearing 18 Officer, we prefer to wait until it's all over so that 19 we can respond to it. 20 HEARING OFFICER ORTH: All right. Thank you. 21 Ms. Katz? 22 MS. KATZ: I guess that's probably -- yeah. 23 We should probably wait, as well, then. 24 HEARING OFFICER ORTH: All right. Great. 25 So let me see if Ms. Soloria would like to
2416 1 do it now. 2 MR. HISER: I don't think that we have very 3 much time, Madam Hearing Officer, on this. I don't know 4 about Ms. Katz. 5 HEARING OFFICER ORTH: Okay. 6 Ms. Katz? Let's see. 7 MS. KATZ: I -- I believe our presentation 8 would be very short on this topic. 9 HEARING OFFICER ORTH: Okay. So we can 10 certainly go ahead and do that. 11 Mr. Rose, I see you on screen. 12 MR. ROSE: Yes. We had rebuttal testimony in 13 response to the Park Service, as well. We've reviewed 14 that and are withdrawing some of that rebuttal 15 testimony, which we'll have revised, and that's 16 Mr. Blewitt's rebuttal testimony, addressed the Park 17 Service proposal, and we'll be filing revised rebuttal 18 testimony withdrawing some of his comments on the Park 19 Service proposal. Hopefully if we get a break, doing it 20 during the break here today. 21 HEARING OFFICER ORTH: All right. Thank you 22 for that. 23 So do I take it, Ms. Katz, that you'd like to 24 do that rebuttal now? 25 MR. BAAKE: Madam --	2418 1 join us for a discussion and let us know how she would 2 prefer to advise the Board. 3 Ms. Soloria, I see you on the screen. 4 MS. SOLORIA: Hi. Good morning, Madam Hearing 5 Officer and Board Members. 6 As Madam Hearing Officer mentioned earlier, 7 I -- while I have not been on screen, I have been here 8 present throughout the proceedings, and I did appreciate 9 the Board's inquiry about how we were going to handle 10 her recent ruling regarding potentially -- well, 11 exclude -- her ruling was to exclude certain evidence 12 proffered by NMOGA on surrebuttal on the basis of unfair 13 surprise to the other parties. 14 My advice at present, to avoid essentially 15 derailing the presentation of testimony for a mini 16 hearing on the legal propriety of that exclusion, was to 17 proceed as the Hearing Officer suggested, where the 18 NMOGA would proffer on the record what has a rule -- 19 been ruled to be excluded. So all of that is going to 20 go onto the record with essentially the caveat that it's 21 not admissible at this point. 22 I think while it was suggested that you all 23 take up the legal argument about the exclusion now, I 24 just -- I just don't think that's practical -- 25 practicable at this point. I think that's more

2419 1 appropriately reserved for the parties to brief 2 posthearing, and you would essentially take up the 3 reconsideration of the motion that was ruled upon at the 4 top of your deliberations. 5 So when you meet to deliberate, you will 6 consider -- reconsider the Hearing Officer's ruling on 7 that motion. You can uphold it, you can reverse it. In 8 the event that you reverse it and decide that NMOGA's 9 proffered surrebuttal should have been admitted, you can 10 consider it in your deliberations. 11 And the rules also permit you to reopen the 12 record if you decide, hey, we're going to let this 13 evidence in, but we want to give the Department and 14 other parties a chance to then reply, to respond to 15 that. 16 But that is -- these are all considerations 17 that you can discuss freely during deliberations. I 18 just don't think it's practicable at this time, and I 19 think you should have the benefit of sitting with the 20 proffered evidence and the arguments that the parties 21 would present in their posthearing filings. 22 Does anyone have any questions for me? 23 CHAIR SUINA: This is madam -- this is Phoebe. 24 Thank you, Ms. Soloria, for that 25 clarification. I think that helps us all figure out how	2421 1 MR. HISER: Hearing Officer, this is Eric 2 Hiser for NMOGA. 3 We will work, obviously, within the direction 4 of the Board and that you have provided, and -- but I 5 think that it would be appropriate to move 6 Mr. Smitherman back, because we, obviously, need to now 7 develop, you know, a proffer, as well as try to 8 participate in the hearing. But I do remind you that 9 he's not available tomorrow. 10 HEARING OFFICER ORTH: Okay. Thank you. 11 CHAIR SUINA: Madam Hearing Officer? This 12 is -- 13 HEARING OFFICER ORTH: Yes. 14 CHAIR SUINA: -- Madam Chair. 15 And thank you for that, Mr. Hiser. I think -- 16 and I appreciate that -- that information just so that 17 we know the constraints and -- of Mr. Smitherman's 18 availability, and I think we're all just trying to 19 navigate this and trying to make sure that we're -- 20 we're inclusive as -- as appropriate. Thank you again 21 for working with us. 22 HEARING OFFICER ORTH: All right. Thank you. 23 So let me ask if this would be a good time for 24 a break or whether it's preferable to hear from the 25 Department for a little bit before breaking.
2420 1 we move forward on this. 2 And I see every -- other Board Members shaking 3 their head yeah. Okay. Sounds good. 4 Thank you so much. 5 MS. SOLORIA: And the other is -- this is more 6 of a suggestion to the Hearing Officer and the parties, 7 is that we -- if the Hearing Officer is agreeable, that 8 we take a short break so that the counsel can specify 9 what is being proffered and what is being -- essentially 10 have a list of what's being proffered based on the 11 Hearing Officer's order, because I don't think that was 12 clear during the earlier colloquy, and that would -- it 13 would just be more efficient for counsel to do that 14 before Mr. Smitherman is put on. 15 CHAIR SUINA: Thank you, Ms. Soloria. I think 16 I also support that, because it did sound like there was 17 some difference -- or confusion, if you will. And also, 18 I think that would be helpful prior to Mr. Smitherman 19 coming on, just that clarification. 20 I'm looking to the other Board Members, if you 21 have any comments on that, as well. 22 Sounds good. 23 VICE-CHAIR TRUJILLO DAVIS: I support that. 24 MEMBER HONKER: Me, too. 25 HEARING OFFICER ORTH: All right. So it --	2422 1 Ms. Katz? 2 MS. KATZ: I guess I would leave that up to 3 everybody else and the court reporter. 4 THE REPORTER: Yes. We've been going for 5 almost two hours so I would like a break. 6 HEARING OFFICER ORTH: We -- that's right. 7 That's right. We did get on at 8:30, didn't we? 8 All right. Let's take a longish break, then, 9 so that counsel can consider the slides, for example. 10 Let's come back at 10:45, and we'll start with the 11 Department. 12 (Proceedings in recess from 10:23 a.m. to 13 10:46 a.m.) 14 HEARING OFFICER ORTH: Let's come back from 15 the break, please. 16 We're back after a break. 17 Mr. Rose, I see you on screen. 18 MR. ROSE: Two things. 19 One, and I think I alluded to this earlier, if 20 you were looking to limit the chat function to talk to 21 you, it doesn't. Right now it's for everybody, and I 22 think some -- I mean, in the past it's been just to 23 communicate with you. So if you wanted to do that, 24 you're going to have to make some changes. 25 And then secondly, I didn't know if this was

2423 1 the proper time to talk about the discussion we had -- 2 that you had this morning on my objections to 3 admissibility of certain evidence. 4 I think what -- just to be clear, our position 5 was -- is to allow basically you can admit the evidence 6 subject to objection, and we'll raise it probably with 7 the Board in the same manner that the Board's counsel 8 talked about, the NMOGA exclusions, but rather than 9 tying it up and arguing a motion, we thought rather just 10 admit it subject to objection, and then we'll raise it 11 in our posthearing submittals with the Board. 12 HEARING OFFICER ORTH: Okay. Thank you for 13 that, Mr. Rose. 14 I -- I'm happy to proceed as you've suggested, 15 and was reminded of the agreement amongst -- amongst the 16 parties about that objection. And what I was just 17 trying to do this morning was wrap up something I 18 thought was a loose end and be transparent about my 19 intentions. 20 I see Ms. Fox. 21 MS. FOX: Thank you, Madam Hearing Officer. 22 I think Mr. Rose and I are crossing wires, 23 because I thought that what we had more recently agreed 24 to was that we would argue the objections and get that 25 over with at this time so that our evidence, if you were	2425 1 overruled. 2 And so I thought it might be more appropriate 3 to take the evidence and then allow us to argue in 4 close -- in our closing argument whether or not the 5 Board should consider it, mainly because we intend to 6 make that argument to the Board in any event. So I 7 don't think we save anything by arguing it now, and, in 8 fact, I think we -- we'll end up sort of lengthening the 9 process, not necessarily preserving limited resources 10 here. 11 So that was -- that was my intent, was to 12 avoid the argument on admissibility here and just do it 13 with counsel later, in the closing argument. 14 HEARING OFFICER ORTH: All right. 15 Ms. Fox, anything further? 16 MS. FOX: I'm sorry? Pardon me? 17 HEARING OFFICER ORTH: I'm sorry. 18 Anything further? 19 MS. FOX: No, Madam Hearing Officer. At this 20 point we would just like the objection dealt with as any 21 other objection is to the admissibility introduction of 22 evidence and argue it, and we'd like to see our -- all 23 that evidence admitted. 24 HEARING OFFICER ORTH: Right. 25 MS. FOX: So we would like -- we would like to
2424 1 to rule on the objection, would come in not subject to 2 the objection, and so that we would not have to brief 3 the issue posthearing. 4 Our resources are limited, and since, Madam 5 Hearing Officer, you've already indicated your 6 feelings -- your thinking on the objections, we would 7 like to go forward with argument on that and -- and get 8 it out of the way. One less thing for us to have to 9 deal with. 10 MR. ROSE: And, Madam Hearing Officer, I think 11 we avoided the argument. We intend to raise it in our 12 closed hearing -- close -- our -- blah -- closing 13 argument anyway. So the issue will be, you know -- as I 14 think because it goes to the admissibility and the 15 Board's consideration of the evidence, we'll be arguing 16 whether the evidence is relevant in our posthearing 17 submittals in any event. 18 And so I thought the discussion was -- and 19 you're right. I think Ms. Fox is right. We seem to 20 have crossed -- talked past each other on this. But 21 what we were trying to do is avoid the argument here, 22 and then, because we're going to have it again 23 regardless, if the Hearing Officer's -- rather than just 24 take the evidence, make sure we don't get wound up in -- 25 it will be a continuing objection even if it's	2426 1 argue it, although I don't know if, you know, given what 2 you said this morning, I'm not sure you need to 3 entertain much argument. But we would like our evidence 4 admitted. 5 HEARING OFFICER ORTH: All right. 6 Ms. Katz, any thoughts? 7 MS. KATZ: I just would like to register that 8 anything that would make things move more quickly I 9 think would be better. So I would be in favor of 10 briefing that issue and admitting the evidence subject 11 to the briefing. 12 HEARING OFFICER ORTH: Okay. 13 So, Mr. Rose, what if we were to set aside 14 some time so that I could develop a recommendation to 15 the Board. I understand you're going to brief it 16 regardless. And yet what I have is my understanding of 17 the record, my understanding of the testimony we've 18 already had, my impression that the Board will not be 19 confused by the references to -- to methane. 20 But at least hearing whatever you'd like to 21 develop on the way to the close of the hearing, I could 22 address that in my recommendation to the Board. 23 I'm happy to find a time other than again when 24 we have this prize Board time to -- to put that on the 25 record. We could do it at the end of -- at the end of

2427 1 the day, on a lunch break. Let's think about a good 2 time to -- to do that. 3 MR. ROSE: Madam Hearing Officer, that's fine. 4 I was just trying to avoid going through that exercise 5 and making sure that, you know, the Board had the 6 evidence, and then we could decide -- we could argue to 7 them. And I think they're capable of deciding whether 8 to consider it or not consider it. I don't think it's 9 going to taint the Board's deliberations. So that was 10 my thought, was to avoid an argument here in order to 11 expedite the process, but I'm open to either way. 12 HEARING OFFICER ORTH: All right. Let's just 13 think about a good time to do it so we're not using 14 premium Board time. 15 If I understand, we're going from here to the 16 Department's LDAR presentation. 17 MS. KATZ: Yes. Thank you, Madam Hearing 18 Officer. 19 Good morning, Madam Chair and Members of the 20 Board. 21 I'm -- the Department calls Liz Bisbey-Kuehn 22 and Brian Palmer. 23 24 25	2429 1 seals. And sources of leaks also include open-ended 2 lines and valves, as well as corrosion of connections, 3 valves and flanges. 4 Leaks are typically caused by poorly fitted 5 connection points and deterioration of seals and 6 gaskets, and can also occur in changes in pressure, 7 temperature and mechanical stresses. Components that 8 emit fugitive emissions include valves, connectors, 9 pressure relief devices, open-ended lines, access doors, 10 flanges, closed vent systems, seals, pumps, vents, and 11 all the other equipment listed out here before you. 12 MS. KATZ: And, Ms. Kuehn, can you discuss how 13 fugitive emissions can be addressed? 14 MS. BISBEY-KUEHN: Yes. The control options 15 for fugitive emissions include the implementation of an 16 emission leak detection and repair program, otherwise 17 referred to as an LDAR program. These types of programs 18 reduce fugitive emissions by requiring owners and 19 operators to inspect their facilities and equipment to 20 find and repair leaking components and equipment. 21 And the leak detection methods include audio, 22 visual and olfactory inspections, or AVO inspections, 23 that we've seen in other parts of the rule. Also, an 24 instrument monitoring in accordance with an EPA Federal 25 Reference Method 21, or, alternatively, the use of
2428 1 ELIZABETH BISBEY-KUEHN and BRIAN PALMER. 2 (Relating to Topic Order 27) 3 having been first duly sworn or affirmed, were 4 examined and testified as follows: 5 DIRECT EXAMINATION 6 BY MS. KATZ: 7 MS. KATZ: For the Board, this testimony 8 pertains to Section 20.2.50.116, equipment leaks and 9 fugitive emissions. The testimony appears in NMED 10 Exhibit 32, at page -- beginning at page 79 and NMED 11 Rebuttal Exhibit 1, beginning at page 56. 12 Ms. Kuehn and Mr. Palmer have adopted their 13 testimony, and there's no corrections to this section. 14 So I'll have Ms. Kuehn begin with an overview 15 of what this -- this section of the rule regulates. 16 MS. BISBEY-KUEHN: Good morning, everyone. 17 As indicated, this is Section 116, equipment 18 leak and fugitive emissions. And I'll provide an 19 overview of what exactly fugitive emissions are for you. 20 So there are -- there's a large number of 21 equipment, including valves, pumps and other equipment, 22 associated with natural gas production and processing 23 that can be a significant source of VOC emissions. 24 And equipment leaks occur from pumps, pressure 25 relief devices, valves, flanges and connectors, and	2430 1 monitoring using optical gas imaging, OGI, which we have 2 also seen in other sections of the rule. And this is 3 typically done using a FLIR camera, a forward-looking 4 infrared camera, that can detect hydrocarbons. 5 AVO inspections rely on sight, sound and smell 6 to identify leaking components. The EPA Reference 7 Method 21 identifies leaks using a portable instrument 8 that detects the presence of certain organic gases and 9 is able to actual -- to measure the actual volumetric 10 concentration of emissions. 11 And optical gas imaging is a newer method for 12 leak detection and repair that uses, as I indicated, 13 forward-looking infrared cameras to inspect equipment 14 components to identify those leaking -- leaking 15 equipment. 16 Optical gas imaging can be used to survey 17 large numbers of components in a shorter period of time, 18 or in short amount of time, and while EPA Reference 19 Method 21 requires an instrument probe and requires 20 components to be evaluated on a -- on an individual 21 basis. OGI can also be used in aerial surveys, and so 22 you can -- you can identify much more -- many more types 23 of emissions from many more numbers of facilities using 24 that type of technology, as well. 25 The overall effectiveness of an LDAR program

2431 1 to control fugitive emissions is based on the frequency 2 of the monitoring and the leak definition. And it 3 follows that more frequent monitoring means leaks are 4 discovered more quickly and repaired sooner, resulting 5 in less harmful air pollution. 6 MS. KATZ: Ms. Kuehn, can you summarize the 7 requirements of the proposed -- the rule for 8 addressing -- that address fugitive emissions? 9 MS. BISBEY-KUEHN: Yes. There are two 10 concepts in this rule that are important. 11 There's one set of requirements that are a 12 default monitoring requirements that prescribe certain 13 frequencies of monitoring, and that is what you see 14 before you. The default monitoring requirements apply 15 to the inspections of equipment and leaking components. 16 And facilities with a production or throughput 17 greater than 10 barrels per day or 60,000 standard cubic 18 feet per day of gas require weekly AVO inspections, 19 while facilities with production or throughput less than 20 10 barrels of oil per day or production less than 60,000 21 standard cubic feet per day require monthly AVO 22 inspection. 23 In addition, there are prescribed LDAR 24 frequencies for facilities using either EPA methods or 25 OGI, according to the following schedules:	2433 1 emission factors, leakage rates, component counts, 2 fugitive emissions, costs, and representativeness of the 3 EPA's data in New Mexico. 4 The Department was unable to conduct the -- a 5 meta-analysis of those competing studies and provided in 6 the competing technical testimony and associated 7 exhibits provided by the parties. 8 The Department attempted to provide a middle 9 ground for the Board's consideration between these 10 competing data sets. That -- that frequency schedule 11 was more closely aligned with Colorado's LDAR program. 12 And the Department was unable to negotiate a middle 13 ground between these two competing data sets. And 14 further, the Department was unable to sufficiently 15 demonstrate the basis for that revision and has since 16 reverted back to the original proposal that was filed in 17 May. 18 The parties' subject matter experts need to 19 provide testimony regarding their cited peer-reviewed 20 studies, the cost estimates, leakage rates, LDAR 21 effectiveness, et cetera, directly to the Board for the 22 Board's consideration. 23 MS. KATZ: Thank you, Ms. Kuehn. 24 Can you please walk through the provisions of 25 Section 116 as they stand today?
2432 1 Well sites and tank batteries are required to 2 be surveyed annually at facilities with a PTE less than 3 two tons per year, semiannually at facilities with a PTE 4 between two and five tons per year, and quarterly at 5 facilities with a PTE greater than five tons per year. 6 For gathering and boosting stations, gas 7 processing plants and transmission compressor stations, 8 the requirement is to conduct a quarterly LDAR survey at 9 facilities with a PTE less than 25 tons per year and 10 monthly at facilities with a PTE equal to or greater 11 than 25 tons per year. 12 There's also an alternative monitoring 13 component that I'll -- that I'll speak to in more detail 14 when we go through the actual requirements in the 15 proposed rule. 16 MS. KATZ: And can you summarize for the Board 17 the -- the Department's position now based on the 18 testimony that was provided by the other parties in 19 their direct and rebuttal filings? 20 MS. BISBEY-KUEHN: Yes. So both industry and 21 the environmental NGO parties submitted extensive 22 testimony related to LDAR inspection frequencies. Both 23 stakeholder groups cited studies related to LDAR with 24 very competing data sets that are -- provide kind of 25 opposing sets of data on LDAR effectiveness, the	2434 1 MS. BISBEY-KUEHN: Yes. So similar to the 2 other sections that we've looked at previously, the 3 applicability section discusses the sources that are 4 subject to this section. 5 We've added a clarifying clause that 6 components in water or air service are not subject to 7 the requirements of this part, or this section. And 8 that -- that makes sense. If they're in water or air 9 service, they are not sources of fugitive VOC emissions 10 and so would not -- it's not appropriate to include 11 those components within the scope of this section. 12 In addition, we added a clause that clearly 13 states that the requirements of this part may be 14 considered in the facility-wide PTE and in determining 15 the monitoring frequency requirements in this section. 16 So other sections' control requirements may be taken 17 into consideration in a facility-wide PTE calculation in 18 order to determine what frequency you are subject to. 19 That's an important requirement that we clarified. 20 The emission standards identified again the 21 equipment that's subject to this part. I won't read 22 that for you all. I think that's fairly 23 self-explanatory. 24 The default monitoring requirements begin in 25 so -- in Paragraph C. We've struck the requirement to

2435 1 monitor in accordance with Section 112. There are no 2 specific monitoring requirements applicable to this 3 section there. 4 Paragraph C.(1), as I spoke to you on a 5 previous slide, requires the AVO inspection for 6 facilities that have that production or throughput less 7 than those capacity rates identified on -- on a weekly 8 basis. And Subparagraphs (1)(a) through (d) require -- 9 specify the type of combustion of -- specify the type of 10 inspection that has to be inspected and what an owner or 11 operator has to look for when they're conducting that 12 AVO inspection. 13 Paragraph (2), as I indicated on a previous 14 slide, also is the equivalent inspection -- AVO 15 inspection requirement for facilities that are -- have a 16 daily production or throughput rate less than those 17 capacity throughputs, and those are required on a 18 monthly basis. 19 And this section also references back to those 20 Subparagraphs (a) through (d) that I just went through, 21 and that -- and that specifies what the owner or 22 operator must look at when they're conducting the AVO 23 inspection. 24 Paragraph (3) outlines the OGI, the optical 25 gas imaging, or the EPA reference method LDAR surveys	2437 1 (5)(b) clarifies that a leak detected 2 associated with normal operation, such as one that 3 occurs during pneumatic device actuation, is not 4 considered a leak. That's an important point to make. 5 Components -- Paragraph (6) identifies how 6 owners and operators handle inspections of components 7 that are difficult or unsafe or inaccessible to monitor. 8 It provides for specific circumstances for -- for how 9 owners and operators handle that type of situation and 10 how they're required to monitor those at the next 11 process shutdown. 12 Paragraph (7) requires that any -- prior to 13 any monitoring event the owner or operator shall date 14 and time stamp the monitoring event. 15 Paragraph D outlines the alternative equipment 16 leak monitoring plan. So Paragraph C went through the 17 default equipment leak monitoring plan. This is an 18 alternative set of equipment leak monitoring plans. 19 And the first option is for an individual 20 alternative monitoring plan to be utilized. This is an 21 alternative plan that would be proposed by a third party 22 and reviewed in advance by the Department to ensure it's 23 an enforceable, equivalent and appropriate monitoring 24 strategy. And those -- those would need to be approved 25 by the Department before an owner or operator could
2436 1 that are required for all types of facilities that are 2 subject to this rule. In addition, we added a 3 requirement that the Department may request an owner or 4 operator to conduct a survey at any time for good cause 5 shown. 6 In addition, we added a timeline for existing 7 facilities to come into compliance within two years of 8 the effective date of this part. And given the volume 9 of facilities that will be covered under this rule, we 10 think that's an appropriate compliance timeline. 11 So the LDAR frequencies before you have been 12 presented to you on a previous slide. So I won't go 13 through those again here. They're exactly as they were 14 discussed prior. 15 Paragraph (4) requires calibration -- or 16 specifies how the unit must be calibrated prior to using 17 a Reference Method 21 survey. And Paragraph (4)(b) 18 identifies the leak detection rate that is considered -- 19 that would be considered a leak under this part. 20 Inspection -- (5) outlines the requirements 21 for inspections using an OGI, and we're pointing to a 22 federal rule at -- that requires specifications and 23 daily instrument checks and other additional 24 requirements that are set forth in those subparagraphs, 25 Paragraph (i) of the federal rule.	2438 1 comply with this section by complying with that type of 2 individual alternative monitoring plan. 3 There's also requirements for -- if violations 4 are discovered, there's requirements for them to notify 5 the Department of the violation, and there's a process 6 by which the Department can terminate the use of that 7 alternative monitoring plan. 8 And the purpose of the alternative equipment 9 leak monitoring plan is to provide an on ramp into this 10 section for the use of new technologies that are more 11 effective at -- and more efficient at discovering leaks. 12 And those can take many forms. They can take the form 13 of an aerial survey, satellite data, fence line 14 monitoring, and other types of technology. 15 So -- 16 MS. KATZ: Ms. Kuehn -- 17 MS. BISBEY-KUEHN: Yes. 18 MS. KATZ: Sorry. 19 I just wanted to clarify something, because 20 you had said these would be provided by a third party, 21 and I believe you meant that these would be proposed by 22 an owner or operator as an alternative to the default 23 monitoring plan. 24 MS. BISBEY-KUEHN: That's correct. 25 And sorry if I was unclear about that.

2439 1 So the first type of alternative equipment 2 leak monitoring plan are covered in D.(1), and then the 3 second type of alternative leak monitoring plans are 4 outlined in Paragraph (2). Those are preapproved plans 5 which still must go through an evaluation and review 6 process by the Department before they approve those 7 monitoring plans. 8 And the idea here is that the Department will 9 provide those preapproved alternative monitoring plans 10 on its web site so that the public and the owners and 11 operators know what the Department has considered an 12 equally effective and enforceable and equivalent 13 monitoring strategy. And the process is the same. They 14 must seek approval from the Department. The Department 15 maintains the authority to terminate that approval in 16 certain -- certain circumstances. 17 Paragraph E outlines the repair requirements 18 for these -- for leaks that are detected. And Paragraph 19 E.(1) requires owners and operators to place a visible 20 tag on the leaking component and unless -- unless that 21 it was -- it was repaired at the time of discovery. 22 E.(2) identifies the repair timeline for leaks 23 discovered in this section. 24 Paragraph (3) requires those leaks to be 25 remonitored no later than 15 days after the leak was	2441 1 Paragraph 4. 2 MS. BISBEY-KUEHN: Yeah. Been a long week. 3 So the -- again these are additional 4 recordkeeping requirements before you. 5 And the reporting requirements are in 6 Paragraph G. We didn't receive any comments on those 7 paragraphs. 8 That concludes this presentation. 9 MS. KATZ: And that is the Department's 10 summary of the rule provisions at Section 116. 11 HEARING OFFICER ORTH: All right. Thank you 12 very much, Ms. Katz and Ms. Kuehn. 13 Parties, if you have questions of Ms. Kuehn 14 based on this testimony, please turn on your cameras. 15 I see Ms. Gutierrez. 16 MS. GUTIERREZ: Thank you, Madam Hearing 17 Officer. CROSS-EXAMINATION 19 BY MS. GUTIERREZ: 20 MS. GUTIERREZ: And, Ms. Kuehn, thank you very 21 much for your presentation and walk-through of leak 22 detection. 23 I just have a few questions for you. 24 Does the Department recognize and agree that 25 the VOC content of natural gas transported by a
2440 1 repaired, to demonstrate that it was repaired. And then 2 E.(4) requires that leaks that need to be delayed 3 because they can't be effectively controlled at the -- 4 at that time within that timeline must be repaired at 5 the next process unit shutdown, which is equivalent to 6 other federal requirements that allow that type of leak 7 repair extension. 8 And Paragraph (5) authorizes that leaks that 9 can't be repaired due to a discovery of -- that can't be 10 repaired due to a shortage of parts may be also repair 11 delayed, provided that they document the basis for the 12 extension -- the necessary extension due to the -- due 13 to the delay of the shortage of parts. 14 Paragraph 4 goes through all of the 15 recordkeeping requirements to demonstrate compliance 16 with this section. I won't go through this entire list 17 here, but they're required -- owners and operators have 18 to record facility location, the monitoring method, date 19 and time of the inspection, the leaks that were 20 identified, and the description of the leak needing 21 repair, and then additional information on the type of 22 leak and when the leak was repaired. 23 MS. KATZ: And I'll just clarify for the 24 record that the -- it's the recordkeeping requirements 25 at Paragraph F. I believe Ms. Kuehn misstated that as	2442 1 transmission compressor station is lower -- much lower 2 than the VOC content of gas moved in gathering and 3 boosting and at gas plants? 4 MS. BISBEY-KUEHN: Yes. 5 MS. GUTIERREZ: Do you agree, then, that it 6 would be reasonable to treat transmission compressor 7 stations differently than with respect to inspection 8 frequency under this rule program? 9 MS. BISBEY-KUEHN: Yes. 10 MS. GUTIERREZ: Were you able to review the 11 joint revised proposed language proposed by Kinder 12 Morgan and EDF and circulated to the parties on Friday, 13 September 24th? 14 MS. BISBEY-KUEHN: Yes. 15 MS. GUTIERREZ: And I'm happy to share my 16 screen if that would be helpful. 17 MS. BISBEY-KUEHN: That would be helpful. 18 MS. GUTIERREZ: The Department's -- sorry 19 about that. 20 Did I interrupt you? 21 MS. BISBEY-KUEHN: No. That would be helpful. 22 MS. GUTIERREZ: Okay. 23 Madam Hearing Officer, may I -- oh, thank you. 24 You're well ahead of me. 25 Okay. So for the benefit of the parties and

2443 1 the Board, this was the filing from Friday -- sorry, 2 just making sure I had the right document up -- Friday, 3 September 24th, from both EDF and Kinder Morgan. 4 And I'll just scroll down here to the proposed 5 language. 6 HEARING OFFICER ORTH: Ms. Gutierrez? 7 MS. KATZ: I'm not seeing anything, 8 Ms. Gutierrez. 9 MS. GUTIERREZ: Oh, you're not? 10 MS. KATZ: I don't know -- 11 MS. GUTIERREZ: Let's try again, then. Sorry 12 about that. 13 Do you see anything now? 14 MS. KATZ: No. There's just a gray window 15 there. 16 MS. GUTIERREZ: Okay. Let me try again. 17 MS. BISBEY-KUEHN: I may add that I do recall 18 what the -- the reference that you are referring to, and 19 we did -- I did have a chance to review that. 20 MS. GUTIERREZ: Okay. I think -- let me try 21 this one more time, and if it doesn't work, I'll move 22 this along, because I don't want to delay us. 23 I have a spinning wheel so I'm going to let 24 that think. 25 Okay. Can you see the language on the screen	2445 1 and your having reviewed it, does the Department support 2 the joint revised language proposed by EDF and Kinder 3 Morgan? 4 MS. BISBEY-KUEHN: Yes. 5 MS. GUTIERREZ: And is it your 6 understanding -- I'm just taking this a little bit more 7 into context -- that the current federal NSPS Quad 0a 8 applicable to transmission compressor stations is 9 quarterly, which is the same time frame or same 10 frequency that EDF and Kinder Morgan are proposing here 11 in this rule? 12 MS. BISBEY-KUEHN: Yes. 13 MS. GUTIERREZ: Okay. 14 And then in NMED's Exhibit 1, page 56, your 15 testimony states that the Department was previously most 16 concerned with the reference to compliance with federal 17 NSPS leak detection programs due to changes in the 18 federal program with changes in administration. 19 Is that understanding correct? 20 MS. BISBEY-KUEHN: Yes. 21 MS. GUTIERREZ: Okay. 22 So then do you agree that the EDF and Kinder 23 Morgan proposal with the use of language "at least as 24 stringent as NSPS Quad 0a," that's effective as of 25 today, provides the backstop that ensures the
2444 1 now? 2 MS. BISBEY-KUEHN: Yes. 3 MS. GUTIERREZ: Okay. Great. 4 Let me -- oh, you're probably going to see -- 5 HEARING OFFICER ORTH: Ms. Gutierrez, we have 6 a -- 7 MS. GUTIERREZ: Yes. 8 HEARING OFFICER ORTH: -- request from a Board 9 Member for the number of the exhibit. 10 MS. GUTIERREZ: A request for what? I'm 11 sorry. I didn't hear you. 12 HEARING OFFICER ORTH: Oh, sorry. 13 The exhibit number. 14 MS. GUTIERREZ: So this was filed by EDF and 15 Kinder Morgan as a notice of alternate proposal that we 16 would be presenting in our presentations. We would be 17 happy -- and this was through conversation with multiple 18 parties. We would be happy to additionally support 19 it -- submit it as an exhibit. We did file it with 20 Ms. Jones and I think understood that it would be 21 circulated to the Board Members. 22 HEARING OFFICER ORTH: Thank you. 23 MS. GUTIERREZ: Thank you. 24 Okay. Sorry about this. Too many screens. 25 Okay. So with the language now on the screen,	2446 1 Department's goals with leak detection are achieved 2 because the current NSPS Quad 0a applicable to 3 transmission compressor stations is quarterly? 4 MS. BISBEY-KUEHN: Yes. 5 MS. GUTIERREZ: Thank you. 6 I think one last question. 7 And just as clarification as to the 8 Department's interpretation of this joint proposal, 9 following that line, is it fair to say, then, that when 10 the Department evaluates that the federal NSPS is, 11 quote, at least as stringent as NSPS Quad 0a, existing 12 as of today, what we really mean is that the federal 13 NSPS must require at least quarterly frequency for leak 14 detection? Is that correct? 15 MS. BISBEY-KUEHN: Yes. 16 MS. GUTIERREZ: Okay. 17 Thank you. And I have no further questions 18 for Ms. Kuehn. 19 Thank you, Ms. Kuehn. 20 HEARING OFFICER ORTH: Thank you, 21 Ms. Gutierrez. 22 I see Mr. Rose. 23 MR. ROSE: Yes, Madam Hearing Officer. Just a 24 question of clarification. 25

2447 1 CROSS-EXAMINATION 2 BY MR. ROSE: 3 MR. ROSE: Ms. Kuehn, I assume -- and we heard 4 testimony, which seems like a year ago now, with respect 5 to small businesses that there were some provisions of 6 your proposal that -- that were applicable to small 7 businesses, and it was my recollection that this was one 8 of them. 9 Is that still the case? Did I remember that 10 correctly? 11 MS. BISBEY-KUEHN: That's correct. 12 MR. ROSE: That was the only question I had, 13 Madam Hearing Officer. 14 HEARING OFFICER ORTH: Thank you. 15 I think I saw Mr. Hiser there briefly. 16 There you are. 17 MR. HISER: Yes, Madam Hearing Officer. I'm 18 here. 19 And I will say that we are happy that Kinder 20 Morgan, EDF and the Department have reached an 21 agreement, but we would note that that seems 22 inconsistent with the prior rulings of this Hearing 23 Officer about NMOGA and its information. 24 But rather than belabor that point, let's move 25 on to the -- Ms. Kuehn.	2449 1 the -- on the frequency as required in Part 50. If 2 everything else aligned, it would be an acceptable -- 3 MR. HISER: So you're not proposing to require 4 us to do -- to sniff the valve once for Quad 0a purposes 5 and then to sniff it again for Subpart -- or Part 50 6 purposes. 7 MS. BISBEY-KUEHN: No. An operator, you know, 8 if -- if Part 50 is more stringent than ideally, 9 complying with Part 50 would also comply with -- with 10 Quad 0a. 11 MR. HISER: So as long as the technical 12 requirements are met, then it can be used for multiple 13 purposes. Thank you for that clarification. 14 You also stated that you didn't believe that 15 the -- that the Quad 0 and Quad 0a frequency information 16 that was gathered by the federal EPA in terms of the 17 frequency for leak detection and repair activities were 18 appropriate because a number of the facilities across 19 New Mexico are older than the NSPS equipment at issue in 20 that survey; is that correct? 21 MS. BISBEY-KUEHN: That's -- that's one point 22 that was made. Yes. 23 MR. HISER: Okay. 24 Would not that newer equipment be relevant to 25 new equipment under the new equipment provisions of this
2448 1 CROSS-EXAMINATION 2 BY MR. HISER: 3 MR. HISER: So, Ms. Kuehn, in the provisions 4 of your -- of your rebuttal testimony on page -- your 5 Exhibit 1, NMED Rebuttal Exhibit 1, page 56, you 6 expressed concern about allowance of Subparts Quad 0 and 7 Quad 0a to meet the requirements of Part 50. 8 MS. BISBEY-KUEHN: That's correct. 9 MR. HISER: And putting aside the fact that 10 you just agreed to accept those for Kinder Morgan in the 11 prior testimony, your objection here is to the programs, 12 it's not -- is it to the use of the methods, or is it to 13 the program that your objection relates to? 14 MS. BISBEY-KUEHN: I'm not clear on your 15 question, Ms. Hiser. 16 MR. HISER: And that's fair, because it wasn't 17 as articulate as it may be. 18 If we were to go out and conduct a Subpart 19 Quad 0 or Quad 0a investigation using the appropriate 20 methodology that also meets the Department's 21 specifications in Part 50, would you accept that LDAR 22 activity as meeting the requirements of Part 50, even 23 though it was also done for purposes of complying with 24 Subparts Quad 0 or Quad 0a? 25 MS. BISBEY-KUEHN: Only if it was conducted on	2450 1 proposal, or could it not be? 2 MS. BISBEY-KUEHN: I'm unclear about what the 3 question is. 4 MR. HISER: Well, your complaint was that -- I 5 believe that there was older equipment across New 6 Mexico. 7 But is there not also newer equipment across 8 New Mexico? 9 MS. BISBEY-KUEHN: There is both older and 10 newer equipment across New Mexico. 11 MR. HISER: And so would not the federal 12 information that NMOGA provided about leak frequency at 13 that newer facilities be relevant to newer facilities? 14 MS. BISBEY-KUEHN: It would be relevant to 15 newer facilities. 16 MR. HISER: Did you give any consideration to 17 that as part of your evaluation? 18 MS. BISBEY-KUEHN: We -- it's unknown if we 19 gave consideration to that in the evaluation. 20 MR. HISER: Okay. Thank you. 21 What is the frequency of AVO inspections that 22 you're requiring the operators to do? Is it basically 23 monthly or -- in the rule? Can you tell us -- 24 (Simultaneous discussion.) 25 MS. BISBEY-KUEHN: Quarterly or monthly

2451 1 depending on the production or throughput rate. 2 MR. HISER: And in part were you responding to 3 testimony that you've seen from experts such as Mr. Lyon 4 that much of the leak depends upon the maintenance 5 status of the equipment? 6 MS. BISBEY-KUEHN: No. That wasn't the basis 7 for that requirement. 8 MR. HISER: So what was the basis for the 9 requirement, then? 10 MS. KATZ: And may I -- I believe that that 11 was included in the original petition, May 6th. 12 MS. BISBEY-KUEHN: It was. 13 MR. HISER: It may be. I think I'm still 14 entitled to an answer. This is her summary of both 15 direct and rebuttal. 16 MS. KATZ: I would just say that I don't see 17 how we would have been relying on information from 18 Mr. Lyon if we were proposing it initially in the 19 petition. 20 MR. HISER: Excellent question. 21 So let me rephrase it and say without regard 22 to what Mr. Lyon may or may not have said in this 23 hearing, what was the basis for the Department's choice 24 of the AVO frequency? 25 MS. BISBEY-KUEHN: That higher production	2453 1 the effective date, and this is where you -- I'm sorry. 2 I can't read my note here. 3 Let's skip that for the moment. 4 Now, you talked about inactive and wellhead 5 facilities are required to conduct a one-time survey in 6 your rebuttal testimony. 7 Why did you move to a one-time survey at the 8 time of your rebuttal testimony for those facilities? 9 This is the bottom of page 59. 10 MS. BISBEY-KUEHN: Yeah. So as I -- as I 11 discussed, we are -- we dealt with very -- a voluminous 12 set of direct and rebuttal testimony on equipment leaks, 13 and we were -- the objective was to provide a middle 14 ground proposal for the Board's consideration that was 15 crafted as a -- kind of a middle -- middle ground 16 approach based on the two competing sets of information 17 that was provided by the different stakeholders. 18 MR. HISER: I appreciate the -- I guess the 19 politicness of that, but I'm wondering what the 20 technical basis is that underlied the Department's 21 decision to move from one time to annual, I believe, for 22 these facilities, that had been raised in Oxy's 23 comments. 24 MS. BISBEY-KUEHN: So I'm not clear what 25 your -- what your question is.
2452 1 facilities will have necessarily higher -- more 2 equipment with more leakage opportunities and should be 3 inspected more frequently. 4 MR. HISER: And what's the -- what's the 5 Department's hope behind the inspection provision? 6 MS. BISBEY-KUEHN: That leaks are discovered 7 and fixed. 8 MR. HISER: Okay. 9 And it's your understanding that that's 10 required under the OCD rules, as well, either weekly or 11 monthly depending on certain thresholds? 12 MS. BISBEY-KUEHN: That is correct. 13 MR. HISER: In page 59 of your testimony on 14 Exhibit 23 -- or Rebuttal Exhibit Number 1, NMOGA 15 proposed that if certain equipment was fixed at the time 16 it was discovered, that no tagging would be required, 17 and the Department accepted that; is that correct? 18 MS. BISBEY-KUEHN: Yes. 19 MR. HISER: And so do you agree that it's 20 desirable that industry be able to fix it right away, 21 that that's what you're seeking to occur? 22 MS. BISBEY-KUEHN: Yes. 23 MR. HISER: And then you also -- there was an 24 Oxy comment that you responded to where they talked 25 about leak survey for equipments constructed prior to	2454 1 MR. HISER: So did you undertake any type of 2 technical evaluation on the tons that would be reduced 3 or the costs that were incurred by industry by moving 4 from the one time only to an annual standard? 5 MS. BISBEY-KUEHN: So we prepared cost 6 estimates and emission reductions on our original 7 proposal, and so to the extent that that was covered in 8 our original proposal, we did conduct that analysis. 9 MR. HISER: Did you ever consider any 10 incremental costs for moving from one standard to 11 another, for example, from annual to semiannual or from 12 one time to annual? 13 MS. BISBEY-KUEHN: That information is in our 14 direct testimony, in the cost spreadsheets. I think 15 it's broken out. There's a series of frequencies. The 16 cost estimates are based on a series of frequencies, and 17 that information is in -- is found within our 18 spreadsheets. 19 And Mr. Palmer can confirm that. 20 MR. HISER: Okay. Thank you. 21 (Unintelligible and/or inaudible.) 22 Let's see. NMOGA proposed to revise 23 certain -- exempting certain facilities that process 24 only coal bed methane. 25 Can you explain to us the Department's

2455 1 understanding of the VOC content of coal bed methane 2 versus natural gas produced from conventional 3 operations? 4 MS. BISBEY-KUEHN: It -- coal bed methane 5 typically has a much lower VOC content. 6 MR. HISER: Okay. 7 And then in the recent discussion that you had 8 with Ms. Gutierrez for Kinder Morgan, I believe that 9 they raised the fact that there is lower VOC and that 10 you accepted that as a basis for reduction in frequency. 11 Is that rationale also appropriate for coal 12 bed methane? 13 MS. BISBEY-KUEHN: Yes. 14 MR. HISER: Thank you. 15 On page 60 of your testimony, you said that 16 you went to the rebuttal proposal to more closely align 17 with the Colorado rules. 18 Can you give us a brief finger -- thumbnail 19 description of the rationale for why you thought 20 Colorado was appropriate? 21 MS. BISBEY-KUEHN: They have a similar set of 22 facilities. They have an established LDAR frequency 23 program that has been in effect for some time and that 24 was agreed upon at those rulemaking hearings. 25 MR. HISER: And in fact, I think you testified	2457 1 for obvious leaks that can be detected using those 2 methods. 3 MR. HISER: And what -- 4 MS. BISBEY-KUEHN: It's a technology-based 5 inspection that's targeting specific pollutants. 6 MR. HISER: So is it fair to say that the 7 Department thinks that an AVO inspection might find 8 particularly big leaks that are obvious? That might -- 9 MS. BISBEY-KUEHN: Yes. 10 MR. HISER: Okay. 11 And that your interest in the -- sorry. I'm 12 losing my voice. And that your interest in the LDAR 13 program is for the smaller leaks, things like valve 14 stems, flanges, connectors, things of that nature? 15 MS. BISBEY-KUEHN: Yes. 16 MS. KATZ: And can we just clarify, Mr. Hiser? 17 We can maybe talk about it as enhanced LDAR, maybe might 18 help. 19 MR. HISER: Okay. 20 I have to struggle with the fact I printed 21 stuff on two pages and I keep getting them flip-flopped. 22 So my next question, I think, goes to page 61, 23 and this was NMOGA proposed to add language to Paragraph 24 (6), Ms. Kuehn, and you probably remember this, where we 25 argued that leaks detected should not be subject to
2456 1 earlier in this proceeding that those rules have been in 2 effect since around 2009 and subject to periodic 3 redevelopment and reevaluation in Colorado; is that 4 correct? 5 MS. BISBEY-KUEHN: Those were for pneumatics. 6 Yes. So to the extent the LDAR program -- yes. That 7 are -- I don't know the exact date of the -- their -- 8 when they implemented their LDAR program. 9 MR. HISER: Okay. Thank you. 10 Now, earlier you noted that we have in New 11 Mexico, thanks to the OCD and now also to the proposal 12 from NMED, a fairly extensive AVO investigation of these 13 facilities. 14 Does that weigh in our decision about how 15 frequently we should conduct the instrumental evaluation 16 or OGI evaluation under LDAR? 17 MS. BISBEY-KUEHN: No. I think they 18 complement each other. 19 MR. HISER: Can you explain what it is that 20 we're seeking to do that's different between those 21 programs? 22 MS. BISBEY-KUEHN: AVO is a less -- it doesn't 23 require a specific technology. It's going to be more 24 subjective. But it happens more frequently, and it's 25 looking for -- it's a screening evaluation, or looking	2458 1 enforcement action unless the owner fails to perform the 2 required repairs, and the Department declined to 3 present -- or to accept that change; is that correct? 4 MS. BISBEY-KUEHN: That's correct. 5 MR. HISER: And what was the rationale that 6 the Department provided for not undertaking -- or not 7 including that in the rule? 8 And I believe it's set forth in that 9 paragraph. 10 MS. BISBEY-KUEHN: LDAR inspections provide 11 important information to owners and operators regarding 12 the condition of sources and the overall state of 13 operations at a facility. There may be instances where 14 the Department discovers egregious violations from 15 leaking components that present an imminent and 16 substantial danger to human health or the environment or 17 repeated leaks from the same components that indicate a 18 systemic pattern of failure by the owner or operator to 19 maintain sources and components in good working order. 20 The Board should not categorically limit the 21 Department's enforcement authority in the manner 22 proposed. Doing so would unreasonably hinder the 23 Department's ability to enforce on violations and would 24 conflict with the Department's existing regulatory and 25 statutory authority to take enforcement action for

2459 1 violations of the Air Quality Control Act in Part 50. 2 MR. HISER: Thank you, Ms. Kuehn. I 3 appreciate that. 4 And do you still believe that today as you're 5 testifying here to the Board? 6 MS. BISBEY-KUEHN: Yes. 7 MR. HISER: Okay. 8 And I think your understanding based on 9 industry's prior statement in that is that industry 10 doesn't really disagree with the standard that you've 11 just articulated either, correct? We are interested in 12 a level playing field for good operators? 13 MS. BISBEY-KUEHN: That's correct. 14 MR. HISER: Okay. 15 My question is -- I'm going to ask you a 16 hypothetical and crave the indulgence of your counsel, 17 who is glowering at me on the screen. 18 And so right now we have a -- you know, a 19 bureau which is interested in working with all parties 20 and moving this forward and making emissions reductions, 21 but the rule that you propose would actually make any 22 leak a violation just at the Department's say-so; is 23 that correct? 24 MS. BISBEY-KUEHN: I think it depends on our 25 evaluation of the leak and whether or not we would	2461 1 whether interpretations can change over time and whether 2 industry should be concerned about that. 3 MS. BISBEY-KUEHN: The record on this 4 rulemaking is clear, and our intent is clear. 5 MR. HISER: Okay. Thank you, Ms. Kuehn. I 6 appreciate that clarification, as well. 7 And Ms. Katz. 8 On page 63, I think, of your testimony -- I 9 think we're still in your -- nope, we're in the cost 10 analysis. 11 Are you speaking to this, or is it going to be 12 Mr. Palmer? 13 MS. BISBEY-KUEHN: That will be Mr. Palmer. I 14 can see if I can answer the question, but Mr. Palmer 15 should probably join us, also. 16 MR. HISER: Are we able to get Mr. Palmer? 17 MR. PALMER: I'm here. 18 MR. HISER: Okay. Good. 19 So in the -- your testimony, Mr. Kuehn and 20 Mr. Palmer, you talk about model plant information 21 between -- based on information in the greenhouse gas 22 reporting plant for the Permian and San Juan Basins, and 23 then you also talked about the 2016 CTG information that 24 you provided. 25 And you testified that you couldn't evaluate
2460 1 consider that a violation or not. 2 MR. HISER: So basically you're saying it's at 3 your sole discretion as to whether or not it would be a 4 violation. 5 MS. BISBEY-KUEHN: It would be, but in that -- 6 that decision is required, we must show good cause for 7 that decision, and that decision that -- is appealable. 8 MR. HISER: Do you think it's reasonable for 9 industry to push back on just handing a check to an 10 agency, because once this goes into the rules, any 11 agency, not just Liz and Lara and the people that we 12 know there now, can make those decisions in the future? 13 Do you think -- 14 MS. KATZ: Objection. That -- 15 (Simultaneous discussion.) 16 MR. HISER: -- in the future may be a 17 legitimate concern to industry? 18 MS. KATZ: And that's -- 19 HEARING OFFICER ORTH: Ms. Katz? . 20 MS. KATZ: -- just a mischaracterization, I 21 think, of what the testimony that Ms. Kuehn just read 22 and what she's saying. 23 HEARING OFFICER ORTH: All right. 24 Would you rephrase, please, Mr. Hiser? 25 MR. HISER: So my question to Ms. Kuehn is	2462 1 the validity or representativeness of the alternative 2 model plants mentioned by NMOGA because you said NMOGA 3 didn't document its testimony or exhibits to the actual 4 model plants; is that correct? 5 MR. PALMER: That is correct. 6 MR. HISER: Did NMOGA provide the underlying 7 data in Exhibit 27 that was filed and admitted in this 8 proceeding? 9 MR. PALMER: Yes. NMOGA provided a printout 10 from the Greenhouse Gas Reporting Program, but there 11 were no spreadsheets indicating how those GHGRP data 12 were manipulated to create model plants or whatever you 13 used to present the results. 14 MR. HISER: Okay. 15 And did you consider those spreadsheets in 16 light of the testimony of Mr. Smitherman on direct? 17 MR. PALMER: I'm sorry. Could you please 18 restate that? 19 MR. HISER: Did you consider what was in the 20 spreadsheet in light of the testimony of Mr. Smitherman 21 on direct in this proceeding? 22 MR. PALMER: I'm sorry. Which test -- 23 MR. HISER: It would have been NMOGA Exhibit 24 A1, the testimony of John Smitherman, in response to -- 25 MR. PALMER: He --

2463 1 MR. HISER: -- on LDAR. 2 MR. PALMER: His testimony referred to some 3 tables in the red-line of the rule. 4 MR. HISER: And so your testimony is that you 5 were unable to determine between Mr. Smitherman's 6 testimony, the red-line tables and the exhibit what he 7 was talking about. 8 MR. PALMER: I had a general sense, but I 9 could not draw a firm conclusion or evaluate how he came 10 up with those numbers that were in the tables in the 11 red-line. It was not clear that he had created those 12 tables in the red-line because the red-line was not 13 attributed to any particular witness. And so that's as 14 far as we took it. 15 MR. HISER: Okay. Thank you, Mr. Palmer. 16 A little bit further on that page, there's 17 testimony -- this sounds perhaps more like Ms. Kuehn, 18 but perhaps it was you, Mr. Palmer -- that it is beyond 19 the scope of this rulemaking to reassess EPA's response 20 to particular API, being American Petroleum Institute, 21 comments on the 2016 Control Techniques Guidelines in 22 the absence of additional information. 23 Is it your understanding that those API 24 comments went to the costs that were being used? 25 MR. PALMER: Yes. That was my understanding.	2465 1 MS. BISBEY-KUEHN: I -- I don't think that -- 2 well, I think we've addressed our position on that in 3 our rebuttal testimony. 4 MS. KATZ: Yeah. And I believe Mr. Palmer 5 stated what it was, which was that those comments were 6 already taken into account by EPA, and so that's why we 7 decided that we weren't going to take them up again and 8 rehash them and relitigate them here. 9 MR. HISER: Okay. 10 And did the -- is the Department taking the 11 same position on other proposals that were made by other 12 parties about expanding or increasing frequencies that 13 were raised in the scope of those prior testimony -- in 14 the EPA proceeding, or are you re-entertaining those 15 here? 16 MS. KATZ: If you can point us to where that 17 is in our testimony where we are willing to go over 18 those comments in the same way, we can address that. 19 MR. HISER: Okay. Fair. 20 MS. KATZ: I don't know who you're referring 21 to. 22 MR. HISER: In page 64 of your testimony, 23 NMOGA cited a Pacsi, Adam & Ferrara study on equipment 24 leak detection and quantification at 67 oil and gas 25 sites in Western United States.
2464 1 MR. HISER: And so how would discussion of 2 costs be beyond the scope of the Air Quality Control Act 3 which makes cost one of the considerations for the 4 Board? 5 MR. PALMER: I reviewed the EPA's response to 6 those API comments, and they seem to have responded to 7 them completely, and I assume, then, that those comments 8 and EPA's response were reflected in the CTG's costs. 9 And so I felt that it was beyond the scope of our 10 project using the CTG cost estimates to do any further 11 analysis. 12 MR. HISER: So your scope from NMED was to use 13 the CTG cost estimates and make a cost analysis. 14 MR. PALMER: That was what we decided to do 15 within the scope of our project. 16 MR. HISER: Okay. 17 And did you discuss that scoping decision with 18 Ms. Kuehn, or was that one internal to ERG? 19 MR. PALMER: That was covered in our regular 20 meetings that we had as a team. 21 MR. HISER: So, Ms. Kuehn, is it your belief 22 that those comments are outside the scope of this 23 rulemaking? 24 You're on mute. Sorry, Ms. Kuehn. Or at 25 least I can't hear you.	2466 1 Do you remember that, Ms. Kuehn, or 2 Mr. Palmer? 3 MS. BISBEY-KUEHN: Yes. 4 MR. PALMER: Yes, I do. 5 MR. HISER: Okay. Thank you. 6 Didn't NMOGA produce this study in Exhibit 5? 7 MR. PALMER: Yes. 8 MR. HISER: And doesn't that study provide 9 fairly detailed information on leak frequencies for 10 different types of components? 11 MR. PALMER: I believe it does. 12 MR. HISER: Okay. 13 So what part of additional detailed comparison 14 were you requesting that NMOGA provide? 15 MS. KATZ: And can I just clarify? Can I just 16 bring us back to -- I just -- that the -- we have 17 said -- that is Ms. Kuehn said in her presentation that 18 we were not able to go through all the studies of 19 everything, and that is why we were relying on the 20 parties to present that information to the Board, and 21 for the Board to make that decision, and that they -- we 22 weren't advancing anything here about those studies, 23 because we didn't -- we weren't able to process all of 24 them. 25 So I feel like it's probably better for that

2467 1 to be put on through your own witnesses. 2 MR. HISER: So your testimony is we should put 3 that on on our own witness? Is that what you just said? 4 MS. KATZ: On those studies that you included 5 in your -- as your exhibits. 6 MR. HISER: At this point your -- the 7 Department's testimony is that you did -- you and ERG 8 did not particularly review this study. 9 MS. KATZ: (Nods head.) 10 MS. BISBEY-KUEHN: I think I -- I think maybe 11 we reviewed the abstract. I did not go -- I did not 12 review the study in detail. 13 MR. HISER: Okay. 14 Now, in the -- you also cited a Colorado State 15 University study, and I'm sure I'm going to draw the 16 same basic comment from you, but there, however, you 17 went on to say that the study indicates that the study 18 emission factors agree with or are larger than the 19 current greenhouse gas reporting. 20 Doesn't this show some issues with the CTG 21 document that you were relying upon, and, obviously, you 22 evaluated it to that extent, because there's 23 discrepancies between the CTG and Greenhouse Gas 24 Reporting Program? 25 MR. PALMER: That testimony was from the	2469 1 MR. PALMER: Yes. That's correct. That 2 was -- yes. 3 MR. HISER: So, Mr. Palmer, given that you 4 have two sources of data, one that point dates back to 5 1996 and one that is relatively current, like 2018, at 6 the point you would have been working at this in 2019, 7 why the preference for the CTG document and not the 8 greenhouse gas reporting document? 9 MR. PALMER: Greenhouse gas reporting -- there 10 is no greenhouse gas reporting document. There's a 11 rule. There are data. Those data would need to be 12 synthesized. The CTG has not been withdrawn as guidance 13 by EPA in response to the data that have been collected 14 through the GHGRP. 15 MR. HISER: So -- 16 MR. PALMER: So -- 17 MR. HISER: Anything else, Mr. Palmer? I 18 don't want to cut you off. I want to make sure we get 19 all of your testimony. 20 MR. PALMER: Within the time frame, scope and 21 resources of this project, we used the CTG. 22 MR. HISER: So, Mr. Palmer, Ms. Kuehn, at the 23 time that the 1996 CTG was done, was there extensive 24 coal bed methane production, or is that all postdated 25 that 1996 review?
2468 1 abstract of the study. 2 MR. HISER: So -- okay. So this is -- this. 3 And then, Mr. Palmer, perhaps this is better 4 to you. What is the Greenhouse Gas Reporting Program, 5 and what does it involve? 6 MR. PALMER: The Greenhouse Gas Reporting 7 Program is a mandatory reporting program for generally 8 facilities that have facility-wide emissions greater 9 than 25,000 metric tons per year of CO2 equivalents. 10 MR. HISER: And for the oil and gas industry 11 in specific, does not that reporting program require 12 that you give specific equipment counts for things like 13 connectors or compressors or acid gas units or things 14 like that as part of the reporting program? 15 MR. PALMER: That's correct. 16 MR. HISER: And aren't we as operators 17 required to update that information each year that we've 18 filed those reports, in order to be true, complete and 19 accurate under the federal program? 20 MR. PALMER: That's correct. 21 MR. HISER: So if we look back at the CTG 22 document that was the basis for the ERG report, when was 23 much of that data developed? 24 I'll represent to you that it's 1996. 25 Does that comport with your memory?	2470 1 MS. BISBEY-KUEHN: I'm -- yes. I believe coal 2 bed methane was being extracted in the state at that -- 3 during that time. 4 MR. HISER: Okay. 5 And then was there extensive use of what we've 6 heard referred to as unconventional production in 1996, 7 or has that been a more recent development? 8 MS. BISBEY-KUEHN: There was unconventional 9 drilling at that time, as well. 10 MR. HISER: Was it as prevalent as it is now? 11 MS. BISBEY-KUEHN: Probably -- I would say no. 12 MR. HISER: Thank you. 13 So you said that the NM -- NMOGA analysis 14 didn't take into account estimated leak rates, including 15 the presence of large emitters relative to those that 16 were found in the 2016 CTG estimates. 17 Does the 2016 CTG actually include large 18 emitters, or is that information we've heard from other 19 sources? 20 MR. PALMER: I am not sure. 21 MR. HISER: Thank you. 22 And then there's another statement on page 65 23 that NMED has concluded it's beyond the scope of this 24 rulemaking for the Board to conduct a literature review 25 on fugitive emissions.

2471 1 And so I guess once again that goes to your 2 concern that you think we, as industry, need to provide 3 that to you, not that you need to do those or -- that 4 work? 5 MS. BISBEY-KUEHN: So we received extensive 6 testimony from both -- from all stakeholders, and both 7 stakeholder groups cited opposing scientific studies 8 that supported their own position, and it was 9 numerous -- numerous studies supporting their own 10 position. And so it's not -- it's not within the scope 11 of this rulemaking to do a meta-analysis, which is what 12 it would take to review all of those peer-reviewed 13 scientific studies, to come up with new emission factors 14 for New Mexico sources. 15 That is well beyond the scope of this 16 rulemaking, and so we correctly relied upon accepted 17 emission factors and the CTG which is -- provides a 18 model rule for states doing just what we are here doing 19 today. 20 MR. HISER: So your position is that if you 21 have an EPA document additional testimony by other 22 parties is really not relevant to the Board's 23 consideration. 24 MS. BISBEY-KUEHN: No. That's not what I 25 stated.	2473 1 federal regulations can have -- and we just went through 2 a new administration rolling back federal requirements, 3 and so formalizing those requirements in the state rule 4 establishes certainty about what those inspection 5 frequencies are, and removes the possibility that new 6 federal administrations can roll back those standards. 7 MR. HISER: And my question to you is didn't 8 you solve that issue by the change you made to 9 Section 112A.(10)? 10 MS. BISBEY-KUEHN: We didn't for those 11 facilities where we think it's an acceptable level of 12 frequency, but that is where we're -- we've only agreed 13 to that for one specific type of operation within this 14 sector, and it's not appropriate for those remaining 15 upstream and midstream operations. 16 MR. HISER: Okay. 17 And then this looks like it's a Mr. Palmer 18 question. 19 On the bottom of page 67 of the rebuttal 20 testimony, there are a series of discussions about OGI 21 and Method 22 instrument monitoring at these facilities. 22 Why were you recommending at that time these 23 provisions, Mr. Palmer? 24 MR. PALMER: Which are you referring to 25 specifically?
2472 1 MS. KATZ: And I believe once again we've said 2 that we are asking the parties to put that testimony on 3 for the Board, for the Board's consideration, because we 4 did not have a chance to be able to process all of it. 5 MR. HISER: On page 66 you go back to the Quad 6 0 and Quad 0a and expressed a concern that they may be 7 revised as a basis for not allowing use of Quad 0 or 8 Quad 0a to demonstrate attainment. 9 Haven't you already addressed that concern, 10 though, Ms. Kuehn, with provisions that you made in 11 Section 20.2.50.112, I think it's C -- A.(10), which 12 freezes the date of those programs as of the effective 13 date? 14 MS. BISBEY-KUEHN: I think you're asking sort 15 of two different questions. 16 We don't agree that Quad 0 and Quad 0a are 17 effectively controlling fugitive emissions since we are 18 proposing to go beyond those federal requirements, which 19 is what we are required to do to -- in order to reduce 20 VOC emissions from sources. 21 MR. HISER: Not to contradict you, Ms. Kuehn, 22 but your statement is that your -- that the purpose of 23 this is to provide statewide reg that is not subject to 24 changes that occur at the federal level. 25 MS. BISBEY-KUEHN: We were highlighting that	2474 1 MR. HISER: The bottom of page 67, lines 13 2 through 23 in particular. It says NMED is proposing 3 changes to the LDAR inspection frequencies and emission 4 thresholds to align with Colorado Reg 7, and accepting 5 NMOGA's proposal regarding gas processing plants and 6 gathering and boosting stations. If that refreshes your 7 memory. 8 MR. PALMER: I believe I'm going to defer to 9 Ms. Kuehn on that, because this is part of our rebuttal 10 testimony that we've gone back to the earlier version of 11 the rule. And so -- 12 (Simultaneous discussion.) 13 MR. HISER: -- at the rebuttal time and the 14 rationale that was advanced by you and Ms. Kuehn for 15 this provision. 16 MR. PALMER: I'm going to just say that we are 17 going back to the earlier version of the rule. 18 MR. HISER: Madam Hearing Officer, I've asked 19 a pretty clear question, and I think it's clear the 20 witness is not answering. 21 HEARING OFFICER ORTH: So I remember Ms. Kuehn 22 earlier referencing the fact that they had simply 23 reverted. 24 I'm sorry. Did -- do I misunderstand that 25 you're asking a different question of Mr. Palmer?

2475 1 MR. HISER: I'm asking the question for why 2 they switched to the position in their rebuttal, which 3 I'm entitled to know, because that's their testimony in 4 rebuttal. They can change their mind, but I'm entitled 5 to know the rationale for why they moved at that point 6 in time. 7 HEARING OFFICER ORTH: All right. 8 Mr. Palmer, can you answer the question? 9 MS. KATZ: And that's actually a question for 10 Ms. Kuehn. 11 So can Ms. Kuehn please answer that question? 12 MR. HISER: Absolutely. If Ms. Kuehn is more 13 appropriate, Ms. Katz, I'm fine with -- 14 (Simultaneous discussion.) 15 MS. KATZ: She's already stated it, but she 16 can state it again. 17 (Simultaneous discussion.) 18 MS. BISBEY-KUEHN: We will state it again. 19 We were attempting to provide a middle ground 20 proposal for the Board's consideration that balance the 21 two competing and opposing sets of information that was 22 provided by -- by stakeholders. 23 MR. HISER: Okay. 24 So you say you were trying to balance. 25 I'd like to understand what the balancing was	2477 1 might be for either one of you. It's on page 68 of your 2 rebuttal. 3 You state that NMED is updating the emissions 4 reductions and cost estimate spreadsheet to reflect the 5 revised frequencies and will submit the updated 6 spreadsheet prior to the hearing to allow time for the 7 other parties to review. 8 What exhibit number is that, that was updated 9 and submitted to the other parties? 10 MS. BISBEY-KUEHN: I'm sorry. What -- 11 MR. HISER: It may be a question for you. 12 MS. KATZ: And I don't believe -- I believe 13 once we went back to the previous proposal, then we 14 wouldn't have been updating those at -- 15 MR. HISER: Okay. 16 So that was not -- you didn't -- you didn't do 17 it because you reverted, is your testimony? 18 MS. BISBEY-KUEHN: Correct. 19 MR. HISER: Thank you, Ms. Kuehn, for that. 20 And then at the -- throughout your testimony 21 you state in a couple places, and I think the one here 22 is on page 68, while NMED is proposing to revise the 23 monitoring frequencies, NMED will consider further 24 testimony provided by any of the parties that would 25 support a recommendation that the Board adopt different
2476 1 that you were considering as you were making that 2 decision. 3 MS. BISBEY-KUEHN: That we have two opposing 4 stakeholder groups providing sets of scientific data 5 that support their own position, that either -- so we 6 have one stakeholder group saying that we have 7 overestimated the costs, radically overestimated the 8 costs, and then the leak rates are far, far fewer than 9 what EPA believes they are and what the Department 10 believes they are, and then a competing set of 11 stakeholder positions that say we have radically 12 underestimated the cost of these, and that the leak 13 rates are much, much, much higher, orders of magnitude 14 higher than what EPA and the Department believes they 15 are. 16 And so between those two opposing sets of 17 information, data, cost analysis, we were attempting to 18 strike a balance between those two competing data sets. 19 MR. HISER: Okay. 20 And at least at the time of the rebuttal, that 21 balance had shifted in favor of slightly less frequent 22 LDAR; is that correct? 23 MS. BISBEY-KUEHN: It shifted. Yes. 24 MR. HISER: Okay. 25 This is perhaps a question for -- well, it	2478 1 frequencies and/or cost effectiveness estimates; is that 2 correct? 3 MS. BISBEY-KUEHN: Yes. 4 MR. HISER: Except that you've moved to 5 exclude all the NMOGA testimony on those issues, more or 6 less; is that true? 7 MS. KATZ: Objection. 8 MS. BISBEY-KUEHN: No. 9 MS. KATZ: We didn't move to exclude all the 10 testimony, mischaracterizing our -- 11 (Simultaneous discussion.) 12 MR. HISER: Thank you. 13 Madam Hearing Officer, that's all my questions 14 for Ms. Kuehn and Mr. Palmer. 15 HEARING OFFICER ORTH: Thank you very much, 16 Mr. Hiser. 17 Are there other parties with questions of the 18 Department panel? Please turn on your camera. 19 I don't see anyone. 20 In that case, we will turn to questions from 21 the Board. 22 While I'm doing that, in the event you're an 23 attendee on this platform and have a question, please 24 reach out through the chat. 25 Madam Chair, do you have questions?

2479 1 CHAIR SUINA: Thank you, Madam Hearing 2 Officer. 3 And I appreciate the panel and discussion and 4 the cross. 5 At this time I don't have any additional 6 questions. 7 HEARING OFFICER ORTH: Thank you. 8 Vice-Chair Trujillo Davis. 9 VICE-CHAIR TRUJILLO DAVIS: I don't have any 10 additional questions, and I do appreciate the -- the 11 discussion up until this point. Thank you. 12 HEARING OFFICER ORTH: Thank you. 13 Member Cates? 14 Member Bitzer? 15 MEMBER BITZER: I was waiting for Demi Moore, 16 Jack Nicholson and Tom Cruise to come on and say "You 17 can't handle the truth!" 18 Anyway, no, I don't have any questions, but I 19 enjoyed the lively of that one -- the lively discussion. 20 Thank you. 21 HEARING OFFICER ORTH: Thank you. 22 Member Garcia? 23 MEMBER GARCIA: No questions. Thank you. 24 HEARING OFFICER ORTH: Thank you. 25 And Member Honker.	2481 1 We do have an e-mail from Ms. Fox, sent a 2 little more than an hour ago, identifying the slides 3 that NMED, EDF and Clean Air Advocates believe reflect 4 information from the two slides with data that was 5 offered, in my opinion, late. Those slides are 10, 11, 6 29, 31, 32, 34, 35, 38, 46, 47, 48, 50 and 52 through 7 56. 8 Now, as I understand, again just to summarize 9 my feelings about it, I believe that they should be 10 excluded from the Board's consideration because they 11 reflect data that NMOGA has had since July that was 12 offered on the afternoon of the fourth day of hearing. 13 Your counsel, Ms. Soloria, advised you to hear 14 the evidence and to take up the question of whether it 15 should be, A, excluded from deliberations, or, B, 16 included with perhaps an opportunity for the parties who 17 would be prejudiced by the inclusion of the data in the 18 record without an opportunity to rebut it, thus 19 necessitating a reopening of the record. But again the 20 Board would not be reviewing the exclusion from 21 deliberations -- oh, yes, until the beginning of 22 deliberations. 23 So it's -- let me put it this way. I guess it 24 sounds as though we would proceed, Mr. Hiser, and the 25 other counsel, with the understanding that the Board
2480 1 MEMBER HONKER: No questions. Thank you. 2 HEARING OFFICER ORTH: All right. Thank you. 3 Ms. Katz, will there be any redirect? 4 MS. KATZ: No, nothing from me at this time. 5 Thank you, Madam Hearing Officer. 6 HEARING OFFICER ORTH: All right. Thank you 7 so much, Ms. Kuehn and Mr. Palmer. 8 Let's see. It is about five after 12:00. 9 I wouldn't necessarily want to put anyone in 10 the position of just needing to put on 10 minutes of 11 testimony. We would be going from here -- let me just 12 see where we'd be going from here. 13 We would be going to Mr. Smitherman. 14 MR. HISER: Madam Hearing Officer, I would 15 need to check with Mr. Smitherman about our effort to 16 rejuggle our slides. So it might be better to start 17 with a different industry or other party witness while 18 we're trying to accommodate your ruling from earlier 19 today. 20 HEARING OFFICER ORTH: All right. Well, 21 let's -- you know what? Let's spend just a little more 22 time on -- on that, then, and then we'll break for lunch 23 and come back at 1:00. 24 And, please, any counsel who have something to 25 offer here.	2482 1 would not be deciding on exclusion until the beginning 2 of their deliberations. 3 So if Ms. Soloria has heard this summary and 4 I've said it wrong, I would invite her to leap back onto 5 the screen. Otherwise I'll accept counsel's comments. 6 MS. SOLORIA: Madam Hearing Officer, this is 7 Counsel Soloria. 8 And I agree that you have summarized my advice 9 and what we discussed accurately. Thank you. 10 HEARING OFFICER ORTH: All right. Thank you. 11 Ms. Fox, do you have an observation? 12 MS. FOX: Thank you, Madam Hearing Officer. 13 I have nothing to add, except that I would 14 just again emphasize that what NMOGA would do is make a 15 proffer of evidence and not give the evidence itself. 16 HEARING OFFICER ORTH: All right. Thank you. 17 Ms. Soloria, would you leap back on, please, 18 and clarify your advice there for the Board. 19 MS. SOLORIA: Yes. My -- as I stated earlier, 20 my understanding and my advice for the Board would be at 21 this juncture to consider a proffer of the evidence. I 22 do believe that, as stated by NMOGA's counsel, they 23 should have a reasonable opportunity at this point to 24 ready that proffer, for the presentation through their 25 witness, and that it would be considered as a proffer

2483 1 right now. The Board would be exposed to it, but they 2 would make the ultimate decision whether or not to 3 consider it as evidence at the top of their 4 deliberations. 5 HEARING OFFICER ORTH: Okay. 6 Anything to add, Ms. Katz? 7 MS. KATZ: No, nothing from me. 8 HEARING OFFICER ORTH: Mr. Hiser? 9 MR. HISER: Madam Hearing Officer, are you 10 asking me to explain what Mr. Smitherman would proffer, 11 or are you asking Mr. Smitherman to briefly state what 12 he would state about the slides? It's little bit 13 unclear to me whom you're asking to do that. 14 HEARING OFFICER ORTH: All right. What I'm 15 trying to do is honor Ms. Soloria's role in advising the 16 Board. 17 Ms. Soloria, what would you advise? 18 MS. SOLORIA: I would advise that it be done 19 at this point through counsel. I think it's probably a 20 clearer distinction between a proffer versus what is 21 evidence if it's done through counsel versus a witness. 22 So I -- in that sense I retract what I think I was 23 unclear a minute ago. And I do think that's more in 24 keeping with it being a proffer, you know, in any other 25 case rather than a presentation of -- of admitted	2485 1 objectionable; the evidence and testimony that should -- 2 to the extent it merely reflects the new data from the 3 spreadsheets should simply be made part of the proffer 4 through your lips, Mr. Hiser; and then perhaps a third 5 category in which if you want to point to 6 Mr. Smitherman's direct testimony, perhaps we should 7 just take it subject to objection. 8 Because I don't want to clutter up the record 9 while Mr. Smitherman is speaking with a lot of argument. 10 I'd like to move through this. 11 MR. HISER: Okay. So my understanding is -- 12 and I will ask Ms. Katz, because I think she's speaking 13 to slides 10 and 11, and I'm trying to look at what the 14 slides are at the same time. 15 This is our example of the model plant in 16 response to the question, but -- so on this I assume 17 that you're looking for a proffer, Ms. Katz; is that 18 correct? 19 MS. KATZ: Yeah. I believe that the -- yeah, 20 the proffer would be right as Ms. Soloria stated. Those 21 are slides that we identified as containing new 22 information that we haven't seen previously. 23 MR. HISER: Okay. So our proffer on this is 24 that in the direct testimony there were tables that 25 provided information about a NMOGA model plant. In the
2484 1 evidence. 2 HEARING OFFICER ORTH: All right. Thank you. 3 That's what I -- I would have offered, as 4 well. 5 Any questions about any of this? 6 MR. HISER: So, Ms. Orth, I don't believe that 7 we necessarily agree with Ms. Fox's rather 8 latitudinarian approach of your ruling earlier today. 9 There's a number of items that she's striking that are 10 from Mr. Smitherman's direct testimony where he refers 11 to facts and figures that are set forth in the NMOGA 12 comments, which are in the administrative record, or you 13 call the record proper, and where that needs to be 14 considered in light of what he said in order to 15 understand what Mr. Smitherman's testimony is. 16 There are other parts of her testimony which I 17 think we can do a proffer on, and I'm happy to do that, 18 I guess, at this time as best I can, given that we've 19 been in hearing the whole time since I was asked to do 20 this. 21 HEARING OFFICER ORTH: Okay. Thank you, 22 Mr. Hiser. 23 So it sounds as though there might be, then, 24 three categories of evidence coming in through 25 Mr. Smitherman, the evidence and testimony that is not	2486 1 rebuttal there were questions about what that NMOGA 2 model plant is. In NMOGA's testimony in Exhibit -- I 3 believe it's 27, NMOGA provided the greenhouse gas 4 reporting data. 5 Mr. Smitherman's testimony would have 6 explained that he took that data in Exhibit 27, divided 7 by the number of well counts, divided the number of 8 wells by two, to calculate the number of facilities, and 9 then divided the number of pieces of equipment by the 10 number of facilities, to come up with a so-called 11 Greenhouse Gas Reporting Program model plant, which is 12 not very different, honestly, from the -- it's a little 13 bit different from the CTG model. 14 HEARING OFFICER ORTH: Okay. Thank you. 15 I'm wondering, though, if it would be helpful 16 to break for lunch, Mr. Hiser. 17 MR. HISER: Yeah. I mean, would it be 18 helpful -- we could put together -- maybe Ms. Fox could 19 provide a little bit more explanation behind why she 20 thinks certain slides -- I think we understand 52 to 21 56 -- Tannis, Ms. Fox, why -- your objections are to 22 those, but -- and I think we understand 10 to 11, but we 23 would be helped if you could provide maybe a line about 24 what the questions are about the other slides, so that I 25 can tailor it more specifically to what your concern is.

2487 1 MS. FOX: That sounds good, Mr. Hiser. 2 We collaborated with NMED and Mr. Palmer on 3 this list, and so we'll provide you that information. 4 MR. HISER: I think our particular questions 5 are on slides 29 through 46, if that -- yeah, between 6 those two -- between 29 and 46 are the ones that we had 7 the most question about what the concern was. 8 And so, Madam Hearing Officer, why don't we 9 postpone this to the end of the day so that we don't 10 waste any more hearing time, and we'll move forward, and 11 I may come back and say that there are a couple slides 12 in the 29 to 46 range which we think are in the direct, 13 and maybe we can hash that out then, and then on the 14 proffers we can push all that back to the end of the 15 hearing, so we're not using people's feisty period when 16 they're awake on those issues -- 17 HEARING OFFICER ORTH: All right. 18 MR. HISER: -- or if that makes sense. 19 HEARING OFFICER ORTH: It does make sense. 20 Thank you, Mr. Hiser. 21 It's 12:16. Let's break until 1:00. We'll 22 return for public comment and proceed as you've just 23 described. 24 Thank you, all. 25 MR. HISER: Thank you, Madam Hearing Officer.	2489 1 to five minutes. 2 So let me find Senator Pope first. 3 All right. I am not seeing Senator Pope. 4 Let me go to Commissioner Long. 5 Commissioner Long, I've unmuted you. 6 Can you hear me? 7 MS. LONG: Good morning. 8 Yes, ma'am. I appreciate you. 9 Can you hear me okay? 10 HEARING OFFICER ORTH: Yes. Your voice is 11 coming through clearly. 12 If you would please spell your name for the 13 transcript. 14 MS. LONG: It's R-E-B-E-C-C-A L-O-N-G. 15 HEARING OFFICER ORTH: Thank you very much. 16 Raise your right hand. 17 Do you swear or affirm to tell the truth? 18 MS. LONG: I do, yes. 19 HEARING OFFICER ORTH: Thank you. 20 21 22 23 24 25
2488 1 (Proceedings in recess from 12:16 p.m. to 2 1:00 p.m.) 3 HEARING OFFICER ORTH: Let's come back from 4 the lunch break, please. 5 Good afternoon. 6 My name is Felicia Orth. I'm the Hearing 7 Officer appointed by the Environmental Improvement Board 8 to conduct a hearing in EIB 21-27 on ozone precursors. 9 We are in day eight of the hearing and have 10 reached the 1:00 p.m. public comment session. 11 I will call expressly on those of you who 12 reached out to the Board administrator, Pam Jones. If 13 you are on the platform to offer public comment and did 14 not reach out to the administrator, I'm still happy to 15 take your comment. Reach out, please, in the chat. And 16 if you have any trouble with the chat function, which is 17 enabled for everyone, please reach out to Pam at (505) 18 660-4305. 19 I'll call on you in this order, Harold Pope, 20 Rebecca Long, George Greenlee, Elizabeth Ortega, Lori 21 Walters, Shelley Mann-Lev, Patricia Stern, Jonathan Sena 22 and Jesse Barnes. 23 Three things about public comment. It is 24 taken under oath, as with all testimony before the 25 Board, it is taken by audio, not video, and it's limited	2490 1 REBECCA LONG 2 having been first duly sworn or affirmed, gave 3 public comment as follows: 4 PUBLIC COMMENT 5 HEARING OFFICER ORTH: I'm going to start your 6 five minutes now. 7 MS. LONG: Okay. Thank you. 8 I appreciate this opportunity today. 9 So I am the Lea County Commission Chair, and 10 my name is Rebecca long. 11 I just want to give a few comments of what the 12 oil and gas industry does for my county. 13 Lea County has about 75,000 people, and oil 14 and gas provides over 18,000 good-paying jobs. Oil 15 and -- oil and gas production, it's the foundation of 16 New Mexico's economy. We all know that. And it's by 17 far the largest employer in Southeastern New Mexico. 18 Some of the particulars here are we have 844 19 teachers in 37 schools in Lea County. The oil and gas 20 industry provides over 46 million a year to fund our K 21 through 12 schools, and it also provides 2.2 million in 22 funding for higher education in Lea County. So you can 23 see that our education system is highly dependent on the 24 oil and gas industry. 25 But we also have 40 megawatts of solar and

2491 1 50 megawatts of wind energy. So we do embrace all of it 2 here in Lea County. 3 You know, our small businesses depend on sales 4 of their goods and services to the folks that work in 5 the oil and gas industry. So again, you know, our whole 6 economy is -- surrounds the oil and gas industry here. 7 Last year oil and gas provided 2.8 billion to the state 8 budget and 1.4 billion for public schools and higher 9 education. We all know that we are a state that 10 benefits greatly from our natural resources. 11 So I guess today what I really want to say, 12 besides give you a little bit of what's going on in Lea 13 County, you know, we all want a clean environment. We 14 live here, and that's very, very important to us. And 15 what I'm asking the Board to consider is regulation that 16 allows the oil and gas industry to continue providing 17 this large volume of jobs while investing in new 18 technology and equipment that promotes a clean 19 environment. 20 Flexible, regulatory approaches recognize and 21 encourage the adoption and development of creative 22 solutions to reduce emissions, and we are all about 23 reducing emissions, and we -- we are good partners, and 24 we want to continue to be good partners with everyone in 25 New Mexico.	2493 1 representing District 23 In Northwest Albuquerque in 2 Bernalillo County. 3 I would like to thank the Environmental 4 Improvement Board for the opportunity to provide 5 comment. 6 I would like to give full support of Governor 7 Michelle Lujan Grisham's call for nation-leading oil and 8 gas pollution rules. In order for this to become a 9 reality, though, the EIB must strengthen the New Mexico 10 Environment Department's proposed ozone precursor rules 11 to protect those living closest to development. 12 Oil and gas pollution are negatively impacting 13 our air, water and health, but rural communities, tribal 14 communities, children and even our elderly are 15 especially at risk. I think there's around 130,000 New 16 Mexicans that live within about a half mile of oil and 17 gas development, including communities of color in the 18 BIPOC community, which disproportionately impact them 19 with climate change and air pollution. 20 Leaks due to equipment malfunction and lack of 21 maintenance account for about 70 percent of oil and gas 22 industry's emissions statewide. I am encouraged by the 23 in fact that leading producers at the federal and state 24 level are standing up to support firm regulations that 25 cut pollution and methane and protect our communities.
2492 1 So I appreciate your time today. Thank you. 2 HEARING OFFICER ORTH: Thank you, Commissioner 3 Long. 4 I believe I just saw Senator Pope join the 5 platform. So we'll go back to -- 6 Senator Pope, can you hear me? 7 MR. POPE: Yes, I can. 8 HEARING OFFICER ORTH: I can hear you clearly. 9 If you would please spell your name for the 10 record. 11 MR. POPE: H-A-R-O-L-D, last name Pope, 12 P-O-P-E, and J-R for Junior. 13 HEARING OFFICER ORTH: Thank you very much. 14 If you would raise your right hand. 15 Do you swear or affirm to tell the truth? 16 MR. POPE: I do. 17 HEARING OFFICER ORTH: Thank you. 18 HAROLD POPE, JR. 19 having been first duly sworn or affirmed, gave 20 public comment as follows: 21 PUBLIC COMMENT 22 HEARING OFFICER ORTH: I'll start your five 23 minutes now. 24 MR. POPE: Good afternoon. 25 My name is Senator Harold Pope, Junior,	2494 1 This will ensure that New Mexico's regulations lead the 2 nation, which is also important when the EPA considers 3 federal rules. 4 Setting strong rules at the state level sets a 5 good bar for forthcoming federal methane rules that can 6 help protect New Mexicans, even from states like Texas 7 whose regulations are limited. New Mexico can lead and 8 show the nation how to protect our air, water and 9 health. 10 We'd like to commend the NMED once again for 11 putting forward a strong proposal. I would propose 12 adding three critical improvements that the EIB should 13 make to protect communities and address major sources of 14 pollution. 15 One, I'd like to see more protections to those 16 living closest to development by requiring more frequent 17 inspections to find and fix leaks. 18 Number two, that we ensure strong requirements 19 for operators to control pollution during the completion 20 of an oil and gas well, as well as when they redevelop 21 these wells. 22 And finally, three, strengthen requirements to 23 cut pollution from pneumatic controllers that are used 24 in oil and gas production. 25 Many of these emission leaks are avoidable,

2495 1 and we can avoid many of the serious health problems 2 that many in our frontline communities are facing, 3 especially those in the BIPOC communities. Emissions 4 from oil and gas operations can take toxic, even deadly 5 gases like hydrogen sulfide, toluene, xylene and 6 benzene. 7 Methane leaks also release volatile organic 8 compounds, which can also be building blocks for many of 9 the ozone pollution that we're really concerned with, 10 which can also harm our respiratory system, trigger 11 asthma attacks and worsen emphysema. 12 I speak to you today not only as an elected 13 official, but also as a voice for our youth that is 14 asking us to do more to protect our environment and 15 health. 16 Thank you once again for the work that you're 17 doing and giving me this opportunity to speak. 18 HEARING OFFICER ORTH: What'd I just do? 19 Thank you, Senator. 20 Excuse me. 21 Let me go to George Greenlee. 22 I don't see Mr. Greenlee by name. I think I 23 saw a call-in user. 24 Caller 13, please tell us your name. 25 Caller 13?	2497 1 MS. WALTERS: Okay. Thank you again. 2 My name is Lori Walters, and I work for a 3 small company called San Juan Resources, whose main 4 operations are located in New Mexico. 5 And my background is I've been working in the 6 financial accounting side of oil and gas for over 25 7 years. 8 I'm speaking here today to provide a viewpoint 9 from a small business perspective and US citizen of the 10 current regulations on methane emissions. I am 11 concerned that additional administrative burden will 12 have a major impact on small business and may ultimately 13 put many oil -- small oil and gas operators in a 14 situation where they may need to prematurely plug and 15 abandon wells due to regulations or costly equipment 16 upgrades and additional administrative and reporting 17 requirements. 18 According to the New Mexico Tax Research 19 Institute, production -- oil production could drop by 20 13 percent, and natural gas production could drop by 21 23 percent. This would greatly impact New Mexico 22 budgets with decreased revenue and increase unemployment 23 for oil field workers. 24 Every citizen wants a clean environment, and I 25 think the US does a pretty good job of keeping a clean
2496 1 All right. That's the only call-in user. 2 I'll move, then, to Elizabeth Ortega, see if 3 Ms. Ortega is on the platform. 4 No. 5 And then Lori Walters. 6 Oh, I see Ms. Walters. 7 Ms. Walters, can you hear me? 8 MS. WALTERS: Yes, I can. 9 Can you hear me? 10 HEARING OFFICER ORTH: Yes. I can hear you 11 clearly. 12 If you would please spell your name. 13 MS. WALTERS: It's L-O-R-I, and my last name 14 is W-A-L-T-E-R-S. 15 HEARING OFFICER ORTH: Thank you. 16 And raise your right hand. 17 Do you swear or affirm to tell the truth? 18 MS. WALTERS: Yes, ma'am. 19 HEARING OFFICER ORTH: Thank you. 20 LORI WALTERS 21 having been first duly sworn or affirmed, gave 22 public comment as follows: 23 PUBLIC COMMENT 24 HEARING OFFICER ORTH: I'll start your five 25 minutes now.	2498 1 environment in the US. These type of mandates in New 2 Mexico and the US do not even consider the methane 3 emissions from foreign developing countries like China 4 and Russia. Since foreign countries manufacture many of 5 our products used in the US with limited environmental 6 regulations, the US is in effect transferring their 7 consumed methane emissions to foreign countries. 8 This is really a US consumption problem. US 9 manufacturers like oil and gas companies are at a huge 10 disadvantage compared to these foreign companies since 11 the US companies are required to install costly 12 equipment and implement additional regulation 13 procedures. There is an ultimate price that will be 14 paid by the US consumer, primarily the lower and middle 15 class, with higher oil and gas prices and dependence on 16 foreign countries for critical energy supply. 17 As a parent, I want my children to do better 18 than me. I would guess that's the American dream. I am 19 deeply concerned these type of mandates and the rising 20 US debt will ultimately cripple this American dream. 21 I would like to conclude as an employee of a 22 small business. The small business exemption is 23 critical in any final rule. Larger businesses can 24 implement certain regulations more readily because they 25 can purchase equipment in large quantities, potentially

2499 1 discounted under a contract. Large businesses can hire 2 additional personnel to help in reporting such mandates. 3 For a bis -- for a small business who operate 4 under conservative budgets, these type of mandates could 5 ultimately cripple their business model. 6 Small businesses are so critical to the US and 7 New Mexico economies that a crippling of these 8 businesses could have far-reaching devastating 9 consequence to the economy as a whole. Small businesses 10 are like the small cells in the human body. Each cell 11 supports the body as a whole, just as small businesses 12 support the general overall economy. 13 On a personal note, I have seen small 14 business -- the small business I work at support me 15 while I was sick with cancer. Although small businesses 16 are exempt under the mandates when it comes to family 17 leave, my company did everything they could to support 18 me during this time. This is what small business do. 19 They support their employees, and they support their 20 local economies. 21 Instead of the local government issuing 22 burdening regulations on small business, it's time for 23 governments like New Mexico to support small business 24 and its citizens who work for these companies. I feel 25 the American dream is at stake.	2501 1 Improvement Board who is considering this testimony and 2 making these important decisions. 3 My name is Shelley Mann-Lev, and I have the 4 honor and privilege of serving as the president of the 5 New Mexico Public Health Association. The mission of 6 the New Mexico Public Health Association is to promote 7 public health practice, policies and systems that 8 support health equity in New Mexico. 9 We have over 500 members, public health 10 practitioners and students, who are all deeply committed 11 in their work and education lives to supporting the 12 well-being of all New Mexicans and to address 13 disparities, health equity issues that negatively impact 14 those who are most vulnerable and underresourced. 15 The issues at stake here, ozone, pollution, 16 methane emissions, deeply, deeply impact our communities 17 and impact health equity in New Mexico. I know you've 18 heard many statistics and that you are all aware of, you 19 know, the large numbers of New Mexicans who are directly 20 impacted, and, of course, why you are present here and 21 doing this work, that we are dealing with emissions and 22 compounds that have both immediate health impacts and 23 long-term health impacts for everyone. 24 Those communities that are most immediately 25 impacted, the children and elderly and communities of
2500 1 That's all I have to say. 2 Thank you. 3 HEARING OFFICER ORTH: Thank you, Ms. Walters. 4 We go now to Shelley Mann-Lev. 5 I have unmuted you. 6 MS. MANN-LEV: Thank you so much. 7 My name is Shelley Mann-Lev. 8 Can you hear me? 9 HEARING OFFICER ORTH: Hold on. Hold on. 10 Would you spell your name, please. 11 MS. MANN-LEV: Sure. Shelley, S-H-E-L-L-E-Y, 12 M-A-double-N-hyphen-L-E-V-as-in-Victor. 13 HEARING OFFICER ORTH: Thank you. 14 And raise your right hand. 15 Do you swear or affirm to tell the truth? 16 MS. MANN-LEV: I do. 17 HEARING OFFICER ORTH: Thank you. 18 SHELLEY MAN-LEV 19 having been first duly sworn or affirmed, gave 20 public comment as follows: 21 PUBLIC COMMENT 22 HEARING OFFICER ORTH: I'll start your five 23 minutes now. 24 MS. MANN-LEV: Thank you so much. 25 And thank you so much to the Environmental	2502 1 color, black, indigenous, Hispanic, Latinx 2 communities -- many people in those communities already 3 are suffering from those health impacts, and we have got 4 to as a state, as a nation, as a world do what -- 5 everything that we can to minimize those harmful impacts 6 and protect the well-being and health of those who are 7 most vulnerable. 8 Ozone, methane emissions -- we know that 9 methane in particular has one of the strongest impacts 10 on global climate change, the global climate emergency 11 that we find ourselves in today. 12 I want to again, as one of the other people 13 who testified, speak to and appreciate the work that's 14 been done by Governor Lujan Grisham and the New Mexico 15 Environmental Department and urge that we take this 16 critical opportunity to do all that we can in terms of 17 our rules and regulations to reduce the major sources of 18 pollution and to add in the three things I've heard you 19 mention just before, as well. 20 To protect those living closest to development 21 by requiring more frequent inspections to find and fix 22 leaks. Rules that don't have inspections aren't 23 necessarily followed. It's difficult to change 24 long-standing behaviors and practices, and so we need 25 both inspections and enforcement to ensure that the

2503 1 rules that we adopt will, in fact, be implemented. 2 The second area is to ensure that strong 3 requirements are in place for all operators. It needs 4 to be an equitable playing field to control pollution 5 during the completion of an oil or gas well, as well as 6 when they redevelop an existing well. 7 And finally, the third area, opportunity to 8 strengthen the current requirements is to cut pollution 9 from pneumatic controllers that are used in oil and gas 10 production. These devices are the second largest source 11 of oil and gas methane emissions in New Mexico, and we 12 need to in New Mexico for the Environment Department to 13 require companies to inspect these pneumatics for leaks 14 and accelerate the timeline to retrofit equipment with 15 zero bleed or zero emission pneumatic controllers. 16 As a dedicated public health professional who 17 has spent decades in New Mexico caring for the 18 well-being of children in particular and all New 19 Mexicans, I know firsthand how much our communities have 20 suffered from air pollution and climate change. 21 I want to thank you again for considering how 22 we can provide even stronger leadership for our state 23 and for our country, especially for those who are most 24 vulnerable. 25 Thank you so much for your attention.	2505 1 And I want to thank the Members of the Board 2 for this time. We appreciate your leadership and your 3 due diligence in this process. 4 Again my name is Jonathan Sena, and I live in 5 Hobbs, New Mexico. I'm a youth pastor at a local church 6 and a county commissioner here in Lea County. 7 I was born and raised in New Mexico, and I am 8 native New Mexican on my father's side. My family has 9 lived and worked in New Mexico for generations, 10 literally hundreds of years. New Mexico is my home. 11 The oil and gas industry provides me through 12 our funding from parishioners at church and to the 13 county. It provides for my family and provides for me. 14 And I'm so grateful for that. And it provides for so 15 many people in Lea County and throughout New Mexico 16 directly and in my case indirectly. 17 The oil and gas industry pays for the roads 18 that I use to drive my daughter, Gavila, to preschool 19 during the day, and it pays for the parks where I take 20 her to play. The oil and gas industry pays for the 21 diverse police officers, firefighters, county deputies, 22 EMS staff members who serve to keep my family safe every 23 day. 24 The industry supports education, supports 25 first responders and supports health care in our
2504 1 HEARING OFFICER ORTH: Thank you very much, 2 Ms. Mann-Lev. 3 I'll look for Patricia Stern next. 4 I don't see Patricia Stern. 5 Jonathan Sena. Excuse me. Jonathan Sena. 6 Mr. Sena, I've unmuted you. 7 Can you hear me? 8 MS. SENA: Yes, Ms. Orth. 9 Thank you so much for your time. 10 HEARING OFFICER ORTH: Thank you. 11 If you would spell your name, please. 12 MS. SENA: Yes, ma'am. Jonathan, 13 J-O-N-A-T-H-A-N, Sena, S-E-N-A. 14 HEARING OFFICER ORTH: Thank you. 15 And if you would raise your right hand. 16 Do you swear or affirm to tell the truth? 17 MS. SENA: Yes, ma'am, I do. 18 HEARING OFFICER ORTH: Thank you. 19 JONATHAN SENA 20 having been first duly sworn or affirmed, gave 21 public comment as follows: 22 PUBLIC COMMENT 23 HEARING OFFICER ORTH: I'll start your five 24 minutes now. 25 MS. SENA: Thank you, Chair.	2506 1 community. The industry is filled with people who -- 2 who want to work hard, are used to good, solid, level 3 regulations. They want to do it right. And I -- that's 4 what I see. And I see that the oil and gas industry 5 provides jobs for every demographic of our community, 6 especially the Latino community. 7 Our people are hard workers and are grateful 8 for the good salaries they receive from the oil and gas 9 industry. This in turn provides tax dollars for other 10 jobs, other forms of economic development in our 11 community. 12 In Lea County we do not have the mountains and 13 rivers that are available in other parts of New Mexico. 14 What we do have is extraordinary people, and we have 15 also the support of the oil and gas industry to provide 16 jobs, tax dollars to support teachers and police 17 officers and firefighters. The oil and gas industry 18 helps us to build schools and parks and opportunities 19 for our families to move from poverty to 20 self-sufficiency through good jobs. 21 Now, look, I genuinely believe that our state 22 can have fair rules while still reducing emissions and 23 continuing to strengthen our state's biggest and most 24 successful industry. It's important to get feedback 25 from oil and gas producers.

2507 1 Look, we don't want unintended consequences 2 like shutting -- shutting in significant production 3 volumes or even putting small producers out of business. 4 These unintended consequences can harm minority-owned 5 small business owners, people who are my friends and 6 family members and people I go to church with. 7 Oil and natural gas production is a major part 8 of the foundation for our state's economy, and I believe 9 it's critical that the state rules permit the oil and 10 gas industry to continue to grow, create jobs for 11 families, to attract investment and to provide critical 12 funds for our state budget, public schools, while 13 absolutely still making sure our families are safe. 14 The oil and gas industry is proactively 15 working to limit emissions of methane and other 16 greenhouse gases. Producers are investing. I see it. 17 Producers are investing in new technology and equipment 18 and adopting the leading best practices in different 19 operations. 20 And I believe that flexible regulatory 21 approaches recognize and encourage this adoption in this 22 type of development in regard to creative solutions to 23 reduce emissions. 24 So I want to thank you so much for giving me 25 the opportunity to speak today. I appreciate your time.	2509 1 medicine physician currently based in Albuquerque, and 2 I've spent the last 14 years working all around New 3 Mexico, providing primary care. 4 For the last three years, I've been a member 5 of a new group called Primary Care Advocates for Healthy 6 Communities, along with a couple dozen of my fellow 7 primary care providers also with experience working all 8 around New Mexico. We started the group because we have 9 discovered in the course of our work that there are 10 issues much larger than what we can address during our 11 clinical visits with patients that have a huge impact on 12 their health. 13 Obviously, the quality of air that people 14 breathe in communities around New Mexico is one of those 15 issues. The science is clear. The medical science is 16 not debatable. Poor air quality worsens diseases such 17 as asthma, COPD, emphysema and bronchitis, and has a 18 very real impact on our communities. 19 It tends to target the most vulnerable members 20 of our communities, children who suffer from reactive 21 airway disease and asthma, elders who have diseases like 22 COPD, and it tends to target people of color, who are 23 disproportionately affected by the location of these 24 industries that pollute our air quality. 25 The American Lung Association has given three
2508 1 I appreciate your leadership and your service to the 2 State of New Mexico. 3 Thank you so much. 4 HEARING OFFICER ORTH: Thank you, Commissioner 5 Sena. 6 Let's see. We'll go next to Jesse Barnes. 7 I've unmuted you. 8 Can you hear me? 9 MR. BARNES: Yes. Yes. 10 HEARING OFFICER ORTH: Oh. Terrific. 11 Hello. If you would spell your name, please. 12 MR. BARNES: J-E-S-S-E B-A-R-N-E-S. 13 HEARING OFFICER ORTH: Thank you. 14 And raise your right hand. 15 Do you swear or affirm to tell the truth? 16 MR. BARNES: I do. 17 HEARING OFFICER ORTH: Thank you. 18 JESSE BARNES 19 having been first duly sworn or affirmed, gave 20 public comment as follows: 21 PUBLIC COMMENT 22 HEARING OFFICER ORTH: I'll start your five 23 minutes now. 24 MR. BARNES: Thank you for this opportunity. 25 My name is Jesse Barnes. I'm a family	2510 1 New Mexico counties an F grade for ozone pollution this 2 year. Our communities should not have to choose between 3 economic development and health. Responsible 4 regulations are necessary to ensure that every New 5 Mexican is able to breathe healthy air and that industry 6 does not pollute our air quality and damage the health 7 of New Mexicans. 8 I'm very grateful to the Governor and the New 9 Mexico Environmental Improvement Department for taking 10 this issue seriously. 11 I don't want to repeat in depth what Senator 12 Pope and others have already mentioned, but we call for 13 continuing strong regulations and identify three areas 14 which we think that these regulations need to be 15 strengthened. That includes protecting frontline 16 communities by requiring more frequent inspections, 17 ensuring protection during well completion and when 18 redeveloping existing wells, and strengthening 19 requirements to cut pollution from the pneumatic 20 controllers. 21 Thank you for your time. 22 HEARING OFFICER ORTH: Thank you, Dr. Barnes. 23 I will go, then, to Sanders Moore who reached 24 out through chat. Let me see here. 25 I've unmuted you.

2511 1 Can you hear me? 2 Hello? 3 Sanders Moore. 4 He may have stepped away. 5 All right. I have rechecked for those names I 6 called earlier and don't see them on the platform. 7 Let's see here. 8 Try unmuting Sanders Moore one more time. 9 Hello. Can you hear me? 10 No. It's not working. 11 Sanders Moore is saying "I cannot unmute 12 myself on my end." 13 I've done what I can on the platform. We do 14 have several more public comment sessions. So in the 15 event you're able to rejoin us at 5:00, 9:00, 1:00 or 16 5:00 any day, please rejoin us. Thank you. 17 All right. Let's return to the technical 18 case. 19 Mr. Hiser? 20 Or Ms. Katz? 21 If you'd rejoin us on screen. 22 Mr. Hiser, I would ordinarily go to you at 23 this point for Mr. Smitherman's testimony or Mr. Meyer's 24 testimony. 25 MR. HISER: Mr. Meyer is not on -- Mr. Meyer	2513 1 there being two more witnesses between us and them, but 2 if you bear with me for a moment, I think we can get 3 Mr. Holderman over here. 4 HEARING OFFICER ORTH: Thank you. 5 MS. SHEEHAN: Madam Hearing Officer, while 6 we're waiting for Mr. Holderman, if it's okay with you, 7 I could go ahead and present Mr. Copeland. 8 HEARING OFFICER ORTH: All right. 9 How do you feel about that, Mr. Janoe? 10 MS. SHEEHAN: It shouldn't take more than one 11 minute. 12 HEARING OFFICER ORTH: I'm all in favor, 13 Ms. Sheehan. 14 MS. SHEEHAN: Thank you, Madam Hearing 15 Officer. 16 Mr. Cope -- 17 HEARING OFFICER ORTH: All right. 18 MS. SHEEHAN: Mr. Copeland's direct written 19 prefiled testimony, which is GCA Exhibit 15, addressed 20 the GCA's proposed modest amendments to the Department's 21 default monitoring requirements as set forth in the 22 Department's May 6th version of the rule at 23 Section 116C.(1)(e). Since that time, NMED has 24 addressed the GCA's concerns with its provision in NMED 25 Rebuttal Exhibit 23.
2512 1 is not a witness on this issue for us. 2 HEARING OFFICER ORTH: Okay. 3 MR. HISER: I think all we have is 4 Mr. Smitherman. 5 HEARING OFFICER ORTH: All right. 6 And are you ready to present Mr. Smitherman, 7 or will we be coming back? 8 MR. HISER: I think it would be better if we 9 came back, if that's okay. 10 HEARING OFFICER ORTH: All right. That's 11 fine. 12 So let's go to -- should we go to Davis, then, 13 for IPANM? 14 MR. ROSE: Madam Hearing Officer, I don't 15 believe -- excuse me. I don't believe we have any 16 testimony on this issue. Mr. Davis testified as to the 17 application of LDAR to facilities yesterday in 18 connection with that testimony. So I don't think we had 19 any testimony directly with LDAR itself. 20 HEARING OFFICER ORTH: All right. Thank you. 21 So I believe we go to Mr. Holderman. 22 We're obviously -- 23 MR. JANOE: Madam Hearing Officer, we're -- I 24 am policing up Mr. Holderman right now. He was down the 25 hall on another phone call. We -- we -- we anticipated	2514 1 Given this cooperation and in an effort to 2 streamline this proceeding, if parties or Board Members 3 have questions for Mr. Copeland, he's available to 4 answer those. Otherwise, the GCA is satisfied with the 5 admission of Mr. Copeland's resume and testimony, GCA 6 Exhibits 15 and 16 respectively, into the record as 7 support for Section 116C as set forth in NMED Rebuttal 8 Exhibit 23. 9 HEARING OFFICER ORTH: Wow. Thank you very 10 much, Ms. Sheehan. 11 Let me pause a moment in the event any party 12 would like to turn on their camera for questions of 13 Mr. Copeland. 14 Not seeing anyone. 15 Board Members, please wave a hand if you think 16 you would have a question. 17 No. 18 All right. Thank you very much, Ms. Sheehan. 19 I think we're going to move along, then. Thank you. 20 MS. SHEEHAN: Thank you, Madam Hearing 21 Officer. 22 HEARING OFFICER ORTH: Let's see if Mr. Janoe 23 got ahold of Mr. Holderman. Otherwise, we could take 24 Ms. Nolting next. 25 MR. JANOE: Let's move forward with

2515 1 Ms. Nolting. Mr. Holderman is finishing up what he 2 needed to finish up and should be about five or 10 more 3 minutes. 4 HEARING OFFICER ORTH: All right. Thank you, 5 Mr. Janoe. 6 Ms. Gutierrez and -- let's see. 7 MS. GUTIERREZ: I believe Ms. Nolting is 8 ready, as well. 9 HEARING OFFICER ORTH: I believe I made her a 10 panelist. 11 There you are. 12 MS. GUTIERREZ: There she is. 13 HEARING OFFICER ORTH: Go ahead. 14 MS. GUTIERREZ: Thank you. 15 LESLIE NOLTING 16 (Relating to Topic Order 27) 17 having been first duly sworn or affirmed, was 18 examined and testified as follows: 19 DIRECT EXAMINATION 20 BY MS. GUTIERREZ: 21 MS. GUTIERREZ: Madam Hearing Officer, could 22 you please give me screen share permissions? 23 See if I can improve my ability to do this 24 this time. 25 Okay. Are we looking at a slide deck?	2517 1 A. Yes. 2 Good afternoon, Madam Hearing Officer, Madam 3 Chair and Members of the Board. 4 Thank you again for the opportunity to speak 5 with you. 6 As you have heard from the Department, Kinder 7 Morgan and EDF engaged in the issue of leak detection. 8 As a result of that engagement to understand each 9 party's -- and to understand each party's priorities, 10 Kinder Morgan and EDF propose a joint proposal for leak 11 detection at transmission compressor stations. 12 I will be brief because, as NMED testified, we 13 understand that the Department plans to incorporate this 14 joint proposal to an updated red-line, and we have heard 15 no objections from other parties. 16 Under the joint proposal, transmission 17 compressor station operators would have two alternative 18 compliance options. They could either conduct quarterly 19 monitoring, or they could comply with federal New Source 20 Performance Standards with an important caveat. In 21 order to take advantage of this second compliance 22 option, the federal standards -- the federal standards 23 must be at least as stringent as the version of the NSPS 24 Quad 0a in effect on the effective date of Part 50, 25 which is quarterly.
2516 1 Great. Thank you. 2 Ana Gutierrez with Hogan Lovells on behalf of 3 Kinder Morgan. 4 This is testimony relating to equipment leaks, 5 and this relates to Kinder Morgan's direct technical 6 testimony at Exhibit 7, as well as Exhibit 15. 7 Q. Ms. Nolting, as your qualifications have 8 already been presented to the Board, can you please 9 introduce yourself for the record? 10 A. Yes. My name is Leslie Nolting, and I am an 11 EHS manager at Kinder Morgan, focusing on air permitting 12 and compliance. 13 Q. Thank you. 14 And did you submit written direct technical 15 testimony at Exhibit 7 and rebuttal technical testimony 16 at Exhibit 15 regarding leak detection? 17 A. Yes. 18 Q. Do you have any changes to that testimony? 19 And if not, do you adopt that testimony in full today? 20 A. I have no changes to my testimony, and yes, I 21 adopt it in full. 22 Q. Thank you. 23 Could you please summarize for the Board your 24 testimony regarding leak detection and Kinder Morgan's 25 particular request for the Board's consideration.	2518 1 The priority purpose for the joint proposal is 2 twofold. 3 First, to ensure operators are inspecting 4 stations at an appropriately regular frequency, in 5 particular here considering that the fugitive VOC 6 emissions at transmission compressor stations are very 7 low. 8 And second, to eliminate the unnecessary 9 challenges associated with complying with a state LDAR 10 program and a separate and competing federal LDAR 11 program. 12 I'm going to move through a few slides rather 13 quickly, but I can answer any questions after if there 14 is any follow-up. 15 This slide breaks down the emissions profile 16 of one of our stations. The key point here is that 17 while the station on the whole exceeds the VOC PTE 18 thresholds proposed in the original NMED proposal, 19 requiring monthly LDAR, the fugitive emissions component 20 of that total, which is what we would inspect for at 21 leak -- during LDAR surveys, are typically below -- well 22 below one ton per year facility-wide. 23 Because of this extremely low VOC profile, 24 monthly monitoring breaks down to approximately \$17,400 25 per ton of VOC reduced, which is simply not cost

2519 1 effective. 2 The second key goal of the joint proposal is 3 to avoid unnecessary overlap in competition with federal 4 leak detection programs. It is extremely resource 5 intensive with no emissions benefit to manage compliance 6 with two leak detection programs with different 7 requirements. 8 This chart shows just a few of the competing 9 obligations between the state and federal program. 10 With that, we believe that the joint proposal 11 between Kinder Morgan and EDF as shown on the screen is 12 reasonable, and we ask the Board to adopt it. 13 Q. Thank you, Ms. Nolting. 14 Does that conclude your summary of direct and 15 rebuttal testimony on this topic? 16 A. Yes. 17 Q. And in the spirit of streamlining this 18 hearing, we're going to just quickly move through 19 surrebuttal, as well. 20 As for surrebuttal, Ms. Nolting, did EDF 21 present data and calculations in their rebuttal 22 testimony at Exhibit JJJ related to the potential 23 emissions they estimated from transmission compressor 24 stations resulting from inspections less frequently than 25 monthly?	2521 1 proposal between Kinder Morgan and EDF, and we 2 appreciate EDF's engagement on this important issue. 3 However, for purposes of the record, we do feel it's 4 important to state that Kinder Morgan does not agree 5 with the assumptions and the calculations reflected in 6 EDF's Exhibit JJJ. 7 And while I have prepared slides and talking 8 points to offer more detail on our specific concerns 9 with EDF's analysis, in the interest of time, I will 10 refer the Board to my slide deck on this topic, and am 11 happy to answer any questions you have regarding our 12 concerns with EDF's analysis on this issue. 13 MS. GUTIERREZ: Thank you, Ms. Nolting. 14 And I offer Ms. Nolting for cross-examination 15 and questions. 16 HEARING OFFICER ORTH: Thank you, Ms. Nolting 17 and Ms. Gutierrez. 18 Parties, if you have questions of Ms. Nolting, 19 please turn on your camera. 20 I'm not seeing anyone. 21 I'm going to turn to the Board for their 22 questions. 23 While I'm doing that, if you're an attendee on 24 this platform and have a question, please reach out 25 through chat.
2520 1 A. Yes. 2 Q. And specifically did EDF assert that accepting 3 the changes proposed by NMOGA and Kinder Morgan 4 originally for semiannual and quarterly leak detection 5 at compressor stations and gathering and boosting 6 instead of quarterly and monthly would result in up to 7 8,400 additional tons of VOC emissions per year released 8 and up to 34,000 additional tons of methane emissions 9 per year released? 10 A. It -- yes. That's correct. 11 Q. And although Kinder Morgan worked closely with 12 EDF to develop this joint proposal, do you agree with 13 the calculations and assumptions related to transmission 14 compressor stations? 15 A. No, we do not. There were just some basic 16 assumptions that were -- I don't believe were correct. 17 Using a more reasonable set of assumptions, if 18 transmission compressor stations conducted quarterly or 19 semiannual leak detection instead of monthly or 20 quarterly, the differential between the two sets of 21 frequencies would only result in an additional 22 approximately 6.5 tons per year of uncontrolled VOC 23 emissions released from transmission compressor 24 stations. 25 To be clear, we remain supportive of the joint	2522 1 Madam Chair, do you have questions of 2 Ms. Nolting? 3 CHAIR SUINA: Thank you, Madam Hearing 4 Officer. 5 I don't have any questions, but I just want to 6 say, you know, thank you to both parties, EDF and to 7 Kinder Morgan, even though we have some dispute, if you 8 will, debate over the numbers, base numbers, that you 9 could come to a resolution on language. So I appreciate 10 that. Thank you. 11 HEARING OFFICER ORTH: Thank you. 12 Vice-Chair Trujillo Davis. 13 VICE-CHAIR TRUJILLO DAVIS: I don't have any 14 questions at this time, but I'd also like to thank 15 Ms. Nolting for the testimony that she submitted. 16 And that's it. Thank you. 17 HEARING OFFICER ORTH: Thank you. 18 Member Bitzer? 19 MEMBER BITZER: No questions. Thank you. 20 HEARING OFFICER ORTH: Member Garcia? 21 MEMBER GARCIA: (Shakes head.) 22 HEARING OFFICER ORTH: No questions. 23 And Member Honker. 24 MEMBER HONKER: No questions. 25 HEARING OFFICER ORTH: Well, thank you very

2523 1 much. 2 I don't imagine there's any need for redirect, 3 Ms. Gutierrez. 4 MS. GUTIERREZ: Thank you. 5 HEARING OFFICER ORTH: Thank you, both. 6 MS. NOLTING: Thank you. 7 HEARING OFFICER ORTH: I see Mr. Janoe on the 8 screen. 9 Mr. Janoe, do we have Mr. Holderman? 10 MR. JANOE: We are ready to go, Madam Hearing 11 Officer. 12 HEARING OFFICER ORTH: Terrific. 13 Have him turn on his camera -- oh, no. He's 14 sitting next to you, isn't he? 15 MR. JANOE: We're the swap-out team. I -- I 16 wish I could get the technology fixed, I honestly do. 17 HEARING OFFICER ORTH: It's not bad. It's not 18 bad. 19 MR. JANOE: We have tried literally 20 everything. 21 HEARING OFFICER ORTH: No. It's fine. 22 Go ahead. 23 MR. JANOE: Madam Hearing Officer, Madam 24 Chair, Members of the Board, Mr. Holderman will be 25 speaking on the equipment leak and fugitive emissions	2525 1 Although the Department has resolved Oxy USA's 2 concerns with leak repair requirements, Oxy USA 3 continues to believe that the rule should provide 4 exclusions for low-emitting facilities and include 5 alternate leak monitoring methods. Oxy USA also 6 supports also additions by EDF and the other ENGOs on 7 this topic related to occupied areas. 8 Regarding low-emitting facilities, cost of 9 conducting leak surveys at facilities such as satellite 10 facilities, injection facilities and wellhead-only 11 facilities far outweigh the minimal risk of leaks at 12 these locations. 13 Oxy USA requests that the proposed rule be 14 modified to include modified inspection requirements for 15 inactive wellhead sites while maintaining an exemption 16 for other facilities with little or no potential for 17 leaks. As noted in my previous testimony, Oxy USA has 18 proposed definitions for satellite facilities and 19 temporarily abandoned wellhead sites, along with an 20 updated definition of wellhead site in Section 7 that 21 excludes injection well sites and wellhead-only sites. 22 The Department's rebuttal testimony version of 23 the language filed on September 7 deleted a one-time 24 inspection requirement for facilities with a potential 25 to emit under two tons per year, as well as a phase-in
2524 1 program today, three areas that Mr. Holderman will 2 cover. First, proposal for exclusions on low-emitting 3 facilities; second, provisions on the allowance of 4 alternative monitoring; and third, provisions on 5 monitoring in occupied areas. 6 Much of this has been addressed in a joint 7 proposal that was provided by Oxy and the ENGOs that has 8 been submitted to the Board, as well, will be covered 9 both in Mr. Holderman's testimony, as well as in 10 testimony of other of the environmentalists. 11 So I will turn it over to Mr. Holderman. 12 DANNY HOLDERMAN 13 (Relating to Topic Order 27) 14 having been first duly sworn or affirmed, was 15 examined and testified as follows: 16 DIRECT EXAMINATION 17 BY MR. JANOE: 18 Q. Mr. Holderman, could you please summarize your 19 direct and rebuttal testimony in connection with 20 Section 116. 21 A. Yes. As I discussed in my prior testimony, 22 this is another topic where many, but not all of Oxy 23 USA's concerns have been addressed through coordination 24 and open dialogue with the Department and other 25 stakeholders.	2526 1 of two years for existing facilities. These would have 2 helped resolve many of my concerns. However, the 3 Department has dropped the one-time inspection 4 requirements from the September 16th version of the rule 5 and only retained the two-year phasing. 6 I encourage the Board to instead either accept 7 Oxy USA's prior proposals that excluded low-emitting 8 facilities, including wellhead-only sites, or implement 9 a phased-in annual inspection requirement for 10 wellhead-only facilities. 11 Although Oxy USA continues to prefer its 12 proposal excluding these facilities, using the 13 Department's September 16 proposal as a basis for the 14 second opinion, Oxy USA would propose that owners or 15 operators of existing wellhead-only facilities continue 16 annual inspections of these existing sites beginning two 17 years after the effective date of this part on the 18 following schedule: 30 percent by January 1st, 2024; an 19 additional 35 percent by January 1st, 2025; and another 20 35 percent by January 1st, 2026. 21 The second option is consistent with EDF, 22 Clean Air Advocates and Nava's proposals in their 23 September 19th submittal. Oxy USA also included this 24 proposal in the September 24th filing. 25 Turning to alternative monitoring, Oxy USA

2527 1 supports the Department's proposal to allow for 2 alternative leak monitoring plans in Section 116D, and 3 also requests that the Department allow for alternative 4 methods to be utilized. 5 As an example, Oxy has been compiling 6 censor-based technology to electronically capture gas 7 emissions, audio data and visual data from locations as 8 an alternative compliance method to AVO inspections. 9 This method has the potential to be a more cost 10 effective and accurate form of data capture than 11 traditional AVOs which can enable greater emission 12 reduction. Alternative technologies have potential to 13 result in more rapid identification and response than 14 AVO inspection. 15 Finally, as noted in my rebuttal testimony, 16 Oxy USA is also supportive of additional monitoring 17 obligation for wellhead sites within 1,000 feet of an 18 occupied area as requested by EDF, Clean Air Advocates 19 and NAVA. Oxy USA would incorporate this approach with 20 the following updates: 21 First, that a definition of occupied area that 22 covers a building or structure used as a place of 23 residency rather than designed for use as a place of 24 residency. 25 Second, a description of the process to	2529 1 inaudible). Those have not been entered as exhibits. 2 HEARING OFFICER ORTH: Thank you. I think 3 that was some of the confusion that the -- not -- not 4 bad confusion, just some of this is exhibits, and some 5 of it is filings. Thank you. 6 MR. JANOE: And we present Mr. Holderman for 7 cross-examination. 8 HEARING OFFICER ORTH: All right. Thank you. 9 Let me ask if there are parties with questions 10 of Mr. Holderman. Please turn on your camera. 11 I see Mr. Hiser. 12 CROSS-EXAMINATION 13 BY MR. HISER: 14 Q. Good afternoon, Mr. Holderman. 15 A. Good afternoon. 16 Q. I'm Eric Hiser. I'm representing the New 17 Mexico Oil and Gas Association. 18 And I wanted to touch on an aspect of your 19 testimony that you just gave as reflects a change in the 20 wording of this agreement with Oxy and a number of the 21 environmental nongovernmental organizations. 22 And in that change in the agreement, you 23 agreed to change places that are used for residency from 24 those that are designed for residency; is that correct? 25 A. That's our proposal. Yes.
2528 1 measure the thousand-foot distance. 2 And finally, a timeline for owners and 3 operators to evaluate whether any occupied areas are 4 within 1,000 feet of a facility. 5 EDF, Clean Air Advocates and NAVA have 6 included these clarifications in their filings, and we 7 appreciate and support their changes, for this proposal 8 is workable for Oxy USA's New Mexico operations with 9 modifications discussed. I can't speak for whether it's 10 feasible for every basin or for other operators in the 11 state. I can only speak to Oxy's individual 12 (unintelligible and/or inaudible). 13 HEARING OFFICER ORTH: Mr. Holderman, I'm 14 sorry to interrupt here. 15 You may have mentioned it, but what exhibit 16 were you referring to? 17 MR. JANOE: Mr. Holderman's two exhibits are 18 Oxy USA Exhibit Number 2, which is his direct testimony, 19 and Oxy rebuttal Exhibit Number 2, which is his rebuttal 20 testimony. 21 In addition, we had made a separate filing, 22 like Kinder Morgan and EDF, on the 24th that included 23 alternative proposed language. Additionally, 24 environmental NGOs have also submitted a similar 25 one-pager type submittal (unintelligible/and or	2530 1 Q. And when Oxy is making that change, what 2 frequency of review are you anticipating that Oxy would 3 be undertaking to -- that there would be no use of an 4 area for residency within 1,000 feet of any of its 5 areas? Because can't that change depending on whether 6 somebody sets up a tent or something like that in that 7 area? 8 A. Yeah. I -- I believe we asked for annually 9 to -- to review. 10 Q. So you're thinking an annual review. Okay. 11 A. I guess I -- I guess I'll -- I'll say that we 12 asked for a timeline to be able to go evaluate those 13 areas and that we would confirm any areas identified 14 annually hadn't changed status. 15 Q. Okay. 16 And so is it your vision that this is one time 17 or annual or evergreen, I guess? 18 A. I -- I mean, it would have to be evergreen. 19 But once you've identified them, and you're doing the 20 inspections, at that point it's up to you if you believe 21 that they have -- they changed status to go do that, or 22 you continue with the inspections. But yes. That's 23 what we (unintelligible and/or inaudible). 24 Q. And in Oxy's experience, because you're, you 25 know, obviously, a well respected technical operator in

2531 1 this space -- how long does it take you to set up an 2 LDAR program for a facility that would have one of -- a 3 person potentially move within that thousand feet from 4 when you discovered it to how long would it take you to 5 actually put that program up and have it available? 6 A. We would -- we would ask for 60 to 90 days, 7 I'd -- I think would be our standard approach. 8 MR. HISER: Okay. Thank you -- 9 MR. HOLDERMAN: Depending on the circumstance. 10 MR. HISER: Thank you very much, 11 Mr. Holderman. That's -- that's helpful just to 12 understand. Appreciate it. 13 HEARING OFFICER ORTH: Thank you. 14 Other parties with questions of Mr. Holderman? 15 Please turn on your screen. 16 I'll turn now to the Board for their 17 questions. 18 While I'm doing that, if you're an attendee on 19 this platform with a question, please reach out through 20 chat. 21 EXAMINATION 22 BY THE BOARD: 23 HEARING OFFICER ORTH: Madam Chair, any 24 questions of Mr. Holderman? 25 CHAIR SUINA: Madam Chair, I don't have any	2533 1 VICE-CHAIR TRUJILLO DAVIS: And in that LDAR 2 program, do you have a -- 3 MR. HOLDERMAN: I guess I -- sorry. I will -- 4 I guess I will say in so much that operators -- I guess 5 I can generalize this. In so much as operators have 6 equipment at facilities built in a time frame that Quad 7 0a applies to them, then they should have an LDAR 8 program already established, just something to meet that 9 requirement. So that's a generalization I can make. 10 VICE-CHAIR TRUJILLO DAVIS: That's a helpful 11 one. Thank you. 12 And so in that program do you grade it on like 13 a pass or fail rate? Is that how you would look at 14 the -- 15 MR. HOLDERMAN: The way -- the way -- the way 16 we execute our program is, I guess, twofold, and I'll -- 17 I'll happily speak to it. 18 For Quad 0a, we follow the requirements of 19 Quad 0a to capture because that's the -- the technical 20 basis for -- for our voluntary LDAR program. We -- we 21 go out and inspect a site. It is -- it is pass/fail. 22 There's not a -- there's -- the things are either 23 leaking or not. If we identify leaks, then we measure 24 how long we -- we get them prepared, and we go do a 25 second closeout in order to make sure that we have no
2532 1 questions. 2 HEARING OFFICER ORTH: Thank you. 3 Vice-Chair Trujillo Davis? 4 VICE-CHAIR TRUJILLO DAVIS: Yes. I have a 5 couple, and actually I thought Mr. Holderman would be 6 the best person to answer -- one of the best people to 7 answer these question. They kind of came up in some 8 earlier testimony. 9 So I was curious about your LDAR program, and 10 not necessarily specifically Oxy's, because I doubt you 11 want to speak on that. You might want to speak 12 generalized for most operators. 13 But would you -- would you say that most 14 operators have an LDAR program that they carry out 15 for -- for all their facilities? 16 MR. HOLDERMAN: Actually, I -- I guess I made 17 every attempt to not try to speak for every operator and 18 only speak to Oxy's. 19 What I can say is that we do. And so -- so 20 in -- in referencing our ability to react when -- when I 21 said 60 to 90 days, that encompasses the fact that we do 22 already have an LDAR program for most of our large 23 facilities. So we are merely bolting onto an existing 24 program. Starting from scratch would, obviously, take 25 more.	2534 1 leaks until the next -- next time we show up. 2 VICE-CHAIR TRUJILLO DAVIS: Do you set like 3 internal company metrics for -- to improve your pass or 4 fail rate? Do you -- basically, are you looking back at 5 your own performance with that program? 6 MR. HOLDERMAN: I -- I guess I would say we 7 do. I don't want to overstate the -- the maturity of 8 our LDAR program. And so we -- I would -- I would 9 characterize it that we're -- we have gathered enough 10 information to know the frequency that we need to go out 11 there, so that we're not doing tests that we don't 12 capture anything repeatedly. 13 I don't know that we've built up enough at it 14 to be able to extend, you know -- to say that we need 15 definitiveness, that -- that -- that we've improved our 16 PM program for leaks at this point in time. That would 17 be ideal. That's the route that we're going. But we're 18 still -- we're still on that path. 19 So that -- that's why I say we're -- we're 20 currently mostly on a quarterly inspection basis for our 21 large facilities, similar to what's -- (unintelligible 22 and/or inaudible). 23 VICE-CHAIR TRUJILLO DAVIS: Okay. Thank you. 24 And what I was kind of driving at with that 25 was -- or trying to understand was, you know, we hear a

2535 1 lot about LDAR programs, we hear a lot about, you know, 2 putting these inspection programs into practice, and 3 since the Quad 0a LDAR is already in practice, I wanted 4 to know more about how that was progressing and if it 5 was evolving within the companies to -- to improve or if 6 they were kind of status quo. 7 And so I thank you for answering those 8 questions for me. And if you have any more to add to 9 that, I'd appreciate it. 10 MR. HOLDERMAN: I'm trying to think if I do or 11 not. 12 I don't think I could definitively say that -- 13 that LDAR has caused our -- the failure rate of the 14 equipment to go down. I mean, it doesn't fundamentally 15 even touch the equipment. You know what I mean? 16 And so to the extent that you can use LDAR to 17 change the way that you service the equipment, to 18 identify where we talk -- we've heard a lot in the -- in 19 the testimony that you have these incremental bad actors 20 compared to, you know, most equipment. The degree to 21 where we can find the service situations or things where 22 those bad actors are, LDAR is -- is great for -- for 23 driving down our leak rate. 24 But really it's a tool for us to identify 25 where we need to do the work and drive down the -- the	2537 1 Ms. Paranhos? 2 MS. PARANHOS: Thank you so much, Madam 3 Hearing Officer. 4 Elizabeth Paranhos here on behalf of EDF. 5 With me today is Dr. David Lyon, who we heard 6 from yesterday, Ms. Hillary Hull and also Dr. Tammy 7 Thompson, who we heard from a few days ago on the ozone 8 photochemical modeling. 9 Our first witness is going to be Dr. Lyon. 10 DAVID LYON 11 (Relating to Topic Order 27) 12 having been first duly sworn or affirmed, was 13 examined and testified as follows: 14 DIRECT EXAMINATION 15 BY MS. PARANHOS: 16 MS. PARANHOS: I think he is with us. So as 17 long as he's been turned into a presenter, he should pop 18 up here any moment. 19 MR. LYON: Hello. Can you hear me? 20 MS. PARANHOS: Yes, we can. Thanks, David. 21 Madam Hearing Officer, do you need to swear 22 Dr. Lyon in again? 23 HEARING OFFICER ORTH: No. He remains under 24 oath. 25 MS. PARANHOS: Okay. Perfect. Thank you.
2536 1 emission rate. LDAR isn't -- like I said, it isn't 2 fundamentally touching anything. It's just telling you 3 where -- where your problems are and where you need to 4 get people to fix (unintelligible and/or inaudible). 5 VICE-CHAIR TRUJILLO DAVIS: Thank you. I 6 think that was a really enlightening explanation. So 7 thank you. 8 I don't have any more questions. 9 HEARING OFFICER ORTH: Thank you. 10 Member Bitzer? 11 MEMBER BITZER: No questions. Thank you. 12 HEARING OFFICER ORTH: Thank you. 13 Member Garcia? 14 MEMBER GARCIA: No questions. Thank you. 15 HEARING OFFICER ORTH: Member Honker. 16 MEMBER HONKER: No questions. Thank you. 17 HEARING OFFICER ORTH: Thank you. 18 Mr. Janoe, did any of the questioning -- does 19 it prompt follow-up with Mr. Holderman for you? 20 MR. JANOE: Nothing further, Madam Hearing 21 Officer. 22 HEARING OFFICER ORTH: All right. 23 Well, thank you very much, Mr. Holderman and 24 Mr. Janoe. 25 I believe now we turn to EDF.	2538 1 Q. Dr. Lyon, you submitted direct and rebuttal 2 testimony on behalf of EDF with respect to Section 116, 3 equipment leaks; is that correct? 4 A. Yes. 5 Q. And do you have any corrections to that 6 testimony? 7 A. Yes, I do. 8 Q. So -- 9 HEARING OFFICER ORTH: Can we get exhibit 10 numbers? 11 I'm sorry to interrupt. 12 MS. PARANHOS: Absolutely. So Dr. Lyon's 13 rebuttal testimony is XX, and we just filed an amendment 14 to that. That's EDF Exhibit XXa. His direct testimony 15 is EDF Exhibit RR. And he will be discussing all of the 16 exhibits, some of which were discussed yesterday, but 17 those again would be Exhibit -- EDF Exhibit A, C, D, E, 18 F, G, H, I, J, K, L, M, N, O, QQ, RR, YY, ZZ and AAA. 19 And I would move to admit those exhibits 20 subject to the outstanding objection that we will be 21 hearing about, I think, later today or tomorrow, as 22 well. 23 HEARING OFFICER ORTH: Yes. Thank you. 24 They're admitted subject to that objection. 25 MS. PARANHOS: Thank you.

2539 1 (Exhibits EDF XXa, A, C, D, E, F, G, H, I, K, 2 QQ, RR, YY and ZZ admitted into evidence.) 3 Q. (BY MS. PARANHOS) Dr. Lyon, could you please 4 summarize your opinions in your direct testimony 5 regarding EDF's LDAR proposal that requires additional 6 inspections at well sites located near occupied places 7 such as schools, homes and playgrounds? 8 A. Yes. EDF in conjunction with Clean Air 9 Advocates, Oxy USA and the Center for Civic Policy, NAVA 10 Education Project propose to require operators with 11 wellhead sites -- 12 HEARING OFFICER ORTH: Dr. Lyon, I'm sorry to 13 interrupt you. 14 If you would start again and speak much more 15 slowly. 16 MR. LYON: Yes. Yes. 17 EDF in conjunction with Clean Air Advocates, 18 Oxy USA, the Center for Civic Policy and NAVA Education 19 Project propose to require operators with wellhead sites 20 located within 1,000 feet of occupied places such as 21 schools, playgrounds and homes inspect such facilities 22 more frequently than otherwise would be required by 23 NMED's proposal. 24 Specifically, operators would be required to 25 inspect well sites within 1,000 feet of occupied places	2541 1 Frequent inspections with instruments such as 2 optical gas imaging cameras are necessary to mitigate 3 emissions from these low-producing wells. 4 Q. Thank you, Dr. Lyon. 5 And could you describe EDF studies of 6 emissions from oil and gas operations that you have 7 participated in that took place in New Mexico? 8 A. Yes. And at this point I'd like to share some 9 slides. 10 So if you can please give me permission. 11 THE REPORTER: While that's happening, I'm 12 going to ask you to still speak slower, please. 13 MR. LYON: Okay. 14 Yes. So I'll be talking about some of EDF's 15 research since 2018, some studies that were published in 16 peer-reviewed journals and particularly EDF's project 17 since late 2019, the PermianMAP project. 18 So I'm going to share some slides now. Let's 19 see. 20 One second. Too many PDFs up. 21 Can you see those slides? 22 MS. PARANHOS: We can. 23 MR. LYON: Great. 24 One second. Apologies. Let me share the PDF 25 instead. The PowerPoint.
2540 1 quarterly if such well sites have the potential to emit 2 less than five tons of VOCs. For well sites within this 3 boundary that have the potential to emit five times per 4 year VOCs, we recommend monthly inspections. We refer 5 to this as the LDAR proximity proposal. 6 This proposal will help protect frontline 7 communities from excess emissions while also helping New 8 Mexico avoid ozone nonattainment for a more serious 9 ozone nonattainment designation. 10 Q. And what is your opinion of NMOGA's proposal 11 to reduce the inspection frequency proposed by NMED for 12 well sites that have a potential to emit of less than 10 13 tons per year of VOCs? 14 A. I strongly disagree with this proposal. The 15 calculation of a well pad's potential to emit is 16 estimated primarily based on a well pad's oil and gas 17 production. 18 The scientific studies have shown, including 19 a -- one conducted in New Mexico Permian as early as -- 20 as recent as 2018, show that there's a weak relationship 21 between well pad emissions and production and that 22 low-producing wells can emit substantial amounts of VOC 23 emissions, sometimes in excess of the potential to emit 24 due to malfunctions such as stuck separator dump valves 25 that cause abnormally high emissions.	2542 1 Apologies for that. Hopefully now you can see 2 the slides. 3 MS. PARANHOS: We can. 4 MR. LYON: So I'll be talking about 5 Environmental Defense Fund's Permian Methane Analysis 6 Project, which is a research project, a campaign in the 7 Permian Basin of New Mexico and Texas, that collaborates 8 with leading scientists to assess emissions of methane 9 and VOCs and facilitate mitigation of those emissions. 10 This project uses multiple measurement 11 approaches in the Permian and has been ongoing since 12 late 2019 and is continuing to go on. We actually have 13 aircraft in the Permian today measuring emissions. And 14 I'll talk in detail about some of the approaches that 15 have been used and what we learned. So I'll be talking 16 about several measurement approaches being used to 17 quantify emissions of methane, other pollutants. 18 There is aerial mass balance and remote 19 sensing by Scientific Aviation and Carbon Mapper, 20 tower-based estimates of regional emissions by 21 Pennsylvania State University, vehicle-based site-level 22 estimates of well pad emissions by the University of 23 Wyoming, and then helicopter-based optical gas imaging 24 surveys by Leak Surveys, Incorporated. 25 And all of this data is publicly available on

2543 1 PermianMAP.org. 2 So the first data I'll be talking about is 3 estimates of the total methane emissions in the Permian 4 Basin. 5 So the study Zhang et al., 2020 used data from 6 the satellite-based TROPOMI instrument to quantify 7 methane emissions in the Permian and found that 8 emissions were 2.9 million metric tons per year, which 9 is equivalent to 3.7 percent of the natural gas 10 production. So higher than national averages -- the 11 national averages are much higher than EPA estimates. 12 For PermianMAP, EDF partnered with Scientific 13 Aviation and Penn State University to come up with 14 aircraft- and tower-based estimates of methane emissions 15 since about March, 2020. 16 So what we found is that in early 2020 17 emissions were about 3 percent of production, pretty 18 similar to the earlier study. And then what we found 19 was that when oil price crashed in April, 2020, the 20 emissions dropped to about 2 percent of production due 21 to the drastic decrease in new well production and a 22 decrease in gas flaring. But the emissions quickly 23 rebounded and have since then be -- have been about 24 3 percent and above. 25 So really demonstrating that by using these	2545 1 in the inspections of these wellhead-only sites. 2 The next approach I'll talk about are aerial 3 and satellite detections of large emissions, sometimes 4 called super-emitters. 5 So there's several approaches that have been 6 used recently, including NASA's Jet Propulsion 7 Laboratory in the University of Arizona have flown their 8 vehicle called -- their aircraft called Carbon Mapper, 9 which uses remote sensing to quantify large emissions 10 from sources that are about -- that are over about 200 11 tons per year of emissions. So these are very large 12 emissions sources. 13 And as you can see on the left, they can 14 actually image the plume of the emissions so you could 15 see exactly which site images are coming from, and often 16 you can even see the equipment it's coming from such as 17 a tank or an unlit flare. 18 And additionally, a recent paper, 19 Irakulis-Loitxate et al., 2021, used three satellites to 20 quantify even larger emissions greater than -- I think 21 it's 4,000 tons per year, using satellites, and found 22 over 30 of these really large sources in the Permian. 23 And so all this data is very recent, and we 24 actually have -- the next slide will show that -- that 25 we, EDF, has used Carbon Mapper aerial surveys to survey
2544 1 measurement approaches we find that the total emissions 2 are much higher than estimates by EPA and -- and others. 3 The next data I'll be talking about are 4 site-level measurements performed by a vehicle using an 5 EPA-developed approach, Other Test Method 33A. So we 6 partnered with scientists at the University of Wyoming, 7 and they used their Mobile Research Laboratory on 8 firstly measurements in 2018 and then later doing 9 measurements in 2020. 10 So this data I'm talking about is from their 11 2018 measurements and are published in the paper of 12 Robertson et al., 2020. In this paper what they did is 13 they used this vehicle driving downwind of 71 sites, 14 well pads in the New Mexico Permian, and quantified 15 their emissions with an approach that can detect very 16 low levels of emissions in addition to high emissions. 17 So what they found was that methane emissions 18 were about five to nine times higher than estimates 19 based on the EPA National Emissions Inventory and about 20 10 times higher than based on the Greenhouse Gas 21 Reporting Program. 22 One interesting finding is that the 23 wellhead-only sites did tend to have much lower 24 emissions than the complex sites, but they still did 25 have emissions. So we think that this supports phasing	2546 1 the Permian, including the New Mexico portion, this 2 August, and the aircraft found nine -- over 900 methane 3 plumes from 500 sources over this 200 tons per year. 4 And many of the plumes had emissions detected over 5 multiple surveys throughout two weeks, and -- and many 6 of them are also -- were the same sources that were 7 emitting in 2019. 8 And -- but -- but also, a lot of sources were 9 very intermittent. So you find high emissions during 10 one survey, but they were gone the next survey, showing 11 really that you need frequent inspections to find these 12 large emitters. 13 And also, I'll point out that the emissions 14 were detected from a diversity of sites, including well 15 pads, compressors, pipelines and processing plants, 16 and -- and gathering compressor stations are one of the 17 largest sources, contributing about 20 percent of 18 emissions. 19 Next data I'll talk about is helicopter-based 20 optical gas imaging, which is -- you can use to -- to 21 visualize the normally invisible hydrocarbons including 22 VOCs and methane. 23 So we partnered with Leak Surveys, 24 Incorporated. This is a contractor that's been doing 25 OGI inspections for over 10 years. They -- they have

2547 1 worked for several people, including NMED and EPA, 2 doing -- doing inspections. And we've had them fly in 3 the Permian on multiple surveys, looking for unlit 4 flares and other problems that we see here on the right. 5 So this is showing a flare at a processing plant that 6 should be combusting the VOCs and methane, but instead 7 it's unlit and venting all the gas to the atmosphere. 8 So we performed over five surveys in the 9 Permian. We actually have the helicopter flying right 10 now, doing some more surveys. And we found consistently 11 that about 5 percent of flares are unlit and venting and 12 another 5 percent have issues, such as you can see a 13 hydrocarbon slip, indicating that's not burning the 14 emissions properly. 15 So we estimate that the combustion 16 efficiency -- the overall combustion efficiency of these 17 malfunctioning flares is no better than 93 percent 18 compared to the 98 percent estimated by EPA and that 19 these flares contribute over 10 percent of the total 20 emissions, showing that it's really important to make 21 sure flares are maintained well and inspected. 22 So that's all the slides I have. 23 MS. PARANHOS: Thank you so much, Dr. Lyon. 24 Q. And do the findings from the PermianMAP 25 studies correspond to findings from other studies that	2549 1 these super-emitting sites. 2 Additionally, another finding is that the 3 traditional emission inventory approaches used by -- by 4 EPA, NMED and operators, including for things like the 5 EPA Greenhouse Gas Reporting Program, tend to greatly 6 underestimate emissions. And this is because they rely 7 on emission factors and engineering equations that are 8 either based on a very limited number of measurements or 9 assume things are working correctly. 10 So they may assume that -- that a flare is 11 combusting the emissions at 98 percent, but if the flare 12 is unlit, it's combusting it at 0 percent. So the 13 inventory often don't account for these -- these -- 14 what's really going on in the field. So it's -- it's 15 wise -- it's critical that you use measurements to 16 estimate emissions. 17 So a paper published in the Journal of Science 18 in 2018, Alvarez et al., was a meta-analysis summary, a 19 lot of the EDF and other studies, that we tried to come 20 up with the best estimate of the US oil and gas methane 21 emissions, so included over 24 collaborating scientists. 22 And what we found was that emissions in the US in 2015 23 were 13 million metric tons of methane, that's about 24 2.3 percent of natural gas production, and it's about 25 70 percent higher than the EPA greenhouse gas
2548 1 you've been involved in in other basins in the US? 2 A. Yes. So the findings of -- in the Permian, 3 they have a lot of consistencies with -- with the rest 4 of the US. But I will say the Permian is -- is really 5 the extreme. The Permian has some of the highest 6 emissions encountered in -- in the US, but the patterns 7 are generally the same. 8 So some of these really common findings are -- 9 one is that emissions occur across the supply chain, 10 including in transmission and compression and local 11 distribution, but really the largest sources of 12 emissions are upstream, particularly well pads and 13 gathering stations. 14 Second is that -- that emissions always have 15 what's called skewed distribution. So that if you rank 16 emissions, if you rank sources or sites by their 17 emissions, the top 5 to 10 percent highest emitting 18 sources or sites account for over half of the total 19 emissions. And we find this is true no matter what kind 20 of sites or sources you look at, at some of these 21 super-emitters. 22 But the issue is these super-emitters often 23 are intermittent and may occur for a day or hours or 24 even minutes, and -- and they can occur at all sites. 25 So it's critical that sites are inspected to really find	2550 1 inventory's current estimate. 2 And -- and really it's because of these 3 super-emitters that -- that these inventory approaches 4 are really underestimating emissions and then also 5 underestimating the benefits that can be gained by 6 mitigating those emissions. 7 Q. Thank you, Dr. Lyon. 8 And you've touched on some of this already, 9 but I suppose the question is why is it significant that 10 measured emissions, as you found in the Permian Basin, 11 are higher than those estimated by inventories in 12 particular for this rulemaking? 13 A. Yes. Because since the rulemaking analyses 14 that are based on these bottom-up approaches, so they -- 15 they underestimate both the total emissions, they 16 underestimate the mitigation, and then therefore they 17 underestimate the benefits that can be gained by 18 reducing the emissions. 19 Q. Terrific. Thank you. 20 So turning now to the topic of cost 21 effectiveness, your rebuttal testimony stated that NMED 22 did not overestimate the pollution reductions that can 23 be achieved through LDAR. 24 Could you please explain the basis for that 25 opinion?

2551 1 A. Yes. So I reviewed ERG's estimate of emission 2 reductions to result from the implementation of NMED's 3 proposed LDAR rules. So ERG estimates that the 4 approximately 24,000 well sites in New Mexico subject to 5 the proposed LDAR requirements emit 7,131 tons of VOC 6 that can be reduced by frequent inspections. And this 7 is a gross underestimate of the pollution emitted from 8 New Mexico well sites that can be mitigated by frequent 9 instrument-based leak -- leak inspections if you use 10 these measurement-based studies to estimate the 11 emissions. 12 So as noted in my testimony, the paper 13 Robertson et al., 2020, used 2018 vehicle-based data 14 from 71 sites in the Permian and found that the average 15 emissions were about 37 tons of methane per year, 16 equivalent to about 11 tons of VOC per year, based on 17 the WRAP inventory's average gas composition, and that 18 extrapolates to over 260,000 tons of VOC emitted per 19 year from New Mexico Permian well pads, so much -- much 20 higher than official estimates. 21 And other studies suggest that -- that this 22 estimate actually is quite low, because the Robertson, 23 et al. study used vehicles that would miss a lot of the 24 elevated sources. So things like an unlit flare, the 25 emission plume would actually pass over the vehicle and	2553 1 Q. Thank you. 2 And could you expound a little bit more on why 3 you disagree with NMOGA's suggestion that well sites 4 that have a PTE of less than 10 tons per year of VOCs 5 should be subject to less frequent, specifically annual, 6 instrument-based inspections? 7 A. Yes. Because as I explained, the -- there's 8 really a poor relationship between production and 9 emissions, and the -- the PTE, the potential to emit, is 10 primarily based on -- on the production, often the oil 11 production going to the tanks. But those are really 12 inaccurate reflections of the emissions from those 13 sites. 14 So although it -- over a few studies that 15 really show how that -- that marginal wells, which tend 16 to have a low calculated potential to emit, can actually 17 have quite high emissions. 18 So the first study, Deighton et al., 2020, 19 summarized direct measurements of methane and VOC 20 emissions from marginal oil and gas wells, from the very 21 marginal wells that were producing less than one barrel 22 of oil equivalent per day. I believe the -- the 23 definition nationally is for 15 barrels of oil. So 24 these are the most marginal wells. 25 So measured these wells in the Appalachian
2552 1 not be included. So -- so we think it's actually a 2 conservative estimate. 3 And also to that, NMOGA asserts that New 4 Mexico facilities have less potential equipment leak 5 emissions than EPA's model plant that ERG used to model 6 the reductions associated with NMED's LDAR proposal. So 7 NMOGA bases this assertion on reports operators submit 8 to EPA's Greenhouse Gas Reporting Program, and according 9 to these reports, New Mexico facilities have less pieces 10 of equipment and components and potential to emit than 11 2016 CTG model plants. 12 But as I noted in my -- my testimony, that 13 these estimates, like model plants that are based on 14 bottom-up emissions data, are inaccurate, and that if 15 you use measurement-based approaches you actually come 16 to the opposite conclusion of NMOGA and that -- find 17 that NMED's estimate is an underestimate of the 18 emissions. 19 Q. Thank you. Thank you, Dr. Lyon. 20 And if NMED's estimate of the emissions that 21 can be reduced by frequent instrument-based inspections 22 is an underestimate -- underestimate, does that also 23 mean that NMED's estimate of the reductions that can be 24 achieved by frequent inspections is an underestimate? 25 A. Correct.	2554 1 Basin in Southeastern Ohio and found that they were a 2 disproportionate source of methane and VOC emissions. 3 So these wells only accounted for about -- only 4 accounted for 0.2 percent of oil and 0.4 percent of gas 5 production produced in the US in a year, but they 6 estimate they account for 11 percent of the upstream 7 methane emissions. So it's a really negligible 8 contribution of production but a substantial fraction of 9 emissions. 10 Omara et al., 2018, is a meta-analysis study 11 of well pad emissions from eight basins that also finds 12 that marginal wells are a large contributor of 13 emissions. So the researchers obtained site-level 14 methane emissions, primarily collected with the same 15 approach as University of Wyoming, from over 1,000 16 natural gas production sites throughout the US, and a 17 methane -- and looked at the characteristics of these 18 wells and emissions profile by production. 19 So they categorized wells by category, 20 including based on the gas production, and found that 21 the low -- the low natural gas production sites that 22 were producing less than 100,000 cubic feet per day of 23 natural gas accounted for 85 percent of the total number 24 of sites in the study and nearly two-thirds of the total 25 methane emissions.

2555 1 Also, many studies have identified that poor 2 maintenance is a driver of observed methane leakage at 3 marginal sites. For example, Deighton et al. found that 4 the state of maintenance of these wells was poor and 5 some sites were in a state of disrepair, with rusty well 6 shafts, broken valves, et cetera, while others were 7 found to be venting as a result of fallen trees on the 8 wellheads. 9 Similarly, Omara et al. reported rusted or 10 corroded well casings, field piping, regulators, valves 11 or meters, and identified a few of these decrepit 12 components as substantial sources of leaks at the 13 low-production sites. So these avoidable methane 14 emissions typically are not well represented in the 15 traditional inventory calculations, and that is one of 16 the large reasons that there's been discrepancies 17 between these inventory-based estimates and measurement 18 studies. 19 So the studies I've discussed here really 20 indicate that low-production wells are a 21 disproportionate source of methane emissions nationally 22 and in the Permian. For example -- yeah. So really 23 it's essential that these wells are inspected to find 24 these emissions and reduce them. 25 Q. Thank you, Dr. Lyon.	2557 1 inspected at all as part of LDAR or should be inspected 2 very infrequently. 3 Do we agree that inactive wells, temporarily 4 abandoned wells and wellhead-only sites should be 5 subject to less frequent or no inspections as we have 6 jointly proposed? 7 A. Yes. So these sites can have emissions, but 8 they tend to much less frequently have at large 9 emissions. So I think it's reasonable to have less -- 10 have them phased in and have a -- yeah, to have -- and 11 we agree that they could be exempt from -- from LDAR. 12 Q. Great. 13 And just to clarify, did we propose to exempt 14 satellite facilities, injection wellheads and 15 temporarily abandoned sites from the instrument-based 16 LDAR? 17 A. Yes. We did propose to exempt satellite 18 facilities, injection wellhead sites and temporarily 19 abandoned wellhead sites. 20 Q. And could you describe the joint proposal for 21 LDAR with respect to inactive wellhead sites? 22 A. Yes. We propose that operators inspect these 23 wellhead sites that become inactive after the rules take 24 effect no sooner than 30 days after the site becomes 25 inactive. And subsequently, we propose annual
2556 1 You mentioned the methane emissions that were 2 studied. 3 Is it true that methane is a component of 4 natural gas and VOCs are also a component of natural 5 gas? 6 A. Yes. So methane is a primary constituent of 7 natural gas, but it often includes VOCs and sometimes 8 hazardous air pollutants including benzene. So the EDF 9 studies have generally focused on methane emissions, but 10 since the VOCs and hazardous air pollutants are 11 co-emitted with the methane, I believe that these 12 studies -- the same findings would apply to these other 13 pollutants. 14 Q. Thank you. 15 And is it correct that EDF actually compiled a 16 methane-specific inventory for New Mexico, that then we 17 converted that inventory to VOCs for purposes of this 18 rulemaking? 19 A. Yes. 20 Q. Thank you. 21 Turning now to some of the testimony we heard 22 earlier today from Mr. Holderman. 23 As Mr. Holderman mentioned, EDF did propose 24 jointly with Oxy that low-producing facilities or -- 25 sorry -- low-emitting facilities should either not be	2558 1 inspections of wellhead sites, and this is because the 2 inactive wells can leak, however they are not as likely 3 to leak as much or as frequently as actively producing 4 wells. 5 Q. Thank you. 6 And then with respect to wellhead-only sites 7 as has been proposed by EDF and Oxy, can you please 8 summarize what the proposal is with respect to 9 instrument-based leak detection? 10 A. Yes. We propose to require phase-in of the 11 annual inspection requirements for wellhead-only sites 12 as follow: So for existing wellhead-only facilities, 13 annual inspections shall be completed on the following 14 schedule: 30 percent by January 1st, 2024; 65 percent 15 by January 1st, 2025; and 100 percent by January 1st, 16 2026. 17 Q. Thank you, Dr. Lyon. 18 And for the benefit of the Board, that 19 particular proposal was part of our joint notice of 20 second revised amendments which we filed on 21 September 19th. 22 And that concludes Dr. Lyon's summary of his 23 direct and rebuttal. We do have some surrebuttal if I 24 may proceed with that at this time. 25 HEARING OFFICER ORTH: Yes, please.

2559 1 Q. (BY MS. PARANHOS) Dr. Lyon, we heard earlier 2 in the proceeding that the New Mexico Oil Conservation 3 Commission venting and flaring rule and its AVO 4 requirements reduce the need for frequent 5 instrument-based inspections. 6 Do you agree? 7 A. No, I do not agree. 8 So I do not think that AVO is a substitute for 9 instrument-based methods. AVO can occasionally detect 10 emissions, particularly large emissions, but it's highly 11 dependent on both the kind of skill and attention of the 12 operator and the conditions in the environment, 13 including things like the wind and what's -- you know, 14 are there other sources nearby that are allowed to make 15 it difficult to hear or see emissions. 16 So I think that there's been people in 17 industry that have -- have made similar things, 18 including there's been testimony from Jim Bolander 19 during the OCC rulemaking last January that -- that 20 agreed with this point. So I can bring up his 21 testimony. We are wanting to -- his summary was that 22 LDAR is not meant to be a robust -- a robust inspection 23 and repair and reporting requirement, and that this is 24 not a leak detection and repair program because we 25 know -- we know that's out of our lane.	2561 1 frequent monthly or weekly AVO inspections basically 2 reduce the need to have frequent instrument-based 3 inspections as the Department has proposed. 4 And so the only point we're trying to make 5 here is that the New Mexico Oil Conservation Commission 6 rule does not require leak detection and repair, it only 7 requires AVO, and their own consultant specifically 8 stated that AVO is not in any way a substitute for leak 9 detection and repair. 10 HEARING OFFICER ORTH: Mr. Hiser? 11 MR. CURTIS: This is Mr. Curtis. 12 I don't believe that there's any statement in 13 the record to the effect that the OCD rule requires an 14 LDAR program such as OGI and Method 21, and so it's 15 unclear to the extent it's trying to rebut that that 16 there's a statement in the record as a basis for that 17 rebuttal. 18 Beyond that, it would seem more appropriate 19 that this statement should be made on the strength of 20 the witness' own experience and testimony as opposed to 21 hearsay that we have not had access to up until now. 22 HEARING OFFICER ORTH: I think the way to 23 proceed at this point will be, Ms. Paranhos, for 24 Mr. Lyon to refer to the testimony subject to the 25 objection and we will weigh that later. But I don't
2560 1 Q. Thank you, Dr. Lyon. 2 And so just to clarify, you were just quoting, 3 and it might actually be helpful to pull that up on your 4 screen if you're able to, testimony from Jim Bolander, 5 who was an Oil Conservation Division consultant during 6 the New Mexico Oil Conservation Commission rulemaking 7 last January; is that correct? 8 A. Yes, that's correct. 9 I can share it briefly, I think. 10 MR. CURTIS: Real quick for our benefit, is -- 11 is this in the record at this point? 12 MS. PARANHOS: This is not. We have not 13 submitted this. This is part of our surrebuttal 14 testimony. 15 HEARING OFFICER ORTH: Go ahead. 16 MR. CURTIS: Well, I think it may be 17 appropriate at this point to object on the basis of 18 unfair surprise. We -- if we did receive this 19 information, it wouldn't have been until yesterday, and 20 this looks quite extensive. 21 HEARING OFFICER ORTH: Ms. Paranhos? 22 MS. PARANHOS: So this is surrebuttal. We 23 honestly don't think it, A, should be surprising, since 24 this was public testimony that was provided in January. 25 This is directly responsive to NMOGA's argument that	2562 1 want to get bogged down in the -- in the argument just 2 right now. 3 Go ahead. 4 MR. LYON: Go ahead and share? Okay. 5 MS. PARANHOS: Thank you, Madam Hearing 6 Officer. 7 MR. LYON: Okay. Yes. I think -- Elizabeth, 8 I believe this is the correct part, right? Let me know 9 if I should go up a bit. 10 MS. PARANHOS: Yes. Maybe just go up to the 11 very top so -- yeah. Stop. 12 MR. LYON: (Unintelligible and/or inaudible.) 13 MS. PARANHOS: Yeah. There you go. 14 Q. So in this -- in this testimony, Dr. Lyon, is 15 Mr. Bolander discussing the difference between AVO 16 inspections, which are sensory-based inspections, and 17 instrument-based inspections, which we tend to call LDAR 18 or leak detection and repair? 19 A. Yes. 20 Q. Thank you. 21 And if you could just show the highlighted 22 portion, I think this is the most important part. This 23 is Mr. Bolander himself -- that's perfect right there -- 24 simply providing his opinion as to whether or not the 25 OCC AVO requirements are or are not LDAR.

2563 1 Oh, and, Mr. Lyon, in -- Dr. Lyon, in your 2 opinion, based on your own knowledge, I think you have 3 already stated that you do not believe AVO is as 4 reliable in detecting leaks as instrument-based 5 inspections. 6 Is that an accurate summary of your testimony? 7 A. That is correct. 8 Q. Thank you so much. 9 I don't have any further questions for 10 Dr. Lyon. 11 HEARING OFFICER ORTH: Thank you. 12 I see Mr. Rose on the screen. 13 Mr. Rose, do you have questions of Dr. Lyon? 14 MR. ROSE: No questions of Dr. Lyon 15 specifically, but in response to the question earlier by 16 Mr. Curtis, it wasn't clear whether this -- the OCD 17 test -- or the OCC testimony that was being shown is 18 going to be offered as an exhibit in this proceeding. 19 And if it is, it seems to me that it needs to 20 include the entire question and answer for context, 21 because what we're seeing and what was shown on the 22 screen is an excerpt from that testimony. It didn't 23 show the question that was being asked or the response 24 that was -- that this is directed to. So the Board 25 can't gauge the probity of that evidence without looking	2565 1 understand included yourself, used a method referred to 2 as Other Test Method or OTM 33A; is that correct? 3 A. That's correct, yes. 4 Q. And I'm going to butcher this as a 5 nontechnical person, but essentially it describes the 6 method as you -- you conduct rapid wind and methane mix 7 and -- mixing ratio directions over a minimum 20-minute 8 period. So basically you're parking a vehicle with a 9 probe that's downwind of a well site, and you're 10 collecting data for a few minutes. 11 A. Yes. 12 Q. Is that fair? Okay. 13 And so in that study you -- you indicate that 14 there are 71 facility measurements relied upon; is that 15 correct? 16 A. Yes. 17 Q. And you categorized the results -- those 71 18 measurements into two categories, and my understanding 19 is basically there were 42 measurements that you 20 referred to as OTM 33A measurements, and then you have 21 21 -- 29 that you refer to as below detection limit 22 measurements. 23 And -- and my question is did you apply a 24 nonzero value to those values that were measured at 25 below detection limit?
2564 1 at the more complete statement. 2 So we would ask that if it's going to be 3 offered it be offered in its -- that question and 4 answer, if there are more questions and answers related 5 to that, that they be offered in their entirety. 6 HEARING OFFICER ORTH: Thank you, Mr. Rose. 7 Ms. Paranhos, I think that's a good point. If 8 you would, please, make your proffer just a little more 9 than that one page. 10 MS. PARANHOS: Absolutely. 11 HEARING OFFICER ORTH: All right. 12 I see Mr. Curtis on the screen. 13 MR. CURTIS: Yes, Madam Hearing Officer. Just 14 a few questions for Dr. Lyon. 15 CROSS-EXAMINATION 16 BY MR. CURTIS: 17 Q. Good afternoon. 18 I appreciate you being with us today. 19 I wanted to talk a little bit about some of 20 the studies that you referred to, and in particular I 21 wanted to ask you a few questions about Exhibit F, which 22 is entitled New Mexico Permian Basin Measured Well Pad 23 Methane Emissions Are a Factor of 5-9 Times Higher Than 24 U.S. EPA Estimates. 25 So in the study the authors, which as I	2566 1 A. Yes. I believe the study did apply half of 2 the detection limit to those sites, which was 3 0.04 kilograms per hour. So that's going to be, I 4 think, less than a ton per year. 5 Q. So in fact, there were no emissions measured 6 for the -- for 29 out of the 71 measurements that are a 7 part of the study? 8 A. Correct. For those five there was emissions 9 below the detection limit. 10 Q. Okay. 11 You also indicated that for some of these 12 measurements the evaluation was only conducted for 13 approximately five minutes as opposed to 20 minutes; is 14 that correct? 15 A. Oh, for that study the below detection limit 16 sites were only monitored for five minutes. So if -- if 17 elevated methane was detected, they waited the entire 20 18 to 30 minutes to measure emissions, but if they did not 19 see elevated methane, for the speed of the project to 20 try to get as many sites as possible, they -- they 21 decided the site was below detection limit. 22 Q. Okay. 23 So let's assume that each of the measurements 24 were the results of a 20-minute observation. We've -- 25 you've indicated that -- that that's not the case, some

2567 1 of them were only for five minutes. But let's just 2 assume for the sake of argument that they were all 20 3 minutes. 4 And so that -- that gives us -- in order to 5 quantify the total measurement time, we would simply 6 multiply 71 by 20 minutes; is that right? 7 A. The emissions were reported in kilograms per 8 hour. So you could multiply by 8,760 if you wanted to 9 estimate annual emissions. 10 Q. What I'm trying to understand is how much 11 actual monitoring data formed the basis for the study. 12 And so conservatively we have 71 measurements 13 at 20 minutes apiece, correct? 14 A. Yes. 15 Q. And that's approximately -- we'll say 1,420 16 minutes less than 24 hours total? 17 A. Um-hum. 18 Q. Okay. 19 And so you're taking each measurement which 20 lasts at most 20 minutes, and you're extrapolating it to 21 determine an annual emission rate which is 8,760 hours, 22 correct? 23 A. Yes. 24 Q. And then on a larger scale, you're taking less 25 than 24 hours of data to project the emissions for the	2569 1 balance engineering equations, emission factors that are 2 based on measurement data for EPA or other studies; is 3 that correct? 4 A. Yes. 5 Q. And do you have a sense for how many hours of 6 measurement data underlies those emission factors or 7 emissions estimation methodologies on any given year 8 across the Permian Basin? 9 A. It depends which factor you're talking about. 10 Some of the emission factors used in the EPA Greenhouse 11 Gas Reporting Program are based on, I believe, less than 12 20 measurements collected in 1990s. Some of those were 13 actually collected for different facility types as 14 they're being used for emission factors. 15 Q. So let's look at this globally. Right? 16 Because we want to compare apples to apples. So the 17 apple that we're comparing is the 24 hours of 18 measurement that was conducted in your study. The other 19 apple we're comparing is all of the data collected by 20 all of the owners and operators for the entire year in 21 the Permian Basin. 22 What -- what does the hour comparison look 23 like? 24 A. I'm not sure what you're talking about. If 25 you mean the hours that people are entering numbers in a
2568 1 entire Permian Basin -- 2 A. We -- 3 Q. -- on an annual basis? 4 A. We use the 24 hours to estimate emissions for 5 a year, assuming that the two weeks of those 6 measurements was representative of the year. 7 Q. And you did that for the entire Permian Basin, 8 right? 9 A. No. Just the New Mexico portion of the 10 Permian. 11 Q. Just the New Mexico portion. Okay. 12 And how much would you say you covered 13 geographically in New Mexico in conducting this study? 14 What percentage of -- of geographic space was this -- 15 was this accounting for? 16 A. Less than 1 percent. 17 Q. Thank you. 18 So in your testimony you spoke quite a bit 19 about the inadequacy of some of the emission estimation 20 methodologies used by the greenhouse gas reporting 21 inventory that EPA collects. And so it sounds like 22 you're generally familiar with the procedures that are 23 used to estimate emissions in that context. 24 A. Yes. 25 Q. And you mentioned some things like mass	2570 1 spreadsheet, yes, there's more labor that goes into the 2 emission inventory approach, that being they're using 3 flawed assumptions so that they're not actually 4 estimating the emissions. So I think you can't compare 5 hours there. 6 Q. Let's take, for example, measurements on the 7 inlets of devices. 8 Aren't we measuring flow in that instance? 9 Aren't we measuring VOC concentrations? 10 A. Yes. Those are good measurements, but they're 11 not used very often, except for transmission facilities 12 do -- are required to use measurements for the reporting 13 program. But for most production sources, they're not 14 using measurements. 15 Q. But you would agree that there are quite a bit 16 of facility-specific site measurements that underlie 17 the -- the greenhouse gas reporting numbers that are 18 reported? 19 A. Only for very limited emission sources in a 20 limited number of segments. So mostly transmission 21 reciprocating compressor and centrifugal compressor, 22 some of those vent emissions are measurements. There 23 are some approaches like well completions with unloading 24 that operators are given the option of using 25 measurements, but to my knowledge, less than 1 percent

2571 1 of operators actually use measurement approaches. 2 Q. So let's turn to the emission factors that 3 are -- are commonly used in the greenhouse gas reporting 4 context. 5 Would it surprise you to know that many of 6 these emission factors statistically include large 7 emitters that were observed during the test phases of 8 developing that emission factor? 9 A. If you mean kind of the -- the earlier GRI 10 study from the 1990s, yes, I'm aware that there are some 11 large sources in some of the factors. 12 Q. Thank you. 13 And so I want to talk a little bit about your 14 assertion that emissions estimates from your study 15 indicate that total methane is five to nine times 16 greater than what's reported. 17 Part of the way you come to that conclusion is 18 you assume that EPA accounts for 95 percent of emissions 19 in the greenhouse gas reporting inventory, correct? 20 A. Yes. 21 Q. And has EPA said that it accounts for 22 95 percent of emissions from each sector, or is it 23 simply said that it accounts for 95 percent from the 24 inventory overall? 25 A. You're right. You're right. That is an issue	2573 1 A. Yes. They often review it. 2 Q. Turning now to some of your comments specific 3 to NMOGA's analysis. 4 In your rebuttal testimony you question 5 NMOGA's critique of ERG's model plants, and in reviewing 6 this analysis you refer to various studies that rely on 7 geospatial measurements of air pollution. 8 And so my question is do geospatial 9 measurements of air pollution tell you anything about 10 how many components a particular type of site might 11 have? 12 A. No. 13 Q. And do geospatial measurements indicate the 14 source of emissions at a component or an equipment 15 level? 16 A. They estimate typically the source of 17 emissions at the site level. 18 Q. So while these methods may give you some 19 estimate of the overall concentration of pollutant in a 20 given geographical area, they don't tell you whether 21 that pollution is coming from (unintelligible and/or 22 inaudible) controller or some other piece of equipment 23 that has nothing to do with the oil and gas? 24 A. Correct. Most of the approaches cannot 25 distinguish the equipment the emissions are coming from.
2572 1 with the paper. I later learned that it's probably more 2 like 60 to 70 percent is estimated by the -- the 3 reporting program for oil and gas. So I think it would 4 be probably less than five to nine, but still would be 5 substantially higher than reporting program based 6 estimates. 7 Q. Okay. Thank you for that clarification. 8 And is that clarification included in your 9 testimony at any point, or is it true that you represent 10 the assertions of that study are, in fact, accurate, 11 with respect to five to nine times? 12 A. I would say that I was citing the 13 peer-reviewed paper and have learned since then that the 14 assumptions in that peer-reviewed paper maybe could be 15 revised. 16 Q. But aren't you the author of that 17 peer-reviewed paper? 18 A. I'm one of the authors. Yes. 19 Q. Okay. 20 So I want to spend just a little bit more time 21 on this concept of comparing the greenhouse gas 22 reporting inventory. 23 Isn't it true that this inventory is subject 24 annually to a peer review, a public review and a review 25 by an international team of experts?	2574 1 Q. In any of these studies -- and let's -- let's 2 speak at least with respect to this study we've been 3 focusing on with respect to the five to nine times 4 greater methane emissions. 5 Is it accurate to say that most of these 6 measurements were conducted during the daytime? 7 A. Yes. 8 Q. And isn't it true that oil and gas operators 9 generally perform maintenance during the daytime? 10 A. That's my understanding. Yes. 11 Q. And wouldn't that have the effect of biasing 12 the results high by conducting the measurements at a 13 time that maintenance is most likely to be occurring? 14 A. Potentially, yes. If maintenance was a large 15 source of the emissions, then it could bias it high on 16 our annual estimates if we're assuming that those 17 daytime hours are -- are representative of the annual 18 average. 19 Q. Let's see. I wanted to spend a little bit of 20 time on your discussion of AVOs. And I want to just 21 correct the record a little bit, because your testimony 22 seemed to imply that NMOGA or some other party is 23 advocating that AVOs take the place of Method 21 and OGI 24 measurements. 25 Are you aware that no party is proposing that?

2575 1 A. I'm not aware. 2 Q. Have you ever conducted an AVO at an active 3 oil and gas well site? 4 A. Not an official AVO. I've been at oil and gas 5 sites and have heard and seen emission sources, but 6 not -- not as an official AVO inspection. 7 Q. And in your testimony with respect to AVOs, I 8 believe I heard you said that AVOs are good for 9 detecting large emitters; is that correct? 10 A. Yes. That they are more -- more likely to 11 detect large emitters. 12 Q. And isn't that the primary concern with 13 respect to LDAR, is in identifying the large emitters? 14 A. Yes. But I -- obviously, I don't think AVO 15 can reliably detect those large emitters. 16 Q. And so the proposal where we have a mix of, 17 say, weekly AVOs with other rigorous Method 21 OGI 18 measurements, that represents an appropriate mix, 19 correct? 20 A. I don't know if Method 21 and AVO together. I 21 don't think that's an appropriate mix. But I do think 22 you could have an appropriate mix of AVO and other 23 instrument-based inspections, and including things like 24 OGI cameras and aerial surveys that can frequently 25 detect large emitters.	2577 1 Mr. de Saillan? 2 MS. PARANHOS: Can't hear you. 3 MR. DE SAILLAN: Thank you, Madam Hearing 4 Officer. 5 Can you hear me okay? 6 MR. LYON: Yes. 7 MR. DE SAILLAN: Very good. 8 CROSS-EXAMINATION 9 BY MR. DE SAILLAN: 10 Q. Good afternoon, Dr. Lyon. 11 My name is Charles de Saillan. I'm an 12 attorney representing the New Mexico Environmental Law 13 Center. 14 And I just have one very quick clarifying 15 question for you. 16 You -- I want to go back to your testimony 17 earlier about the proposal for enhanced LDAR for sources 18 that are within a thousand feet of an occupied area. 19 Is it your understanding, Dr. Lyon, that the 20 New Mexico Environmental Law Center also supports that 21 proposal? 22 A. Yes. 23 MR. DE SAILLAN: Okay. Thank you. 24 That's all I have. 25 HEARING OFFICER ORTH: All right. Thank you
2576 1 Q. Okay. 2 I think that's all my questions, Mr. Lyon. 3 Thank you. You've been very helpful. 4 HEARING OFFICER ORTH: Thank you, Mr. Curtis 5 and Dr. Lyon. 6 We do need a break. When we return from the 7 break, I did see Mr. de Saillan on screen, and now I see 8 Ms. Fox. When we return from the break, I will continue 9 with Dr. Lyon. 10 Let's see. Come back at 3:05, please. 11 (Proceedings in recess from 2:50 p.m. to 12 3:05 p.m.) 13 HEARING OFFICER ORTH: Let's come back from 14 the break, please. 15 Do we have your counsel handy? 16 And then I can invite Mr. de Saillan to offer 17 his questions. 18 Ms. Paranhos? 19 MS. PARANHOS: Sorry. I was having technical 20 difficulties. I am here. I am having issues with my 21 audio. 22 HEARING OFFICER ORTH: And if you need to turn 23 off your camera, that's fine. I had to turn mine off 24 this morning. So please go ahead and turn it off if you 25 need to.	2578 1 very much. 2 Any other counsel? 3 Ms. Fox. 4 MS. FOX: Thank you, Madam Hearing Officer. 5 CROSS-EXAMINATION 6 BY MS. FOX: 7 Q. Hello, Dr. Lyon. 8 My name is Tannis Fox. I'm with Western 9 Environmental Law Center, and I represent the parties 10 that we're calling Clean Air Advocates in this 11 proceeding. 12 Thank you very much for your testimony. I 13 just have a couple of lines of inquiry for you. 14 And first is, Dr. Lyon, are you familiar with 15 the testimony from Mr. Smitherman on a study on LDAR 16 that was conducted by the American Petroleum Institute 17 surveying 13 operators? 18 A. Yes. 19 Q. And Mr. Smitherman said that on average less 20 than two leaks were found in the -- during that survey 21 during the initial inspection and less than one week -- 22 one leak on average thereafter. 23 Is that accurate? 24 A. Yes. That's correct. 25 Q. What is your -- and he uses that study, does

2579 1 he not, to imply that leaks are not so common and LDAR 2 is not so efficacious? Is that correct? 3 A. That's what he concluded. Yes. 4 Q. What's your response to that general 5 conclusion? 6 A. Yes. I think using the number of leaks is an 7 inappropriate way of estimating emissions or the 8 efficacy of LDAR, I think particularly because it's 9 really the magnitude of the emissions rather than the 10 number of leaks. And also, many emission sources can be 11 intermittent. So just because during a follow-up survey 12 there's a small number of leaks does not mean that there 13 isn't a high potential to emit from that site. 14 Q. And -- thank you. 15 And in your testimony you discussed studies at 16 well sites and gathering and boosting stations on 17 emissions and leaks from these facilities, correct? 18 A. Yes. 19 Q. And can you please talk a little bit more 20 about the emissions and leaks that have been detected 21 and found at gathering and boosting stations? 22 A. Yes. So there have been several recent 23 studies that have looked at methane emissions from 24 gathering and boosting stations, including an 25 EDF-sponsored study for Colorado State University that	2581 1 sites are maintained well, including making sure they're 2 operating under -- under proper pressure so you don't 3 have these large emissions from -- from gathering 4 compressor stations. 5 Q. What are the implications for the frequency of 6 LDAR inspections given those findings? 7 A. Yes. I think the implications are it's 8 critical to have frequent LDAR at gathering stations 9 because they can have anomalous very high emission 10 events, and a lot of our work has found that these 11 emission events can be short-term, maybe a couple hours 12 or days. 13 So -- so really it's critical that you're 14 continuously looking for problems, doing frequent 15 inspections, and I think even better would be having 16 some kind of continuous monitoring of these facilities 17 to make sure that -- that when operators notice 18 problems, that they're fixed very quickly. 19 MS. FOX: Thank you. That's all I have. 20 HEARING OFFICER ORTH: All right. Thank you. 21 Any other parties or counsel with questions of 22 Dr. Lyon? 23 No? 24 I'll turn then to the Board questions. 25 While I'm doing that, if you're an attendee on
2580 1 used site-level measurements to estimate gathering 2 compressor emissions. 3 Also, there's been some subsequent work by 4 Colorado State University looking at component-level 5 emissions and found that these compressors can -- can 6 have leaks and anomalous emissions. 7 And our recent work, including the aerial 8 surveys by -- by Carbon Mapper, have found that in the 9 Permian Basin gathering stations are a 10 disproportionately large source of emissions compared to 11 other basins, accounting -- with the stations themselves 12 accounting for about 25 percent of the measured methane 13 emissions from -- from large emitters. 14 I think some of these emissions may be permit 15 emissions through things like incomplete combustion or 16 might be some permitted venting, but I think a lot of it 17 is due to both leaks and then inefficient operations, 18 including things like flares that are not properly 19 burned. 20 So I think particularly what happens in the 21 Permian is there's maybe pressure issues where some of 22 the gathering pipelines are overpressurized, and there 23 can be anomalous pressure relief venting from these 24 gathering stations, causing really high emissions. 25 So I think it's critical that -- that the	2582 1 this platform, please reach out through chat with any 2 questions. 3 EXAMINATION 4 BY THE BOARD: 5 HEARING OFFICER ORTH: Madam Chair, do you 6 have questions of Dr. Lyon? 7 CHAIR SUINA: Yes. Thank you, Madam Hearing 8 Officer. 9 Again thank you, Dr. Lyon, for your testimony. 10 I wanted to go back to, I guess, a question 11 about the 1,000 foot. I know I had asked it earlier in 12 the hearing from another witness, but given your 13 background and some of the studies you've referenced. 14 I was wondering if you could elaborate a 15 little bit more on the proposal of the frequent 16 inspections within 1,000 feet and versus, say, 500 feet 17 or 2,000 feet. Could you just elaborate a little bit 18 more on the 1,000 foot? 19 MR. LYON: I mean, that is what we -- we 20 agreed on. I'm not the proper person, I believe, to 21 speak to why that distance. I believe my -- my 22 colleague, Tammy Thompson, may be speaking more about 23 that later. 24 CHAIR SUINA: Okay. 25 All right. Well, thank you so much for your

2583 1 response. 2 And at this point, Madam Hearing Officer, I 3 don't have any other questions. 4 HEARING OFFICER ORTH: Thank you. 5 Vice-Chair Trujillo Davis. 6 VICE-CHAIR TRUJILLO DAVIS: Yes. I just have 7 a couple of clarifying questions. 8 Is it Dr. Lyon? 9 MR. LYON: Yes. 10 VICE-CHAIR TRUJILLO DAVIS: I want to make 11 sure I give you your credit there. 12 Dr. Lyon, I'm a little confused in your 13 presentation. 14 It seems like methane is being used 15 interchangeably with VOCs -- for VOCs, and then I think 16 you clarified in there at some point that it -- you're 17 using methane as like a tracer for VOCs to show -- to 18 use as an example? Did I understand that correctly? 19 MR. LYON: Yes. So EDF's research has been 20 primarily focused on methane emissions. So most of our 21 measurements have used approaches that -- that are 22 specific to methane. We do have some, including the 23 optical gas imaging, that do VOCs, and University of 24 Wyoming did measure VOCs and is currently analyzing that 25 data.	2585 1 Dr. Thompson, could -- could speak much more on that 2 issue. 3 VICE-CHAIR TRUJILLO DAVIS: Okay. So at this 4 point I'm kind of feeling like this is a little out of 5 scope for this rule and what we're supposed to be 6 looking at. 7 So can you just kind of direct me to maybe 8 what I should focus on in your testimony? 9 MR. LYON: Yeah. So I think any time where I 10 say like that the estimates show that the emissions are 11 higher than government estimates, that also applies to 12 VOCs in addition to methane. So while most of the 13 research papers were comparing methane, if you use 14 approaches -- kind of bottom-up approaches with VOCs, 15 you get similar underestimates. 16 So I think the general findings apply whether 17 you're talking about methane or VOCs. And some of the 18 studies like the OGI surveys are really looking at total 19 hydrocarbons including methane and VOCs. 20 VICE-CHAIR TRUJILLO DAVIS: Okay. Thank you 21 for that explanation. 22 And then the other thing I wanted to clarify 23 was you're -- I think you were contending that more 24 inspections were necessary, and then later on you were 25 discussing some of the biggest issues with leaks on
2584 1 But generally all of our research is on 2 methane, and as I said earlier, that since VOCs are 3 co-emitted with methane, I think that -- that the 4 research also applies to VOC engines. 5 VICE-CHAIR TRUJILLO DAVIS: Is that a direct 6 relationship? Is methane equivalent to VOCs in 7 emissions, or does that require a gas analysis? 8 MR. LYON: The gas composition can vary 9 widely. So I think in -- in the production field the 10 VOC content could -- could be maybe over 20, 30 percent 11 in some kind of wet gases, or it could be less than 12 1 percent in -- in dry gases or -- or kind of 13 downstream. So yeah. It greatly varies depending on 14 where -- where you are, which field and which part of 15 the -- the supply chain. 16 VICE-CHAIR TRUJILLO DAVIS: Okay. 17 So just so I'm clear on making these 18 distinctions, VOCs and NOx are precursors to ozone; is 19 that correct? 20 MR. LYON: Yes. 21 VICE-CHAIR TRUJILLO DAVIS: Is methane? Does 22 methane react in turn to ozone, as well? 23 MR. LYON: Methane does impact global ozone 24 levels, but I believe it has very smaller or zero impact 25 on kind of local ozone levels. But my colleague,	2586 1 facilities was general maintenance and then lack of 2 general maintenance that contributed to leaks. 3 So I was hoping that maybe you could draw a 4 distinction for me between the difference between 5 frequent inspections and general maintenance? 6 MR. LYON: Yeah. I mean, personally, I feel 7 that it's not a clear distinction and that often I think 8 that -- that leak detection or repair should be viewed 9 more comprehensively by operators and regulators. It's 10 not just looking for equipment leaks, but also looking 11 for underlying problems, including maintenance issues 12 that could lead to future emissions. 13 So I think a robust program to reduce 14 emissions would include these really comprehensive 15 surveys for -- for looking for emissions and underlying 16 problems that may require longer-term solutions such as 17 changing equipment on the site. 18 VICE-CHAIR TRUJILLO DAVIS: I guess in my mind 19 when I think of an inspection, to me it should be 20 official. That is what I feel like we're talking about 21 here, is you conduct an inspection, it becomes a record, 22 and it's in -- it's -- you can have it pulled for -- for 23 an inspection by an agency or something like that, but 24 it's an official record, whereas general maintenance 25 would just be the day-to-day job at a facility.

2587 1 So I'm not sure I understand -- I understand 2 those differences in your assertion. So -- I mean, if 3 you can clarify it for me, great. If not, that's okay. 4 I'm done with my questions. 5 MR. LYON: Yeah. No. I understand the point 6 about, yeah, having official inspections and 7 requirements, but I -- I would hope that the 8 recordkeeping requirements would -- would be structured 9 in a way that the operators are collecting data that -- 10 that also includes the maintenance status, and I think 11 that would be advantageous, not only to the regulators, 12 but it would help the operators make sure that the 13 equipment is being properly maintained, and that really 14 that those -- the LDAR recordkeeping process could -- 15 could have advantages to the company. 16 VICE-CHAIR TRUJILLO DAVIS: And do you feel 17 that the current rule meets that as far as maintenance 18 recordkeeping? 19 MR. LYON: I'm not familiar with the details 20 in the recordkeeping requirements. 21 VICE-CHAIR TRUJILLO DAVIS: Okay. 22 Thank you very much for your time. I 23 appreciate it. 24 No further questions. 25 HEARING OFFICER ORTH: Thank you.	2589 1 researchers may have observed emissions from maintenance 2 activities occurring during the daytime; is that 3 correct? 4 A. Yes. 5 Q. And do you believe that leak detection and 6 repair programs can help reduce excess emissions that 7 stem from, for example, an improper leak conducted 8 maintenance activity? 9 A. Yes. As I just stated, I believe that LDAR 10 can really be a more comprehensive process, that's not 11 just identifying leaks, but they're really looking at 12 the entire emissions profile of the site, including the 13 maintenance. So you could perhaps see if a scheduled 14 maintenance had not been performed or was done 15 improperly. I think that was -- is very useful 16 information. 17 So I think that by doing these inspections you 18 can not only reduce leaks, but really find any kind of 19 operational inefficiencies that would benefit the 20 operator to fix. 21 Q. Thank you, Dr. Lyon. 22 And you did testify earlier today that EDF 23 converted the New Mexico-specific methane inventory that 24 is based on the EDF methane measurements to VOCs; is 25 that correct?
2588 1 Member Bitzer? 2 MEMBER BITZER: My question was already asked. 3 So I'm good. Thank you, Madam Chair. 4 HEARING OFFICER ORTH: Thank you. 5 Member Garcia. 6 MEMBER GARCIA: No questions right now. Thank 7 you. 8 HEARING OFFICER ORTH: Thank you. 9 Member Honker? 10 MEMBER HONKER: No questions. Thank you. 11 HEARING OFFICER ORTH: All right. Thank you. 12 Did any of that prompt redirect for you, 13 Ms. Paranhos? 14 MS. PARANHOS: Yes. Just one -- a couple 15 questions. 16 REDIRECT EXAMINATION 17 BY MS. PARANHOS: 18 Q. Dr. Lyon, you provided some testimony in 19 response to Mr. Curtis' questions regarding the time of 20 day that the measurements were taken; is that correct? 21 A. Yes, um-hum. 22 Q. And were most of the measurements taken during 23 the daytime? 24 A. Yes, they were. 25 Q. And Mr. Curtis pointed out that the	2590 1 A. Yes. 2 Q. And to your knowledge, is EDF recommending any 3 specific direct methane control requirements in this 4 proceeding? 5 A. No. 6 Q. To your knowledge, are we only relying on 7 estimates of VOCs as a basis for our cost effectiveness 8 analyses? 9 A. Yes. 10 MS. PARANHOS: Thank you. 11 I have no more questions for Dr. Lyon. 12 HEARING OFFICER ORTH: All right. Thank you 13 very much, Ms. Paranhos and Dr. Lyon. 14 MR. LYON: Thank you. 15 HEARING OFFICER ORTH: I believe we can excuse 16 you for the moment. 17 MS. PARANHOS: Next witness will be Hillary 18 Hull. 19 HEARING OFFICER ORTH: Thank you. 20 Ms. Hull, I see you on the screen. 21 Would you spell your name for the transcript, 22 please. 23 MS. HULL: Yes. It's Hillary, H-I-L-L-A-R-Y, 24 Hull, H-U-L-L. 25 HEARING OFFICER ORTH: Thank you.

2591 1 Raise your right hand. 2 Do you swear or affirm to tell the truth? 3 MS. HULL: I do. 4 HEARING OFFICER ORTH: Thank you. 5 HILLARY HULL 6 (Relating to Topic Order 27) 7 having been first duly sworn or affirmed, was 8 examined and testified as follows: 9 DIRECT EXAMINATION 10 BY MS. PARANHOS: 11 HEARING OFFICER ORTH: And don't forget the 12 exhibits, Ms. Paranhos. 13 MS. PARANHOS: Yes, absolutely. Madam Hearing 14 Officer, Hillary Hull will be relying on EDF Exhibits A, 15 P, which is her resume, C, E, H, Q, R, T, U, V, X, Y, Z, 16 AA, BB, CC, DD, FF, JJJ and III. 17 (Exhibits EDF P, Q, R, T, U, V, X, Y, Z, AA, 18 CC, DD, FF, JJJ and III admitted.) 19 Q. (BY MS. PARANHOS) Ms. Hull, where are you 20 employed? 21 MS. HULL: Before we -- before we get started 22 actually, would -- could I get screen sharing 23 privileges, please? 24 All right. Go ahead, Elizabeth. 25 MS. PARANHOS: Right.	2593 1 A. Yes. 2 Q. And did you submit both direct and rebuttal 3 testimony on LDAR? 4 A. Yes. 5 Q. And are Exhibits FF and JJJ correct copies of 6 your direct and rebuttal testimony, or do you have any 7 corrections to either of those testimonies? 8 A. Yes. We have one correction to my rebuttal 9 testimony with respect to the estimated foregone 10 reductions we calculated would accrue if NMED did not 11 require inspections for existing transmission stations, 12 that I will explain in my testimony today. 13 Q. Thank you, Ms. Hull. 14 Could you please summarize the additional VOC 15 benefits that will accrue to people of New Mexico that 16 live within 1,000 feet of a well site pursuant to EDF's 17 LDAR proximity proposal? 18 A. Our proposal is highly cost effective and will 19 result in the removal of an additional 3,600 tons of VOC 20 on top of the reductions that the application of the 21 NMED proposal alone would achieve. It will also secure 22 important co-benefits by reducing 14,300 tons of methane 23 and 150 tons of hazardous air pollutant annually. 24 Importantly, it will protect the health of 25 over 35,000 New Mexicans, many of whom are particularly
2592 1 Q. Hillary, where are you employed? 2 A. One little technical issue. 3 I am director of research and analytics for 4 the Environmental Defense Fund. 5 Q. And what is your educational background? 6 A. I have a bachelor's degree in civil 7 engineering from the University of Texas at Austin and a 8 master's degree in environmental engineering with a 9 specialty in atmosphere and energy from Stanford 10 University. 11 Q. And can you provide the Board with a brief 12 overview of your work experience? 13 A. Yes. I've spent the past seven years 14 developing and managing analytics and policy for EDF's 15 state, federal and international oil and gas and natural 16 advocacy efforts. This includes regulatory advocacy, 17 emissions inventory compilation data and economic 18 analysis, technical support for rulemaking and 19 regulation, and policy analysis and development. 20 And prior to working at EDF, I was a senior 21 project engineer for Environmental Resources Management, 22 which is an environmental consulting firm. 23 Q. Thank you. 24 And is EDF Exhibit P an accurate copy of your 25 CV?	2594 1 vulnerable to the deleterious health effects caused by 2 exposure to ozone and toxic air pollution. 3 Q. Thank you. 4 And can you please summarize the opinions in 5 your rebuttal testimony regarding a comparison of the 6 NMED and NMOGA LDAR proposals? 7 A. Yes. First, NMED's estimate of the compliance 8 cost of its proposed LDAR requirement is very 9 conservative. From my analysis, the per well site cost 10 of conducting semiannual inspections is 30 percent lower 11 than ERG's estimate. 12 Second, NMOGA's estimated per well site costs 13 are grossly inflated. NMOGA's estimate of the cost of 14 connecting inspections is magnitudes higher than NMED's, 15 EPA's, the Colorado Air Pollution Control Division or 16 EDF estimates. 17 For example, NMOGA's estimate of the per well 18 site cost to conduct semiannual inspections is 19 286 percent higher than EDF's estimate, between 168 and 20 228 percent higher than EPA's, and 169 percent higher 21 than NMED's. 22 Third, NMOGA's proposal to decrease the 23 frequency of inspections at well sites and compressor 24 stations will result in the release of thousands of 25 additional tons of volatile organic compounds and

2595 1 methane to the atmosphere annually. These emissions 2 contribute to unhealthy levels of ozone pollution and 3 the climate crisis. 4 Importantly, frequent LDAR, as NMED has 5 proposed, can curb this cost effectively. 6 HEARING OFFICER ORTH: Ms. Hull, this is 7 Felicia. 8 Would you please slow down a little bit. 9 MS. HULL: Sure. 10 HEARING OFFICER ORTH: You speed up when you 11 read. 12 MS. PARANHOS: Thank you. 13 Q. I'd like to turn now to EDF's proposal to 14 increase leak inspections at well sites located within 15 1,000 feet of occupied places. 16 How many additional tons of volatile organic 17 compounds will our proposal remove from the atmosphere 18 annually if adopted? 19 A. I estimate our proposal will result in 20 additional 3,600 tons of VOC reductions annually. 21 Q. And you mentioned some co-benefits associated 22 with that proposal. 23 What would those be? 24 A. Yes. Our proposal will also result in 14,300 25 tons of methane and 150 tons of hazardous air pollutant	2597 1 more than 3,800 adults with asthma, over 2,200 adults 2 with coronary heart disease, almost 2,600 with chronic 3 obstructive pulmonary disease, and more than 1,200 4 adults who have experienced or are at risk of a stroke. 5 My direct testimony explains the methodology I 6 use to assess the demographics of persons protected by 7 our proposal. 8 Q. Thank you. 9 And did you also estimate the cost 10 effectiveness of our proposal? 11 A. Yes, I did. Using the methodology I described 12 in my written and -- direct and rebuttal testimony, I 13 estimate that our proposal can be conducted at a cost of 14 \$894 per ton of VOC reduced within the proximity 15 boundary. This increases the overall statewide cost 16 effectiveness of LDAR from \$317 per ton of VOC reduced, 17 per the state's proposal, to \$349 per ton of VOC 18 reduced, accounting for increased frequency within that 19 proximity boundary. 20 This does not account for savings of gas that 21 some operators can save by fixing leaks. Considering 22 quarterly and monthly inspections separately, this comes 23 to \$576 per ton VOC reduced from monthly inspections 24 within the boundary and \$1,351 per ton VOC reduced for 25 quarterly inspections within the boundary.
2596 1 reductions annually. 2 Q. And did EDF prepare a New Mexico-specific 3 inventory of methane and VOC emissions that incorporated 4 data from the direct measurement studies? 5 A. Yes. As discussed in my direct testimony, EDF 6 prepared a specific New Mexico VOC inventory that we 7 used to estimate the baseline emissions that can be 8 abated by LDAR and the reductions that frequent 9 instrument-based inspections can achieve. This 10 inventory is based on observed measured emissions in New 11 Mexico and in other US oil and gas basins where 12 scientists have observed significantly higher emissions 13 than traditional bottom-up emissions inventories 14 reflect. 15 Q. Thank you. 16 And were you able to estimate the populations 17 that would be protected by our LDAR proximity proposal? 18 A. Yes. We estimate that over 2,700 children 19 under the age of five, more than 4,500 adults 65 years 20 or older, more than 5,700 people living in poverty, and 21 19,000 people of color, including over 5,800 Native 22 Americans, all live within 1,000 feet of a well site. 23 Additionally, those living in close proximity 24 to these well sites have health conditions that could be 25 exacerbated by additional air pollution. These include	2598 1 Q. Thank you. 2 And can you explain why our proposal makes the 3 NMED's proposed LDAR program more cost effective? 4 A. Yes. Adoption of our proposal increases 5 pollutant reductions at 3,365 well sites in the counties 6 subject to NMED's proposal, and it increases those 7 pollutant reductions at those sites by 73 percent. As 8 noted above, we estimate our proposal will result in an 9 additional 3,600 tons of VOC removed from the atmosphere 10 annually. 11 These additional reductions when compared to 12 the overall costs makes the overall cost effectiveness 13 of the NMED LDAR program more. 14 Q. Thank you. 15 And did you compare our estimate, EDF's 16 estimate, of the cost effectiveness of our LDAR 17 proximity proposal to quarterly and monthly inspection 18 programs adopted by other states? 19 A. Yes, I did. EDF estimates that statewide 20 quarterly inspections, including those both within and 21 outside of the proposed 1,000 foot proximity boundary, 22 will cost only \$187 per ton VOC reduced overall, and our 23 proposal increases overall statewide LDAR cost 24 effectiveness from \$317 per ton VOC reduced to \$349 per 25 ton of VOC reduced, which is highly cost effective to

2599 1 cost/benefit analysis from other jurisdictions. 2 For example, in its 2014 cost/benefit 3 analysis, the Colorado Department of Public Health and 4 Environment, CDPHE, found quarterly inspections of 5 production facilities to be between \$1,019 and \$1,268 6 per ton of VOC reduced, and monthly inspections to be 7 between \$2,235 and \$2,752 per ton VOC reduced. 8 The EPA CTGs estimate that quarterly 9 inspections at well sites cost between \$3,453 and 10 \$15,929 per ton VOC reduced without savings, and \$2,619 11 and \$15,064 per ton VOC reduced with savings. 12 As I noted in my written testimony, both of 13 these cost effectiveness calculations are somewhat 14 outdated, the rules were promulgated in 2014 and 2016 15 respectively, whereas the EDF cost calculation accounts 16 for information taken from more recent compliance 17 reports submitted by operators to the EPA which reflect 18 real world inspection metrics. 19 Additionally, the California Air Resources 20 Board, or CARB, requires quarterly inspections of all 21 well site facilities. The CARB cost effectiveness 22 analysis associated with its rule finds that quarterly 23 inspections can be implemented at a cost of between \$575 24 and \$650 per ton of methane. Using the average 25 methane-to-VOC ratio in New Mexico, this translates to a	2601 1 quarterly or monthly. 2 Colorado uses a different metric than NMED to 3 bucket the well sites for purposes of its LDAR program. 4 For example, the NMED proposal uses potential to emit 5 VOCs, whereas Colorado uses actual uncontrolled VOC 6 emissions. 7 Colorado's tiered LDAR program also buckets 8 well sites into different inspection tiers than NMED. 9 For example, Colorado requires semiannual inspections 10 for well sites with actual uncontrolled VOCs between two 11 and 12 ton per year, whereas NMED proposes semiannual 12 inspections for well sites with a PTE of between two and 13 five ton per year of VOC. 14 Thus, our proposal differs from Colorado in 15 terms of the metric used to bucket wells into the 16 quarterly or monthly inspection frequencies, but 17 otherwise mirrors Colorado's rule in terms of requiring 18 operators to conduct more frequent inspections at well 19 sites located near occupied places within that 1,000 20 foot boundary than other rules require -- than the rules 21 otherwise require. 22 Q. Thank you. 23 And turning now to NMED's estimate of the cost 24 effectiveness of its LDAR requirements, did you conduct 25 a review and analysis of NMED's cost effectiveness
2600 1 cost of between \$2,300 and \$2,600 per ton VOC reduced. 2 Note that this is also higher than EDF's 3 estimate for the cost per ton associated with our 4 proximity proposal. 5 In sum, a comparison of quarterly and monthly 6 inspection requirements adopted by other state air 7 quality regulators underscores the cost effectiveness of 8 quarterly and monthly inspections. 9 Q. And is our proximity-based proposal based on 10 rules adopted by other jurisdictions? 11 A. It is. And I believe this speaks to one of 12 the questions asked earlier. In 2019, the Colorado Air 13 Quality -- AQCC promulgated a rule that requires 14 operators to inspect well sites located within 15 1,000 feet of occupied areas more frequently than 16 facilities located outside of this radius. 17 Specifically, the Colorado rule requires 18 operators inspect well sites monthly if the well site 19 has actual uncontrolled VOC emissions of 12 ton per year 20 or greater. Operators must inspect well sites quarterly 21 if the well site has actual uncontrolled VOC emissions 22 of between two and 12 ton per year. 23 Our proposal mirrors Colorado's in that we 24 used the same 1,000 foot radius, the same definition of 25 occupied areas, and the same inspection frequencies of	2602 1 analysis for its LDAR proposal? 2 A. Yes. 3 Q. And could you please describe your analysis. 4 A. Sure. So in preparation for filing my direct 5 and rebuttal testimony, I reviewed ERG's LDAR reductions 6 and costs VOC spreadsheet, which is NMED Exhibit 69. 7 Using more recent information regarding 8 inspection costs, I calculate a per well site cost of 9 \$1,658 for semiannual LDAR. This number represents the 10 full cost of implementing an LDAR program in-house. In 11 other words, it includes LDAR setup costs, survey costs, 12 repair costs, and recordkeeping and reporting costs. 13 This number is 30 percent lower than that assumed by 14 ERG. 15 ERG relied on site-level data taken from EPA's 16 2016 Control Techniques Guidelines to estimate the costs 17 of conducting annual, semiannual and quarterly 18 inspections. EPA assumed \$1,318 for annual of OGI, 19 \$2,285 for semiannual OGI, and \$4,220 for quarterly OGI, 20 all using \$2,012. 21 Thus, ERG assumed the same costs as assumed by 22 EPA in 2016, except ERG scaled the costs for inflation 23 using the Chemical Engineering Plant Cost Index from 24 2012 dollars to 2019 dollars. So this resulted in 25 estimates of \$1,370 for annual OGI, \$2,375 for

2603 1 semiannual OGI, and \$4,385 for quarterly OGI. Based on 2 their site-level emission estimates, ERG assumed all 3 sites would conduct semiannual LDAR at an annual cost of 4 \$2,375, and that is in 2019 dollars. 5 From my -- from my analysis, I compared the 6 ERG per well site cost to more recent 2020 EPA estimated 7 costs contained in EPA's TSD for its NSPS 8 reconsideration. In 2020, EPA estimated the per well 9 site costs for conducting semiannual inspections at 10 nonlow-producing well sites to be \$2,384 and \$1,949 at 11 low-producing well sites. 12 Notably, this estimate is lower than that used 13 by ERG in its LDAR spreadsheet. In my opinion, this 14 comparison indicates that NMED is overestimating costs. 15 I also compared NMED's average costs per ton 16 to conduct LDAR inspections with estimates conducted by 17 the Colorado Air Pollution Control Division. In 2014, 18 Colorado adopted a similar inspection program to that 19 proposed by NMED. Colorado's program, like NMED's 20 proposal, requires different -- differing inspection 21 frequencies based on a facility's emissions. 22 In 2014, Colorado estimated the average cost 23 effectiveness of conducting instrument-based inspections 24 at well sites to be \$1,259 per ton for well production 25 facilities. This assumed a tiered program consisting of	2605 1 inspections, is growing. Indeed, many of these firms 2 are using efficient screening methods, such as aerial 3 surveys, that can screen multiple facilities for leaks 4 in a much shorter time frame than can be achieved using 5 ground-based OGI methods. 6 Per a recent report by Datu Research, a number 7 of methane mitigation service firms nearly doubled in 8 the last four years alone. Per this report, Datu 9 Research surveyed 98 firms between June 29th and July 10 21st, 2021. More than half of the respondents stated 11 they could at least serve 100 more well sites per day 12 than they currently serve. Nearly half noted they could 13 scale up to serve more than 500 well sites per day using 14 advance methane detection technologies such as fix and 15 service airplanes or satellites. 16 The rapid growth in advance methane detection 17 technologies is likely to significantly reduce the cost 18 of LDAR compliance. And NMED's proposal allows 19 operators to obtain approval to use alternative -- 20 alternative equipment leak monitoring plans in 21 Section 116D. Most likely many of these plans will rely 22 on a combination of fixed sensors, aerial surveys and/or 23 satellites. 24 In sum, recent data regarding actual 25 inspection time and the emergence of more efficient LDAR
2604 1 monthly, quarterly, annual and once in a lifetime 2 inspections. 3 NMED estimates the average cost per ton of VOC 4 to conduct LDAR inspections at New Mexico facilities 5 subject to its proposal to be \$3,506. While not exactly 6 apples to apples, a comparison of the NMED and Colorado 7 estimates demonstrates NMED's estimate is conservative. 8 Information submitted by operators to EPA in 9 compliance with EPA's LDAR requirements further 10 underscores the likelihood that ERG has overestimated 11 costs. As indicated in my direct testimony, in 2018 12 M.J. Bradley analyzed approximately 120 reports 13 containing compliance data resulting from LDAR surveys 14 at 3,832 well sites conducted by operators in 2017 and 15 2018. 3,202 of the well sites surveyed contain 16 information on survey time. 17 These reports indicate that average time to 18 conduct an LDAR survey is going down as the operators 19 have been implementing and -- state and federal LDAR 20 programs. The reports reviewed by M.J. Bradley indicate 21 an average LDAR inspection takes approximately 1.25 to 22 1.6 hours per well, including travel time. 23 In addition, information from a new study 24 demonstrates that methane mitigation industry, including 25 third-party contractors who can conduct LDAR	2606 1 inspection methods indicates that NMED's estimate of the 2 costs associated with conducting ground-based OGI or 3 Method 21 vehicle inspections is likely quite 4 conservative. 5 Q. Thank you, Hillary. 6 And did you also analyze NMOGA's estimate of 7 the cost effectiveness of NMED's proposed LDAR program? 8 A. I did. 9 Q. And do you agree with NMOGA's cost estimates? 10 A. No, I do not. 11 Q. Would you please explain the basis for that 12 opinion. 13 A. Yes. NMOGA's cost estimates are 14 sophisticatedly -- sorry -- are significantly higher than 15 recent EPA estimates, as well as ERG estimates, and 16 286 percent higher than our estimate. NMOGA's higher 17 cost estimates are based in part on comments the 18 American Petroleum Institute submitted to EPA in 2015 on 19 EPA's 2016 draft Control Techniques Guidelines. 20 In the draft CTGs, EPA estimated a per well 21 site inspection cost of \$2,230 per well site. This is 22 very similar to the per well site cost used by ERG to 23 analyze NMED's proposal. API increased this estimate 24 approximately threefold to over \$6,400 per site. This 25 number -- sorry. I have a slide that -- move this down

2607 1 a little bit. There. 2 This number dramatically overstates the cost 3 of LDAR and was notably rejected by EPA when it 4 finalized the 2016 CTGs. 5 As a basis for this threefold increase, API 6 presumed that all operators would create their own 7 in-house LDAR survey program rather than employ 8 third-party providers. This assumption inflates the 9 cost of implementing an LDAR program. 10 For small operators, it is often more 11 economical to hire a third-party contractor to conduct 12 these leak inspections than to purchase its own IR 13 camera and the other equipment necessary to conduct the 14 inspections themselves. 15 For example, when Colorado first adopted its 16 LDAR program in 2014, it assumed that operators who have 17 less than 500 wells would hire a third-party contractor 18 to conduct LDAR as they would not be able to fully 19 utilize an IR camera. 20 API also used basin-level averages to imply 21 that for each survey an operator would travel 22 approximately 340 miles round trip. However, this 23 estimate seems extraordinarily high. 24 Q. Thank you. 25 And did NMOGA provide any support for how, if	2609 1 these tons in my direct and rebuttal testimony. 2 Q. And did NMOGA also propose a less protective 3 LDAR program than NMED for gathering and boosting 4 compressor stations? 5 A. Yes. NMED's proposal requires quarterly LDAR 6 for compressor stations emitting less than 25 ton per 7 year VOC and then monthly LDAR for compressor stations 8 emitting equal to or greater than 25 ton per year VOC. 9 However, NMOGA's proposal decreases the inspection 10 frequency from monthly to quarterly for compressor 11 stations emitting 25 ton per year VOC or more and from 12 quarterly to semiannual for those emitting below 25 ton 13 per year VOC. 14 Q. And did you estimate the amount of pollution 15 that would be emitted from gathering and boosting 16 stations if the Board adopted NMOGA's weakened LDAR 17 proposal? 18 A. Yes. Using the methodology described in my 19 rebuttal testimony, I estimate NMOGA's proposal will 20 result in up to 8,400 additional tons of VOC and up to 21 34,000 additional tons of methane leaked annually using 22 EDF emission estimates. Using 2020 EPA emission 23 estimates, I find that NMOGA's proposal results in 680 24 additional tons of VOCs and 2,700 additional tons of 25 methane leaked annually.
2608 1 at all, API's comments to EPA are applicable to this 2 proceeding? 3 A. No. 4 Q. And did NMOGA propose a less protective well 5 site LDAR program than NMED? 6 A. Yes. NMOGA's proposal requires annual LDAR at 7 wellhead sites emitting less than 10 ton per year VOC, 8 semiannual LDAR at wellhead sites emitting between 10 9 and 25 ton per year VOC, and quarterly LDAR at wellhead 10 sites emitting more than 25 ton per year of VOC. 11 This increases the emission thresholds 12 triggering each LDAR tier by fivefold compared to NMED's 13 proposal. NMED proposes wellhead sites emitting less 14 than two ton per year of VOC conduct annual LDAR, well 15 sites emitting between two and five ton per year of VOC 16 conduct semiannual LDAR, and those emitting more than 17 five ton per year VOC conduct quarterly LDAR, as I've 18 shown in this chart. 19 Q. And did you estimate the amount of pollution 20 that would be emitted if the Board adopted NM -- 21 sorry -- NMOGA's weakened LDAR proposal for well sites? 22 A. Yes. EDF estimates that NMOGA's proposal 23 would result in 23,000 additional tons of VOC and also 24 79,000 additional tons of methane left unabated 25 annually. I describe the methodology used to estimate	2610 1 Q. And does your analysis indicate the need for 2 frequent instrument-based inspections at both well sites 3 and gathering and boosting compressor stations? 4 A. Yes, it does. 5 Q. Thank you. 6 And then, lastly, do you support NMED's 7 proposed LDAR requirements for both well sites and 8 gathering and boosting compressor stations? 9 A. Yes, I do. Based on my analysis, NMED's LDAR 10 requirements for well sites and gathering and boosting 11 compressor stations is highly cost effective and will 12 remove 153,000 tons of VOCs from the atmosphere 13 annually. In addition, it has co-benefits related to 14 the reduction of 531,000 tons of methane annually. 15 MS. PARANHOS: Thank you. 16 That concludes Ms. Hull's summary of her 17 direct and rebuttal prefiled written testimony. 18 I do have a few questions on surrebuttal. 19 HEARING OFFICER ORTH: Okay. Thank you. 20 Q. (BY MS. PARANHOS) Hillary, did you hear 21 Kinder Morgan's testimony earlier today regarding a 22 joint proposal to inspect compressor stations in the 23 transmission segment between EDF and Kinder Morgan? 24 A. Yes. We agree. EDF and Kinder Morgan are 25 jointly proposing a minimum quarterly inspection

2611 1 requirement in compliance with EPA requirements. 2 Q. Thank you. 3 And are you aware of testimony earlier -- 4 actually, I guess it was last week now -- regarding the 5 potential impact on stripper wells of NMED's proposed 6 rules including the leak detection and repair 7 requirements? 8 A. Yes. 9 Q. And have you conducted any kind of analysis 10 regarding the ownership of stripper wells in New Mexico? 11 A. Yes. 12 Q. Could you please provide a summary of that 13 analysis to the Board. 14 A. Sure. EDF pulled data from New Mexico OCD and 15 our methane inventory in order to analyze -- well, our 16 methane inventory which we converted into the VOC 17 inventory in order to analyze ownership of stripper 18 wells. 19 According to NMOCD, as of 6/28/2021 there are 20 34,158 active oil and gas stripper wells statewide, or 21 62 percent of currently active wells in New Mexico. 22 Production from active stripper wells makes up about 23 3 percent of oil production and 5 percent of gas 24 production according to the Operator Annual Production 25 Report of 2020. However, operators who own active	2613 1 David Lyon previously discussed. This indicates the 2 need for frequent instrument-based inspections at these 3 well sites to identify abnormal operating conditions 4 that result in excess venting or leaking. 5 MS. PARANHOS: Thank you so much, Hillary. 6 I have no further questions for Ms. Hull. 7 HEARING OFFICER ORTH: Thank you. 8 Ms. Hull, would you stop sharing for just a 9 moment, please. 10 MS. HULL: Certainly. 11 I'll figure it out. 12 MR. HISER: Madam Hearing Officer? 13 HEARING OFFICER ORTH: Yes. Mr. Hiser? 14 MR. HISER: I have a couple questions. 15 CROSS-EXAMINATION 16 BY MR. HISER: 17 Q. And is it Ms. Hull or Dr. Hull? 18 I'm sorry. I missed that section of your 19 intro. 20 A. Ms. is fine. 21 Q. Ms. Hull? 22 Thank you for your presentation. 23 You repeated a couple of times that NMOGA was 24 using the API number for its costing. 25 Where in its testimony or anywhere has NMOGA
2612 1 stripper wells are responsible for 99.6 percent of 2 statewide oil production and 97 percent of gas 3 production. 4 Q. And, Ms. Hull, in your opinion, is the 5 implication of your analysis showing that operators who 6 own active stripper wells are responsible for 7 99.6 percent of oil production and 97 percent of gas 8 production statewide? 9 I'm sorry. That was -- I misstated that. 10 What is your opinion of the implication of 11 your analysis? 12 A. In my opinion, this demonstrates that 13 companies who operate stripper wells also operate many 14 higher-producing wells. This would suggest that even if 15 an operator chose to permanently plug and abandon a 16 particular low-producing well or wells, the company 17 would still generate considerable income from its 18 higher-producing wells. 19 Q. Thank you. 20 And in your analysis did you also look at the 21 emissions from stripper wells? 22 A. Yes, I did. Using our well site inventory, we 23 also estimate that stripper wells are responsible for a 24 disproportionately large portion of emissions, over 25 22 percent compared to their low share of production, as	2614 1 adopted that for its actual cost analysis? 2 A. My understanding was that NMOGA did not 3 actually adopt it, but used it as input for its 4 underlying assumptions. So -- 5 Q. Isn't it a bit misleading to tell the Board 6 that if we didn't use that number, that our estimates 7 were 286 percent high? 8 MS. PARANHOS: Objection. 9 MS. HULL: (Unintelligible and/or inaudible.) 10 MS. PARANHOS: Objection. NMOGA's absolutely 11 relied on API's comments. They both submitted two 12 separate exhibits that are EPA's comments that include 13 detailed critiques of EPA's cost estimates for the CTGs, 14 and they relied on the information in those exhibits in 15 their comments which they included in their red-line of 16 the NMED proposal. They specifically refer to those EPA 17 comments and indicated that based on those comments NMED 18 has underestimated costs. And that is precisely what 19 Ms. Hull is critiquing. 20 MR. HISER: Ms. Hull, I believe, testified 21 that NMOGA's cost estimates that were presented on a 22 pound per -- pound per ton -- or dollar per ton basis 23 were 286 percent high. I don't believe that NMOGA ever 24 did any such thing, and I was asking her to show where 25 we did.

2615 1 HEARING OFFICER ORTH: All right. It was 2 posed in an argumentative way, Mr. Hiser. 3 If you would please rephrase that question. 4 Q. (BY MR. HISER) So, Ms. Hull, is there a place 5 in the NMOGA testimony where they -- where NMOGA was 6 calculating a dollar per ton cost to the LDAR proposal 7 where it used a number for the base cost of LDAR other 8 than the ERG number? Understanding that NMOGA may have 9 used a different tonnage for the impact of the LDAR 10 process. 11 A. I haven't committed the NMOGA testimony to 12 memory. So I would need to look. 13 Q. Okay. 14 In page 7 of your direct testimony, you talk 15 about trying to come up with the most current 16 information in developing your ground-up inventory for 17 purposes of calculating PTEs. 18 Did you use the Greenhouse Gas Reporting 19 Program inventory for that purpose? 20 A. Partly, yeah. So the inventory is compiled 21 using various sources of available data, one of which is 22 the Greenhouse Gas Reporting Program. 23 Q. Okay. 24 In your direct testimony at page 11, you show 25 some calculations about -- and calculate, I believe, a	2617 1 what she did. I was just wondering if she ever actually 2 presented an exhibit that walked through each stage, 3 because I was having trouble following everything that 4 had been done in her testimony. And so it's mostly to 5 help me understand her testimony that I was looking for 6 an exhibit. 7 But if you have one readily available, I 8 accept that and can move on. 9 MS. HULL: I'll offer that. It's a pretty 10 standard cost/benefit calculation. So looking at the 11 total impact of the cost of the proposal and then 12 looking at the total impact of the reductions and 13 dividing the two. 14 Q. (BY MR. HISER) And in that cost/benefit 15 analysis that -- as you've just described it, how do you 16 deal with the variations in the PTE of the underlying 17 facility? 18 A. We approached it a couple of ways. We looked 19 at facilities with and without what we consider to be 20 super-emitters. 21 Q. Okay. 22 So you did two calculations, one including and 23 one excluding super-emitters? 24 A. Yes. And then the one that we ended up 25 including is the one that excludes super-emitters,
2616 1 \$349 per ton VOC produced. 2 Do you have an exhibit or anything which 3 actually shows your work and how you went from the cost 4 to the final value? And if so, could you direct me to 5 what that exhibit is? 6 A. Sorry. Are you -- are you asking if I've laid 7 out an exhibit with the calculation? 8 Q. Yes. 9 A. I don't know that the underlying calculation 10 is included in the exhibit, but I know that the data is. 11 Q. So you supplied data, but you didn't actually 12 show the complete calculation stream? Is that what you 13 did? 14 I'm sorry. I didn't hear your answer. 15 A. I have to check. 16 Q. Okay. That's fine. Take your time. 17 MS. PARANHOS: So just to move things along, I 18 believe Ms. Hull in both her direct and rebuttal 19 prefiled written testimony provided detailed explanation 20 of the methodology that she used to estimate costs, both 21 in order to estimate the costs of EDF's LDAR proximity 22 proposal, and also to provide a critique of NMED's cost 23 estimate, as well as NMOGA's cost estimate. 24 MR. HISER: I understand, Ms. Paranhos, 25 reading her testimony that she did provide details of	2618 1 because we think that's closest to how an operator would 2 calculate its PTE. 3 Q. In slide 5, I believe, of your testimony that 4 you did today, you show that you included facilities 5 with a PTE of zero through, I think, 205. 6 How did you handle the problem of the PTE zero 7 facility in your calculation? 8 A. We included those. 9 Q. Well, wouldn't the control cost of a facility 10 with a PTE of zero be effectively infinite? 11 A. Yeah. We're looking at it in aggregate. 12 Q. Okay. 13 A. For the entire range of that bucket, I guess. 14 Q. Okay. 15 And did I hear correctly in your testimony 16 that you believe the current cost of an LDAR program is 17 about \$1,658 if it's done semiannually, and is that for 18 a well site? 19 A. Hold on. 20 Yes. That's a per well site cost of 1,658 for 21 semiannual LDAR. 22 Q. And can you tell us again what the source was 23 and the time frame or region of country? 24 A. Source of that -- 25 (Simultaneous discussion.)

2619 1 Q. -- yeah, piece of information. 2 A. Um-hum. Yeah. That comes from EPA. The 3 basis is the 2020 EPA reconsideration TSD, and we've 4 revised that number slightly to reflect data coming in 5 from the compliance reports submitted to EPA for Quad 6 0a. 7 Q. Okay. 8 And is -- when you've -- throughout this 9 testimony a couple places you refer to an EPA 2020 cost, 10 is that coming from that reconsideration TSD? 11 A. Yes. 12 Q. Okay. Thank you very much. 13 And then you have testified, I think, this was 14 from -- and you cited a company's name as the data 15 for -- that an average time for LDAR now is decreased to 16 1.25 to 1.6 hours. 17 Was that on a per well basis? 18 A. It's per well, and it includes travel time. 19 Q. Okay. 20 And then in much of the -- I think that was -- 21 maybe it was after slide 11, but you talked about 22 advanced technologies that are being used. 23 Would those be actual Method 21s, or those 24 would be different technologies using OGI or other 25 techniques?	2621 1 federal ozone NAAQS or exposure to some other 2 contaminants that are within -- that are being emitted 3 from these sites? 4 A. It's really a reference to all of them, any of 5 the pollutants that are associated with oil and gas that 6 are creating negative health impacts. 7 Q. And -- and in terms of those health impacts, I 8 assume that if I had questions about that I should ask 9 Dr. Thompson about what those health impacts are and how 10 that -- how that's considered in terms of your proposal? 11 A. I was going to suggest just that. Yes. 12 MR. ROSE: Okay. Thank you. I have no 13 further questions. 14 HEARING OFFICER ORTH: All right. Thank you. 15 Ms. Fox, I think I saw you on screen there. 16 Go ahead. 17 MS. FOX: Thank you, Madam Hearing Officer. 18 I just have a couple of questions for 19 Ms. Hull. 20 CROSS-EXAMINATION 21 BY MS. FOX: 22 Q. Hello, Ms. Hull. 23 My name is Tannis Fox. I'm with Western 24 Environmental Law Center, and I represent the parties 25 that are -- we are calling ourselves Clean Air Advocates
2620 1 A. Those would be different technologies, so 2 likely satellite or tower-mounted or even drone-based. 3 There -- there are various technologies out there that 4 are -- would be considered in that category. 5 MR. HISER: Those are the questions I had for 6 you. I appreciate your clarification on those points. 7 Thank you. 8 MS. HULL: Sure thing. 9 HEARING OFFICER ORTH: Thank you, Mr. Hiser. 10 Mr. Rose? 11 MR. ROSE: Yeah. Let me unmute first. 12 CROSS-EXAMINATION 13 BY MR. ROSE: 14 Q. Ms. Hull, just some questions for 15 clarification. 16 If I heard your testimony correctly, you 17 talked about the EDF proposal being more protective, and 18 I was just trying to figure out what you meant by more 19 protective. 20 Were you referring to concentrations below the 21 ozone NAAQS or something else? 22 A. I was speaking about the impact of -- yeah, of 23 the VOC on -- VOC and other pollutants on the health of 24 the populations within the boundary. 25 Q. And is that related to exceedances of the	2622 1 in this proceeding. 2 And thank you for your testimony. 3 Ms. Hull, you're familiar with Colorado's 4 rules on LDAR, correct? 5 A. Yes, I am. 6 Q. Specifically, you're familiar with the 7 Colorado rule that's been put into place that mirrors 8 EDF's and Clean Air Advocates' proximity proposal; is 9 that correct? 10 A. Sorry. Yes, I am. 11 Q. Do you know how long that rule in Colorado has 12 been in effect? Approximately? 13 A. I do not. 14 Q. Has the Colorado Air Quality Control 15 Commission recently proposed new LDAR frequencies for 16 oil and gas facilities to control ozone precursors and 17 hydrocarbons? 18 A. Yes. 19 Q. And what are the new LDAR -- do you know the 20 new LDAR frequencies that are being proposed? 21 A. Not off the top of my head. Sorry. No, not 22 off the top of my head. 23 Q. Do you know if the new rules require LDAR 24 frequencies that are the same or similar to the ones 25 that EDF is proposing in its proximity proposal to apply

2623 1 to facilities that are close to -- that are within 2 disproportionately impacted communities? 3 A. Yes. They are. 4 Q. And do you know in general what is meant by a 5 disproportionately impacted community? 6 A. Yes. So that would be a community that is 7 impacted more so by the production and processing and 8 transport of oil and gas than others. So those within 9 closer proximity would be disproportionately impacted, 10 because they would have higher exposure to those 11 pollutants. 12 Q. And so are the frequencies that are being 13 proposed for facilities close to disproportionately 14 impacted communities -- are those monthly and quarterly 15 inspection frequencies? 16 A. Yes, they are. 17 Q. And so the Colorado Air Quality Control 18 Commission is proposing to extend its LDAR frequencies 19 that now apply to facilities that are within 1,000 feet 20 of occupied areas more broadly to disproportionately 21 impacted communities; is that correct? 22 A. Yes, that is correct. 23 MS. FOX: That's all the questions I have. 24 Thank you. 25 HEARING OFFICER ORTH: Thank you.	2625 1 And do you have any data or any understanding 2 of whether marginalized populations you describe live in 3 close proximity to wells on state lands as opposed to 4 wells within the Navajo Nation? 5 A. Yes. There are populations from -- from both 6 that live within those proximities. Depending on the 7 parameter you're looking at, it varies, but about 8 90 percent live on nontribal lands, and about 10 percent 9 live on tribal lands within those boundaries. 10 Q. Great. 11 And, Ms. Hull, the Board has previously 12 inquired about regulations on the Navajo Nation. 13 Are you aware of whether the Navajo Nation has 14 taken any actions to address emissions from wells on the 15 Navajo Nation territory? 16 A. Yes. They have proposed a comprehensive 17 regulatory program for new and existing facilities, 18 without any exemptions for low-producing or low-emitting 19 wells. 20 Q. Great. Thank you. 21 And if the EIB adopts a less stringent 22 frequency of leak inspections at wellhead facilities, as 23 proposed by NMOGA, is it your opinion that people of 24 color and Native Americans will experience additional 25 exposure to toxic volatile organic compounds?
2624 1 Mr. Jaynes, I see you. 2 MR. JAYNES: Thank you, Madam Hearing Officer. 3 CROSS-EXAMINATION 4 BY MR. JAYNES: 5 Q. Good afternoon, Ms. Hull. 6 I am Daniel Jaynes. I'm with the University 7 of New Mexico Law Clinic, representing Center for Civic 8 Policy and NAVA Education Project. 9 I just have a few questions for you. 10 So, Ms. Hull, in your testimony you mention it 11 is estimated that over 35,000 New Mexicans live within 12 1,000 feet of a well site, of those approximately 19,000 13 are people of color, including over 5,800 Native 14 Americans; is that correct? 15 A. Yes. 16 Q. And is the percentage of people of color 17 including Native Americans living within the 1,000 feet 18 of a well site proportional to the demographics of New 19 Mexico residents living within the state? 20 A. No, it is not. It's disproportionate. A 21 higher percentage of people of color and Native 22 Americans live within 1,000 feet of a well site in -- 23 represented in New Mexico as a whole. And I think that 24 answers Tannis' question from earlier, as well. 25 Q. Thank you.	2626 1 A. Yes. Less stringent frequency of leak 2 inspections at wellhead facilities could result in up to 3 23,000 tons of additional VOCs leaked into the 4 atmosphere from wellhead facilities located in areas 5 that are predominantly occupied by people of color and 6 Native Americans. 7 Q. Thank you. 8 And, Ms. Hull, have you read through the 9 rebuttal testimony of Lee Ann Hill? 10 A. Yes. 11 Q. Based on Ms. Hill's testimony and your 12 knowledge of the demographic makeup of the populations 13 living within 1,000 feet of a well site, do you have any 14 opinion on whether people of color, Native Americans are 15 exposed to greater health risks from pollution from oil 16 and gas production? 17 A. Yes. People of color and Native Americans 18 living within 1,000 feet of a well site are 19 disproportionately higher risk of health conditions 20 exacerbated by additional air pollution, which includes 21 asthma, heart disease and cancers. 22 MR. JAYNES: Thank you, Ms. Hull. 23 Madam Hearing Officer, we have no further 24 questions for Ms. Hull. 25 HEARING OFFICER ORTH: Thank you, Mr. Jaynes.

2627 1 Any other party have questions of Ms. Hull? 2 I don't see anyone else's screen. 3 I'll turn now to questions from the Board. 4 While the Board is asking its questions, if 5 you're an attendee on this platform, please reach out 6 through the chat with any questions. 7 CROSS-EXAMINATION 8 BY THE BOARD: 9 HEARING OFFICER ORTH: Madam Chair? 10 CHAIR SUINA: Thank you, Madam Hearing 11 Officer. 12 And thank you, Ms. Hull, for your testimony. 13 And I just wanted to kind of add to what the 14 previous legal counsel was talking about in terms of 15 some of the demographics. 16 I noted in your -- in your written testimony 17 that you utilized the US Census Bureau's American 18 Community Survey five-year estimates; is that correct? 19 MS. HULL: Yes, that's correct. 20 CHAIR SUINA: And are you -- and also the 21 Center -- CDC 2020 Places data set, as well. 22 MS. HULL: Correct. 23 CHAIR SUINA: And being from one of the, you 24 know, Native American communities, I sort of have a 25 unique perspective on this in terms of those data sets.	2629 1 it up here. 2 So I was -- you know, again based on the 3 various studies that you've referenced and your 4 experience, can you elaborate more on the proposal, the 5 frequent inspections within 1,000 feet? Like why was 6 the 1,000 foot chosen instead of, say, 500, 2,000 feet, 7 3,000 feet? Could you elaborate more? 8 MS. HULL: Yeah. I mean, I think the most 9 direct answer is that it's mirrored on Colorado's rule 10 that does the same. Right. And Colorado had, you know, 11 pulled together analytics to look at the impacts on 12 facilities and populations in that boundary, as well, 13 and so we sort of mirrored what they had implemented. 14 CHAIR SUINA: Okay. Thank you so much for 15 that. 16 And so I think that's all I have for right 17 now. Thank you, Ms. Hull. 18 MS. HULL: Sure. 19 HEARING OFFICER ORTH: Vice-Chair Trujillo 20 Davis? 21 VICE-CHAIR TRUJILLO DAVIS: Yes. 22 I apologize, Ms. Hull, but I didn't -- wasn't 23 able to catch the full testimony so I'll have to look 24 back at it. So I don't have any questions for now. 25 Thank you.
2628 1 Have you -- do you know about the difficulties 2 and the challenges for gathering accurate data counts 3 and population for Native American communities? 4 MS. HULL: I would imagine that it certainly 5 exists. Yes. I don't have any data to support that 6 assertion, but yeah. 7 CHAIR SUINA: Okay. Okay. 8 Yeah. And I didn't know if you took that into 9 consideration because of the difficulty and challenges 10 in the past of undercounting in -- in Native American 11 communities. 12 MS. HULL: Unfortunately, there wasn't really 13 any way to account for that quantitatively. So it's 14 more of just something we have to note. But, yeah, 15 unfortunately, we just had to use what was available. 16 CHAIR SUINA: Okay. All right. 17 So if it was undercounted, that means it's an 18 underestimate of the potential impact to populations, in 19 particular in minority -- or Native American 20 communities; is that -- 21 MS. HULL: Yes. I think it would be a safe 22 assumption that it could be conservative. 23 CHAIR SUINA: Okay. Thank you for that. 24 In addition to that -- I did ask your 25 colleague, Dr. Lyon, this question earlier. Let me pull	2630 1 MS. HULL: Thanks. 2 HEARING OFFICER ORTH: Thank you. 3 Member Bitzer? 4 MEMBER BITZER: Yeah. 5 First of all, I -- I think it takes a Stanford 6 grad to throw a big, fancy word out there like -- what 7 was it -- deleterious. I had to look that up -- 8 MS. HULL: You caught me. 9 MEMBER BITZER: -- being a Berkeley boy and 10 all. So anyway, nice credentials. 11 Has anybody considered that -- if I could 12 steal one from Bob Dylan, it helps to know which way the 13 wind blows? 14 Because you got a CEP around a well that's 15 circular, but if we got a prevailing wind, and in New 16 Mexico we tend to have them, because the windmills point 17 this way, because the wind is always coming from that 18 way. 19 Wouldn't it make more sense to have kind of an 20 oval area where you have schools or kids that's downwind 21 of -- typically downwind and maybe extends this same 22 square footage about, what -- about of 3.14 million 23 square foot plume area that you might want to consider? 24 Has anyone ever looked at that? 25 MS. HULL: I am not sure. I would think that

2631 1 it's part of the consideration that went into the 2 selection of the 1,000 foot barrier, you know, as well 3 as the notion that the wind changes. So, you know, in 4 order probably to be the most protective, I would think 5 it would just be a circle, naturally. 6 But I am unaware of investigation otherwise. 7 MEMBER BITZER: Okay. I was just -- that's 8 the only thing. It just occurred to me because we were 9 seeing maps, yours, which was very interesting, you had 10 wells around the school and the community in that photo, 11 and then the previous presenter had these photos, 12 satellite type photos of plumes heading in one 13 direction. I was like, oh, I know that's a typical wind 14 pattern, I'll bet -- I'll bet the actual downwind damage 15 is being done beyond 1,000 feet in that direction and 16 not a few hundred feet in the other direction. 17 So -- but, of course, it doesn't always blow 18 the same direction. So I guess this is sort of an 19 average, throwing a dart type of shape. 20 Anyway, that's all I had. Thank you. 21 MS. HULL: Thanks. 22 HEARING OFFICER ORTH: Thank you. 23 Member Garcia? 24 MEMBER GARCIA: Yes. Thank you. I just have 25 one clarifying question, if I may.	2633 1 In terms of how we transition from talking 2 about methane to talking about VOCs, so you base the -- 3 some of your analysis on the methane inventory and then 4 utilizing some type of conversion or relationship to 5 transition to VOC inventories calculation? 6 MS. HULL: Um-hum. 7 CHAIR SUINA: Is that correct? 8 MS. HULL: That's correct, yes. 9 CHAIR SUINA: Okay. 10 MS. HULL: I'm happy to elaborate if you'd 11 like. 12 CHAIR SUINA: Yes. Can you elaborate on that? 13 I'm still trying to get my head around that. 14 MS. HULL: Yeah. So, you know, as David was 15 mentioning earlier, methane and VOC are co-pollutants 16 in -- for most of these sources, and so what we used was 17 the Western Regional Air Partnership inventory that it 18 had put together, and they come up with both VOC and 19 methane inventories on a source level by county. So we 20 were able to develop methane-to-VOC ratios in order to 21 convert our methane inventory into a VOC inventory based 22 on New Mexico-specific data. 23 This is not unprecedented. Right? EPA 24 uses -- similarly uses ratios to convert between methane 25 and VOC in its rulemakings when it discusses the
2632 1 Ms. Hull, you mentioned that Navajo had 2 proposed a comprehensive program of inspections. 3 That's not in this proceeding, right? Or 4 where was that proposed? For who? 5 MS. HULL: That is not in this proceeding, and 6 I am not privy to the particulars of that proposal. I 7 just know that it is -- it has been proposed and it is, 8 I believe, in the process of being finalized. 9 MEMBER GARCIA: Is that Navajo EPA or -- 10 MS. HULL: I -- I do not know. 11 MEMBER GARCIA: Okay. Thank you. 12 HEARING OFFICER ORTH: Thank you. 13 Member Honker? 14 MEMBER HONKER: No questions. Thank you. 15 HEARING OFFICER ORTH: All right. Thank you. 16 Does any of that prompt follow-up with you, 17 Ms. Paranhos? 18 CHAIR SUINA: I have a follow-up. 19 HEARING OFFICER ORTH: Sorry. Madam Chair. 20 CHAIR SUINA: Thank you, Madam Hearing 21 Officer. Sorry. I was wondering if somebody else might 22 bring up this question. 23 I just wanted to go back again in your 24 testimony, again just reiterating back from Dr. Lyon's 25 presentation, as well.	2634 1 benefits of multi-pollutant versus single-pollutant cost 2 for LDAR. So EPA also investigates, you know, what 3 costs look like if you're just looking at reductions of 4 VOC versus VOC plus methane, et cetera. And to do that 5 it has a standard ratio that it applies, as well. 6 CHAIR SUINA: So EPA -- excuse me. So EPA has 7 a standard ratio, but from how you explained it, you 8 utilize New Mexico-specific data. 9 MS. HULL: That's correct. Yes. 10 CHAIR SUINA: Okay. 11 So it was probably a little different ratio 12 than EPA's; is that correct? 13 MS. HULL: It was a little bit different. 14 Yes. But not significantly. We just wanted to use data 15 that was specific to the state. 16 CHAIR SUINA: Okay. Thank you for that 17 clarification. Appreciate it. 18 MS. HULL: Certainly. 19 CHAIR SUINA: Thank you, Madam Hearing 20 Officer. 21 HEARING OFFICER ORTH: Thank you. 22 Ms. Paranhos, did any of that raise redirect 23 for you? 24 MS. PARANHOS: No, Madam Hearing Officer. 25 HEARING OFFICER ORTH: All right. Thank you.

2635 1 Thank you very much, Ms. Hull, for your 2 testimony. 3 MS. HULL: Thank you, Madam Hearing Officer. 4 HEARING OFFICER ORTH: Thank you. 5 I saw on the spreadsheet an asterisk by 6 Dr. Thompson's name, and I wasn't sure whether that was 7 intentional or not. But I'm wondering if perhaps we 8 could take Mr. Smitherman next, because he's not 9 available tomorrow, and when I looked at the 10 availability of your witnesses, it seemed that 11 Dr. Thompson might be if we get to that point. I'm 12 not -- we may still be able to take her today. 13 Is that okay? 14 MS. PARANHOS: I am checking with her right 15 now, but I do believe that she is certainly available 16 this afternoon, and I hope as well tomorrow morning. 17 HEARING OFFICER ORTH: Okay. 18 MS. PARANHOS: I haven't got a response back 19 but -- 20 HEARING OFFICER ORTH: Just got a thumbs up. 21 MS. THOMPSON: Yeah. That is fine. 22 MS. PARANHOS: There she is. 23 MS. THOMPSON: That is fine. 24 HEARING OFFICER ORTH: Thank you very much. 25 So let's see. It's 4:22.	2637 1 HEARING OFFICER ORTH: Let's come back from 2 the break, please. 3 Mr. Hiser. 4 MR. HISER: Madam Hearing Officer. 5 HEARING OFFICER ORTH: Do we have 6 Mr. Smitherman? 7 MR. HISER: I believe we do. 8 MR. SMITHERMAN: I'm here. 9 MR. HISER: Yes, we do. 10 HEARING OFFICER ORTH: Thank you. 11 Go ahead. 12 JOHN R. SMITHERMAN 13 (Relating to Topic Order 27) 14 having been first duly sworn or affirmed, was 15 examined and testified as follows: 16 DIRECT EXAMINATION 17 BY MR. HISER: 18 Q. So, Mr. Smitherman, could you please state 19 your name for the record? 20 A. John R. Smitherman. 21 Q. And your testimony in this matter has 22 previously been admitted; is that correct? 23 A. That's correct. 24 Q. As Exhibit A1 and Rebuttal Exhibit -- ah, I 25 misplaced it -- 40 -- is it 43? 41. 41; is that
2636 1 Where are you, Mr. Hiser? 2 MR. HISER: I'm here, Madam Hearing Officer. 3 HEARING OFFICER ORTH: Hello. 4 We do need to take a break before the five 5 o'clock public comment session. I will note that at the 6 moment I have just one public commenter. 7 MR. HISER: Okay. 8 HEARING OFFICER ORTH: So accounting for the 9 break, would you want to do that at 4:45, or would you 10 want to do that now and come back? 11 MR. HISER: Honestly, Madam Hearing Officer, 12 whichever you think is better for the Board and the 13 court reporter. 14 HEARING OFFICER ORTH: All right. I think 15 it's better if we take a break now. 16 Cheryl? Is that okay? 17 Yeah. 18 All right. Let's take a break now, come back 19 at 4:40 and do what we can with Mr. Smitherman then. 20 Thank you. 21 MR. HISER: Thank you, Ms. Thompson, for 22 help -- letting us get Mr. Smitherman in. We really 23 appreciate that. 24 (Proceedings in recess from 4:23 p.m. to 25 4:40 p.m.)	2638 1 correct? 2 A. It's late in the day. I'll have to trust you. 3 Q. Thank you for that. 4 Do you have any corrections to your direct 5 testimony? 6 A. Not that I recall. 7 Q. I just wanted to recollect for you. 8 Did you find a small -- a mathematical error 9 in one of the tables in the -- in your testimony? 10 A. Oh, thank you for reminding me. Yes, I did. 11 It's basically I referred to the wrong cell in a 12 spreadsheet. We corrected that. And that was in 13 between the filings that NMOGA made and today. 14 Q. And so you've corrected that and some 15 testimony -- and some of the materials you're going to 16 present today; is that correct? 17 A. I will talk about that today. It makes a 18 small change in actually some numbers on two different 19 spots, because it cascades. 20 Q. Okay. So we'll point that out when we get to 21 it. Thank you very much. 22 A. Thank you. 23 Q. Did you prepare a summary of your direct 24 testimony? 25 A. I did.

2639 1 Q. Would you like to present that summary? 2 A. I'd be happy to do so. 3 I'll start with direct, if you don't mind. 4 Is that sharing properly? 5 Q. Yes. 6 A. Fabulous. It's not advancing properly. There 7 we go. 8 Thank you, Board Chair, Vice-Chair, Board 9 Members, Madam Hearing Officer. 10 To start with, in Section 2. -- excuse me -- 11 20.2.50.116, LDAR, NMOGA -- NMOGA has -- had offered and 12 NMED has now accepted our suggestion to allow up to 30 13 days for a repair of a leak that's discovered through 14 LDAR, with some exceptions. We appreciate that change. 15 As you probably have heard from other 16 witnesses, sometimes things take longer than we expect 17 them to take. Sometimes they take longer than we'd like 18 them to take. And to be able to reliably repair all 19 leaks that we find, most are within 15 days, which just 20 is probably unmanageable. 21 Now, currently, we have a lot of supply chain 22 issues due to the pandemic, but even in the future, 23 we're still going to have issues trying to get parts 24 when they're not on hand. 25 We also have the opportunity to repair --	2641 1 equipment that deals with fluids that have less than 2 10 percent VOC by weight, including coal bed methane, be 3 removed from the LDAR requirements, also. At a minimum, 4 we need to exclude all nonhydrocarbon gases, nitrogen, 5 CO2 and H2S and things like that. 6 As a reminder to everyone, this part is 7 intended to reduce ozone precursors, NOx and VOCs, and so 8 it is appropriate that we apply these LDAR requirements 9 to sources that have fluids in them that have 10 significant percentages of NOx or VOCs, particularly 11 VOCs. 12 Also, I believe that NMED should align the AVO 13 inspection frequencies with the OCD's inspection 14 requirements as applicable. We -- we really understand 15 that AVOs are an important part of a full complement of 16 inspection protocols, but it does not make sense to have 17 two different rules from different agencies that don't 18 align. It creates confusion that's avoidable. 19 Q. So for this it would be -- you would be 20 seeking something, for example, like a confirmation from 21 NMED that AVOs conducted to meet the OCD requirement may 22 also be used to satisfy the NMED requirement? 23 A. That's correct. Optimally we would define the 24 requirements for AVOs under this rule to align with the 25 requirements under the OCD rule, but at a minimum, they
2640 1 excuse me -- to tag certain parts that you can't repair 2 in that time with a tag labeled Repair Delayed so you'll 3 know which ones that have been found that have not been 4 able to be addressed in that time frame. So we 5 appreciate NMED accepting that change. 6 Also, operators are already obligated to 7 perform leak detection and repair on equipment either 8 because they've got a permit that requires it or they're 9 subject to NSPS Quad 0, Quad 0a or the series. So we 10 want to make sure that these two programs align and are 11 not duplicative of each other. So we had suggested 12 language that would make sure that we do avoid that. 13 And so far I've heard that NMED has accepted that 14 concept. 15 Q. And so by that you mean that you heard 16 Ms. Kuehn's testimony earlier today that if we perform a 17 Quad 0 or Quad 0a inspection and it meets the 18 requirements of the Part 50 program it can be used for 19 both? 20 A. That's correct. That's exactly what I heard. 21 So I assume that they're not going to be duplicative. 22 I'm trying to use my keyboard to advance, and 23 it's not being very cooperative. 24 Also, NMOGA has suggested that not all 25 equipment that's used in air and steam service, but also	2642 1 would recognize each other. 2 The NMED's latest red-line, their September 3 16th red-line, they suggested that LDAR frequencies 4 result in extraordinarily high emissions reduction 5 costs, and costs are important. Imposing requirements 6 that are not cost effective, as you've heard many, many 7 witnesses say, will result in overly burdensome 8 compliance costs that will relate to negative impacts to 9 state and local communities, because it will end up 10 causing wells to be plugged prematurely. 11 I've also testified that there are flaws in 12 ERG's, that's Eastern Research Group's, anticipated cost 13 and emission reduction calculations. We will talk about 14 that in more detail later, but I do want to incorporate 15 those statements here, and I'll use my surrebuttal for a 16 deeper dive into those issues. 17 That concludes my summary of the direct and 18 rebuttal. 19 MR. HISER: I think, Madam Hearing Officer, 20 for the purposes of expedition, we were going to move to 21 Mr. Smitherman's surrebuttal, as well, to get that done. 22 And -- 23 HEARING OFFICER ORTH: Yes. Thank you. 24 MR. HISER: And what I think would be most 25 expeditious is the parties have reached agreement, I

2643 1 think, on most issues. There's, I think, like seven 2 slides where there might be a proffer, and maybe it 3 would be easiest just for when Mr. Smitherman reaches 4 that, we just state what the proffer would be, and then 5 we move on to the next slide after that, if that meets 6 your approval. 7 HEARING OFFICER ORTH: I think that sounds 8 like an efficient way to do it. Thank you. 9 MR. HISER: Okay. 10 Q. So, Mr. Smitherman, you can please bring up 11 your surrebuttal slides. 12 A. Working on that now, sir. 13 MR. HISER: And, Madam Hearing Officer, could 14 you check with the reporter and make sure she's hearing 15 Mr. Smitherman okay? 16 He seems a little bit fainter than he has been 17 in the past. 18 HEARING OFFICER ORTH: Cheryl, how we doing? 19 THE REPORTER: Yes. He is a little soft 20 spoken. I would like him to speak up if he can. 21 MR. SMITHERMAN: I'll do my best. 22 Is that better? 23 THE REPORTER: That is much better. Thank 24 you. 25 MR. SMITHERMAN: Thank you.	2645 1 calculated. While doing so, I will make the case that 2 the data that NMOGA used in its calculations are the 3 best data available for that purpose, contemporary, New 4 Mexico-specific data. I will contrast our data with 5 that used by the Department through their contractor, 6 ERG, old, non-New Mexico-specific data. 7 The concept of how emissions reductions from 8 LDAR are calculated is really pretty straightforward. I 9 will use a well site as an example. 10 In the first step, a theoretical average well 11 site is devised. Another name for that is a model 12 plant. This average well site model plant has an 13 average number of all the typical equipment that you 14 might find at a well site, the separators, heater 15 treaters, compressors, et cetera. 16 And there are several sources -- data sources 17 available for determining what a model plant should look 18 like. NMOGA has selected the model plant data that is 19 the most representative of operations in New Mexico 20 today. 21 Once the amount of equipment at the model 22 plant is determined, the second step is to apply an 23 average number of components that could be sources for 24 leaks associated with each equipment type, connectors, 25 valves, et cetera. This gives you a total number of all
2644 1 Before I open my slides, first and foremost, 2 NMOGA supports a requirement on LDAR at least annually 3 on every well site, every gathering and boosting 4 station, every gas processing plant and every 5 transmission compressor station in New Mexico. This is 6 not a debate about whether LDAR should be required. 7 It's a discussion about the frequency of the LDAR 8 surveys, how many times per year they should be 9 required. 10 No one should miss the fact that NMOGA is 11 supportive of expanding LDAR to the up to 92 percent of 12 wells in New Mexico that are not currently required to 13 perform LDAR surveys under the NSPS Quad 0, Quad 0a 14 series. That is adding up to 43,982 wells to LDAR. 15 Please do not lose sight of that as we discuss 16 frequencies and thresholds. 17 LDAR is expensive, and costs matter. More 18 frequent surveys lead to more compliance costs. More 19 frequent surveys also lead to reduction in emissions. 20 However, I'm going to show you that the added VOC 21 emissions reductions from NMED's proposed increased LDAR 22 frequency do not warrant the extraordinary added costs 23 on a dollar per ton basis. 24 To get to that results, I will first walk you 25 through how LDAR costs and emissions reductions are	2646 1 components on the model plant. 2 Third, an average leak rate is applied to each 3 of the components. Now, this average leak rate doesn't 4 mean that every such component leaks that amount. It is 5 a statistical average. For example, if in a study you 6 determine that one in 100 valves is found to have a leak 7 and the leak rate for that one valve is 50 cubic feet 8 per hour, then the average leak rate for all valves 9 would be .5 cubic feet per hour, 50 divided by 100. 10 The data used to determine these statistical 11 averages usually -- excuse me -- generally includes 12 large emitters in their data set. As such, these 13 emission factors are designed to be representative of 14 all leaks, including large emitters. 15 Finally, statistical leak rates per component 16 are summed to get a total statistical leak rate for the 17 well site model plant. But that's whole gas. VOCs make 18 up just part of the gas that might leak. So a factor is 19 used to adjust the total leak rate to yield a VOC leak 20 rate for the well site model plant. 21 NMOGA created three model plants for well 22 sites and a separate one for gathering and boosting 23 stations. To create its model plants, NMOGA used the 24 most recent Greenhouse Gas Reporting Program data from 25 the San Juan Basin and the Permian Basin for its well

2647 1 site model plants and a recent Colorado State 2 University/Department of Energy study for its gathering 3 and boosting model plant. 4 ERG used older and less New Mexico-specific 5 EPA Control Techniques Guideline, or CTG, for their 6 model plants. 7 To arrive at the effectiveness of LDAR to 8 reduce leak rates for any model plant, EPA has 9 established a table of reduction factors for specific 10 LDAR survey frequencies. They actually have two tables, 11 one for each of the main two LDAR techniques. But 12 they're very close. 13 As you will see, increasing the frequency of 14 LDAR has diminishing returns. While the leak rate 15 reduction effectiveness goes up with higher frequencies, 16 there are diminishing returns for increasing the 17 frequency. 18 To put these leak volumes and leak volume 19 reductions on a cost per ton basis, results that I just 20 described must be coupled with the associated cost of 21 LDAR surveys. This yields the cost per ton for such 22 surveys. That is the calculation that is important if 23 you're comparing the choices of applying LDAR or not 24 applying LDAR. That's not what's being considered here. 25 The more germane calculation is the	2649 1 So let's dive into the numbers, shall we? 2 HEARING OFFICER ORTH: I'm sorry to interrupt, 3 Mr. Smitherman. 4 If you would please find a good stopping point 5 in the next couple of minutes, I need to take a little 6 bit of public comment before we proceed with the rest of 7 your testimony. 8 MR. SMITHERMAN: You know, Ms. Orth, your 9 timing is perfect. This is a great stopping point. 10 HEARING OFFICER ORTH: All righty. Well, 11 thank you very much. And thank you for stopping 12 sharing. 13 It is a minute to 5:00. I see our first 14 public commenter on the platform. This is our five 15 o'clock public comment session. 16 I did have these folks reach out to the Board 17 administrator, Brenda McKenna, Dee Dicamillo, David 18 Anderson and April Perkins. 19 If you are on the platform and I did not just 20 call your name, please reach out through the chat. 21 Comment is taken on audio, not video, it's 22 taken under a brief oath and is limited to five minutes. 23 Ms. McKenna, I'm unmuting you. 24 Can you hear me? 25 MS. MC KENNA: Yes.
2648 1 incremental cost of more frequent LDAR and the 2 incremental reduction in VOC emissions associated with 3 that same -- same change in frequency. 4 Excuse me. 5 That is what I will do for you today, and as 6 you will see, the results are extremely high incremental 7 costs for those small reductions in VOC volumes. This 8 extraordinary investment is not prudent given the 9 testimony we've already heard from Mr. McNally that VOC 10 reductions have only a modest impact on ozone 11 concentration in this region. This rule targets ozone 12 formation. The most impactful ozone precursor is NOx, 13 not VOCs in most regions. 14 I hope that by the end of my testimony you 15 will be comfortable with how these calculations are 16 made, you will agree that the data NMOGA used are 17 appropriate, and you will see that the LDAR frequencies 18 NMED is asking for are unreasonably expensive relative 19 to those recommended by NMOGA. 20 I urge you to accept NMOGA's suggested changes 21 that will result in LDAR being performed one to four 22 times -- excuse me -- one to four times per year at 23 every well site and two to four times a year at every 24 gathering and boosting station, every gas processing 25 plant and every transmission compression station.	2650 1 Can you hear me? 2 HEARING OFFICER ORTH: Yes, very clearly. 3 Thank you. 4 If you would please spell your name for the 5 transcript. 6 MS. MC KENNA: Very good. It is Brenda 7 McKenna. Brenda is B-R-E-N-D-A, McKenna is 8 M-C-capital-K-E-N-N-A. 9 HEARING OFFICER ORTH: Thank you. 10 If you would raise your right hand. 11 Do you swear or affirm to tell the truth? 12 MS. MC KENNA: Yes. 13 HEARING OFFICER ORTH: Thank you. 14 BRENDA MC KENNA 15 having been first duly sworn or affirmed, gave 16 public comment as follows: 17 PUBLIC COMMENT 18 HEARING OFFICER ORTH: I'll start your five 19 minutes now. 20 MS. MC KENNA: Thank you. 21 Good evening. 22 My name is Brenda McKenna, and I represent 23 District 9 in the New Mexico State Senate, which 24 includes the Counties of Bernalillo and Sandoval 25 Counties.

2651 1 I express my appreciation to the Environmental 2 Improvement Board for organizing this public forum. 3 Why is New Mexico earning an F on smog? We 4 are earning an F by failing our fellow New Mexicans who 5 call the counties of Lea, Eddy and San Juan Counties 6 home. This is because they live where volatile organic 7 compounds that drive the creation of smog are polluting 8 the air moms, dads, grandparents, aunts, uncles, 9 children and infants breathe every day. 10 What does smog do? It damages lungs, 11 exacerbates asthma and emphysema and causes heart 12 disease and cancer. How many of us would choose to live 13 in that kind of environment that would shorten and 14 degrade your life or even more especially that of your 15 kids and grandkids? 16 Governor Lujan Grisham and Secretary Kenney 17 are moving forward to turn the F grade around, and I 18 support them wholeheartedly. In 2019, I accompanied 19 former US Representative Haaland to the Counselor 20 Chapter in the Navajo Nation. We saw and smelled the 21 flaring of methane gas from wells. These wells were in 22 proximity to homes. 23 Imagine the propane flaring one sees when a 24 hot air balloon is being prepared for flight. That is 25 the type of flaring we saw that day, only methane is 84	2653 1 build on these strong proposed rules in three ways. 2 One, protect those living closest to the 3 development by requiring more frequent inspections to 4 find and fix leaks. 5 Two, ensure strong requirements for operators 6 to control pollution during the completion of an oil or 7 gas well, as well as when they redevelop an existing 8 well. 9 Three, strengthen requirements to cut 10 pollution from pneumatic controllers that are used in 11 oil and gas production. The devices are the second 12 largest source of oil and gas methane emissions in New 13 Mexico. NMED should require companies to inspect these 14 for leaks and accelerate the timeline to retrofit 15 equipment with zero bleed or zero emission controllers. 16 Join me and help the Gov -- to help the 17 Governor, Secretary Kenney and fellow advocates to help 18 ensure we see the Counties of Lea, Eddy and San Juan 19 Counties earn an A for cleanliness of their air. 20 Thank you very much. 21 HEARING OFFICER ORTH: Thank you very much, 22 Ms. McKenna. 23 Our other three commenters are on the 24 telephone, as I understand it. 25 Caller 25, I've unmuted you.
2652 1 more times worse than carbon dioxide and contributes to 2 25 percent of global warming. 3 The United States is still one of the leading 4 contributors to global warming, and with that methane 5 come the VOCs that create smog, which basically has the 6 effect of a sunburn on our lungs. We must reverse 7 course. 8 I spoke to one of our hosts from that visit in 9 2019 recently. He told me there was no change. If 10 anything, there are more wells. Approximately 4,000 11 more permits have been issued. Not only is the oil and 12 gas industry drilling more there, they are -- they don't 13 seem willing to support even the most basic good 14 neighbor regulations. 15 My friend hosted another group recently to 16 Counselor. This time it was a group of high school 17 students. The students drew the flaring they saw and 18 wrote down what they were witnessing in their journals. 19 The field trip was shortened because my friend did not 20 want them to develop headaches due to the methane and 21 co-pollutants all around them. 22 I had to ask myself if a visiting class of 23 kids could get a headache from breathing this air, what 24 does it mean for people who live close to these 25 facilities? For that reason, I'd like to see the EIB	2654 1 Who is this, please? 2 Caller 25? Can you hear me? 3 Okay. I'm going to move to Caller 26. 4 Caller 26, can you hear me? 5 MS. DICAMILLO: Hello? 6 HEARING OFFICER ORTH: Oh, yes. Hello. 7 Tell me who this is. 8 MS. DICAMILLO: Yeah. This is Dee Dicamillo. 9 I don't know what number I am. 10 HEARING OFFICER ORTH: Okay. No. That's 11 great. 12 Would you spell your name, please. 13 MS. DICAMILLO: Yes, ma'am. D-E-E, and the 14 last name is D-I-C-A-M-I-L-L-O. 15 HEARING OFFICER ORTH: Thank you. 16 And if you would raise your right hand. 17 Do you swear or affirm to tell the truth? 18 MS. DICAMILLO: Yes, I do. 19 HEARING OFFICER ORTH: Thank you. 20 DEE DICAMILLO 21 having been first duly sworn or affirmed, gave 22 public comment as follows: 23 PUBLIC COMMENT 24 HEARING OFFICER ORTH: I'm going to start your 25 five minutes now.

2655 1 MS. DICAMILLO: Thank you. 2 I am not a politician, and I am not as erudite 3 as Ms. McKenna in -- in relation to the -- to the 4 specifics of what we're talking about. 5 I have been an art teacher and an art history 6 teacher for 35 years and -- at UNM through Taos Academy 7 and Taos High School for many years. And I saw many 8 children when I taught elementary and high school who 9 had asthma, who had different forms of lung problems. 10 My stepson is a doctor who is in -- at Albuquerque in 11 Presbyterian Hospital, and he has seen the same kinds of 12 increases in asthma in children. 13 So basically, what I want to say is I think 14 it's unconscionable that 130,000 New Mexico's -- New 15 Mexicans live within a half mile of oil and gas 16 development. And as we can see from Ms. McKenna's 17 testimony, the methane gas produces smog that is -- is 18 absolutely horrid on the lungs and the health of 19 children. 20 It is a shame that the oil and gas operations 21 that release one million metric tons of climate-warming 22 methane each year will inevitably increase by 70 percent 23 the droughts that have been happening in the last 24 several years. 25 And we need -- you know, given -- given what	2657 1 I -- I'm a Southern New Mexico -- 2 HEARING OFFICER ORTH: Wait. Hold on. Hold 3 on. 4 MR. ANDERSON: Okay. 5 HEARING OFFICER ORTH: I need you to spell 6 your name, please. 7 MR. ANDERSON: I'm sorry. 8 Dave Anderson, A-N-D-E-R-S-O-N. 9 HEARING OFFICER ORTH: Thank you. 10 And if you would raise your right hand. 11 Do you swear or affirm to tell the truth? 12 MR. ANDERSON: I do. 13 HEARING OFFICER ORTH: I'm going to start your 14 five minutes now. Thank you. 15 DAVE ANDERSON 16 having been first duly sworn or affirmed, gave 17 public comment as follows: 18 PUBLIC COMMENT 19 MR. ANDERSON: I live in Southern New Mexico. 20 I've been here -- oh, gosh. I came here in '75. 21 I've been interested in solar for a long time. 22 Actually, I use solar on my house now. I've converted 23 completely to solar. I do have a little bit of propane 24 occasionally as backup if necessary. 25 But I -- my point is we live in probably one
2656 1 New Mexico -- in terms of our ecosystems, given who we 2 are and what we are, the high desert, with large skies, 3 with big skies and -- and wind potential and solar 4 potential, we need to be leaders in solar and wind 5 energy, in clean energy. We need to be leaders, and we 6 need to emphasize ecotourism through being -- through 7 having a leadership in solar and wind power. 8 It is unconscionable and unbelievable that a 9 state so beautiful, a state with so much tourism is 10 degrading the potential for good health in our children 11 and degrading the potential for ecotourism in this 12 state. 13 And anyway, I want to say that I love New 14 Mexico, and we need to love it to the point where we 15 protect it, we protect our air, our water, our skies, 16 our children and our adults. 17 So thank you. 18 HEARING OFFICER ORTH: Thank you, 19 Ms. Dicamillo. 20 I'm going to unmute Caller 27. 21 Caller 27, can you hear me? 22 MR. ANDERSON: Am I 27? 23 HEARING OFFICER ORTH: Yes, you are. 24 Who is this? 25 MR. ANDERSON: Okay. This is David Anderson.	2658 1 of the best states, like the last person said, in the 2 United States for solar. Arizona, Texas, New Mexico, 3 Colorado, we should be developing solar and wind, I 4 think, for the whole nation. And I also feel like that 5 if we put solar on every house and we -- and we push 6 that, we will get these emissions down fairly quick. 7 There has to be a way -- there has to be some 8 sort of catalyst, though, to get people to want to do 9 this. Now, I -- I chose to do this because -- actually, 10 I lived in Canada for about six years, and -- and my 11 stepson worked in the oil sand. It was probably the 12 worst place on the planet to live. He would come 13 back -- every time he would go there -- he was an 14 electrician -- he would come back, he'd have welts all 15 over his body. And these welts would stay on his skin 16 for up to two weeks before they would start to 17 dissipate. 18 This has to -- if anybody is exposed to these 19 type of toxins, and I think we are in New Mexico, if you 20 look at Artesia and some of the areas in Southern New 21 Mexico, Carlsbad, da-da-da, you're seeing this in the 22 air. And I went to Midland about two years ago, and I 23 was like, boy, the air is just -- it's like gray all the 24 time. Didn't used to be like that. 25 So it is getting worse. We do need to jump on

2659 1 this right away. I do think we're -- we're in a bad 2 situation right now. I know the United States is one of 3 the worst, but we've got other big company -- or 4 countries that are also really -- really bad. I don't 5 know what China is right now. I don't know if they're 6 number one or number two in the nation -- or in the 7 world as far as emissions, but I know they are pushing 8 solar big time now, solar and wind. 9 I think we need to -- like -- like Caller 26 10 said, we need to be the leaders. We -- we should be the 11 leaders. We can start here in New Mexico and expand out 12 if that's what it takes. I know we're up against a lot 13 of opposition with oil and gas, but that's actually -- 14 you know, that's going to -- that's going to go down and 15 down more and more, because oil and gas, as we know, is 16 a fossil fuel, we're not going to have it forever, and 17 it is very -- it's such a pollutant. 18 I believe BP, one of the largest producers of 19 oil and gas in the world, is also one of the -- has 20 started using solar and is one of the largest producers 21 in solar energy, as well. I could be wrong on that, and 22 you can correct me on that. But -- so somebody is 23 trying. 24 We just need to get these big oil companies to 25 start switching over, and I think with these bills being	2661 1 Sanders Moore. Here we go. 2 I've unmuted you. 3 Can you hear me? 4 MS. MOORE: I can. 5 Can you hear me now? 6 HEARING OFFICER ORTH: Yes. Thank you. 7 If you would please spell your name for the 8 transcript. 9 MS. MOORE: Yes. My name is Sanders Moore, 10 S-A-N-D-E-R-S M-O-O-R-E. 11 And I am just going to make a statement -- 12 HEARING OFFICER ORTH: Hold on. 13 MS. MOORE: -- on behalf of Senator Mimi 14 Stewart, which is M-I-M-I S-T-E-W-A-R-T. 15 HEARING OFFICER ORTH: All right. If you 16 would raise your right hand. 17 Do you swear or affirm to tell the truth? 18 MS. MOORE: Yes. 19 HEARING OFFICER ORTH: Thank you. 20 SANDERS MOORE 21 having been first duly sworn or affirmed, gave 22 public comment as follows: 23 PUBLIC COMMENT 24 HEARING OFFICER ORTH: I'll start your five 25 minutes now.
2660 1 passed, that's the best way to do it. I just hope it 2 passes. And I'm not sure we're going to get all of it 3 done at one time, and maybe we ought to rethink this if 4 we don't get it done at one time, maybe we should 5 rethink it and try to do it in chunks, so we get it all 6 done. But we definitely have to do it. 7 And I am very concerned about our kids. I'm 8 very concerned about my grandkids. I've got four 9 granddaughters that live in Denver, Colorado. I'm very 10 concerned about them, very concerned about their 11 environment as they grow older. I'm very concerned 12 about the animals and -- and the rest of the humans. 13 I -- my next step is an electric car. My 14 house is electrified. I'm all electric now and all 15 solar, and now I'm going towards a car. And I think 16 that's what we need to do, is start little steps, start 17 moving that direction. 18 I think that's all my time. 19 HEARING OFFICER ORTH: All right. Thank you 20 very much, Mr. Anderson. 21 All right. Let me go back to Caller 25. 22 Is this you, Ms. Perkins? 23 Caller 25. 24 All right. That is not working. 25 All right. I believe, then, finally, we go to	2662 1 MS. MOORE: Thank you. 2 Good afternoon, Board Members. 3 I am Sanders Moore, Senate President Pro 4 Tempore, Mimi Stewart's Chief of Staff. She sends her 5 regrets that she's unable to join you today herself. 6 And I will read a statement on her behalf. 7 Thank you, Board Members, for your time and 8 attention to this serious and important issue. Ozone 9 has a huge impact on our climate and our health and is a 10 major pollutant created by oil and gas operations, 11 putting everyone's health at risk, especially children, 12 elderly and frontline communities, which are 13 disproportionately rural, low-income and communities of 14 color. 15 Governor Lujan Grisham has been a leader in 16 addressing climate change and pollution in New Mexico. 17 She signed an executive order during her first month in 18 office laying out her climate priorities in action 19 during her tenure, including addressing the very high 20 levels of methane we emit in New Mexico, of which ozone 21 is a by-product. 22 I am pleased to see these rules moving 23 forward. New Mexico should be at the forefront of 24 addressing climate change and by extension mitigating 25 the adverse health impacts caused by ozone pollution.

2663 1 Thank you for the strong draft rule that you 2 issued this spring. I encourage the EIB to support 3 three important improvements for the final rule. 4 First, to require more frequent inspections to 5 find and fix leaks at well sites close to schools and 6 homes. 7 Second, require companies to control pollution 8 during well completions. 9 And finally, to strengthen the requirements to 10 reduce pollution from pneumatic controllers. 11 Thank you for your time and consideration. 12 And then if it's all right, I'd like to just 13 make a couple comments myself, speaking on behalf of 14 myself as Sanders Moore. 15 I'm a mother of a toddler, and I am personally 16 very concerned about the fate of our planet and our 17 pollution. I watch the air quality on an app on my 18 phone fairly regularly to determine whether I should 19 take my child to the playground, and I don't take her 20 outside when the ozone and other pollutants are high 21 because I don't want it to cause long-term health 22 impacts for my daughter. 23 Living in Albuquerque, I have the luxury to 24 check that and to stay inside when it is unsafe for her 25 little lungs, but people living in frontline communities	2665 1 JOHN R. SMITHERMAN 2 (Relating to Topic Order 27) 3 having been first duly sworn or affirmed, was 4 examined and testified further as follows: 5 DIRECT EXAMINATION (Continued) 6 BY MR. HISER: 7 Q. Mr. Smitherman, please proceed with your 8 surrebuttal and -- but when we hit slide 10, make sure 9 that you don't address that, let me speak to that. 10 A. Be happy to do so. 11 Am I sharing my slide properly? 12 Q. It is in still what is normal view instead of 13 presentation view. 14 A. You know, I think I'm going to have to leave 15 it there. 16 Q. Okay. 17 A. It does some funny things when I don't. 18 Q. And you're -- 19 THE REPORTER: Excuse me. 20 Q. (BY MR. HISER) -- also getting faint again 21 for the court reporter. So if maybe you could move 22 forward toward your speaker. 23 A. Certainly. 24 Let's go ahead and start, shall we? 25 Part of my surrebuttal is going to be
2664 1 do not have that luxury. They are breathing the bad air 2 quality regularly. And these communities have paid the 3 price with their health for decades. We need to protect 4 these families and ensure that all -- health for all New 5 Mexicans and globally is protected from ozone pollution. 6 So I also encourage you to make those 7 important changes that the senator is also encouraging. 8 Thank you very much. 9 HEARING OFFICER ORTH: Thank you very much, 10 Ms. Moore. 11 All right. We have reached the end of the 12 public comment session for this evening. We will return 13 to the technical case. 14 If we could get Mr. Smitherman back. 15 Mr. Hiser. Let's see here. 16 MR. HISER: I see Mr. Smitherman, as well. 17 HEARING OFFICER ORTH: All right. Great. 18 Please go ahead. 19 20 21 22 23 24 25	2666 1 responding to some comments and criticisms that NMED 2 made. They believe that NMOGA's analysis lacks 3 specificity. Also, NMED has challenged some of the 4 bases of our analysis, and I will try to address those 5 for the Board's edification. And I'm going to start 6 with well sites, if I could, please. 7 We -- we believe that ERG's analysis is 8 flawed. Emissions reductions in their analysis are 9 overestimated, mostly because their model plant is 10 flawed. I've talked a little bit about that in my 11 introduction. The major equipment counts are high, 12 hence the component counts are high, hence the emissions 13 are high. 14 Q. Okay. Mr. Smitherman? 15 A. Yes. 16 Q. You're fading out on us. 17 A. Oops. I'm sorry. 18 Maybe I can turn my video off? Think that 19 would help? 20 Q. That might. 21 A. Let me stop sharing just for a moment and see 22 if I can figure this out. 23 Is that any better? 24 Q. A little bit. You're just going to have to 25 make sure you speak up, and we may ask you periodically

2667 1 to speak up again. 2 A. Okay. 3 ERG's analysis is flawed for a couple of 4 reasons. The emissions reductions are overestimated, 5 mostly because of the model plant flaws that I've just 6 discussed. The leak frequency is also flawed. And the 7 costs are underestimated. So the combination of those 8 two results in results that are not reliable. 9 Let's talk about the emissions reductions. 10 Specific critique was that NMED cannot evaluate the 11 validity or representativeness of the alternate model 12 plants mentioned by NMOGA because NMOGA does not 13 document in its testimony or exhibits the actual model 14 plants they created and on which they estimated new 15 emission reductions and cost effectiveness numbers. 16 Our response, and again I'm -- pardon me for 17 having to read this, but the comments were very 18 specific, and I want to make sure that I've gotten them 19 correct. 20 NMOGA did provide the Greenhouse Gas Reporting 21 Program file, Exhibit 27, that was used to construct the 22 more current and representative model plants. The data 23 is also publicly available. In my surrebuttal I will -- 24 NMOGA will provide additional information on those model 25 plants, although I think we'll skip that.	2669 1 HEARING OFFICER ORTH: Thank you. 2 MR. HISER: Okay. 3 Mr. Smitherman, you can advance to slide 4 number 11, which is also one of the ones that we are 5 doing a proffer on. 6 So this is the example of if you apply that 7 calculation to the well site side. This -- unlike the 8 first slide, slide 10, which was gas facilities, this 9 one presents the same information -- I'm sorry. 10 John, you're moving all around on me. 11 MR. SMITHERMAN: Sorry. 12 MR. HISER: We're now back on slide 11. 13 So this presents the information for oil 14 wells, and it had it divided into the two categories 15 that were used of less than 300 gas-to-oil ratio and 16 over 300 gas-to-oil ratio. 17 Once again he would have testified that they 18 took the number from the Greenhouse Gas Reporting 19 Program, divided that by the number of wells, divided by 20 number 2, to come up with the site, use the ERG data 21 from the CTG for the average component count, to then 22 calculate a new average component count for the model 23 plant site. 24 HEARING OFFICER ORTH: Okay. Thank you. 25 MR. HISER: That completes the proffer on this
2668 1 What is a model plant? We've talked about 2 this in my introduction. It's a statistically average 3 facility, average number of equipment counts, average 4 number of components per equipment, and results in an 5 average number of components per site. 6 ERG's model plant used 1996 data from the CTG. 7 Some of that data was not specific to New Mexico. In 8 fact, some of it was not even specific to upstream oil 9 and gas sector. NMOGA's model plant used recent 2019 10 greenhouse gas reporting data specific to the San Juan 11 and Permian Basins. 12 Q. All right. Mr. Smitherman, this is slide 10. 13 So, Madam Hearing Officer, at this point, as 14 discussed, NMOGA would be making a proffer. 15 And so I would state that if Mr. Smitherman 16 were to testify he would state that this shows how NMOGA 17 developed the number of model plant equipment counts 18 from the greenhouse gas data, by dividing that by the 19 number of wells as explained in his testimony, then used 20 the average component count per equipment, which is the 21 same as the ERG data -- that's that middle section -- to 22 calculate a new average component count per model plant, 23 which you see on the right-hand side. And that would 24 then be used in the basis for calculating the emissions 25 changes from the leak reduction frequencies.	2670 1 slide, Madam Hearing Officer. 2 Q. Now, go ahead, John, to slide number 12, and I 3 think you may resume on this one. 4 A. Thank you, sir. 5 This is the ERG model plant that they used as 6 the basis of their calculation. 7 As you can see here, there's a certain number 8 of equipment counts for each of the different equipment 9 types. They have components -- average numbers of 10 components that are associated with each one of those. 11 Here, for example, 21.6 valves associated with a 12 separator. And you multiply those two together to get 13 the average component count for each of those equipment 14 types, for each of those component types. And you get a 15 total of all of the components that are at that site 16 that have the potential to leak. 17 Q. And so if I could interrupt you there. 18 So basically, you take the second column, the 19 model plant equipment count, and then you multiply that 20 in this case by the third column, the average valves, 21 and then you go to the component count per model plant, 22 and that 19 is the 2 times the 9.5; is that correct? 23 A. That's correct. 24 Q. And then 2 times 37 to get the 74, and that's 25 how you're constructing this table.

2671 1 A. That's correct. And the result is a total 2 number of components that you see here, and, you know, 3 our numbers would have been lower than that because of 4 the most recent greenhouse gas reporting data equipment 5 counts. 6 We also have ERG's model plant for oil well 7 sites, both sites with a lower GOR than 300 and a GOR 8 equal to or greater than 300. Same process, equipment 9 counts here, the number of components per equipment -- 10 or -- excuse me -- the average number of those equipment 11 types, components total here. So again you end up with 12 a total number of components at the site -- at an oil 13 well site greater than and equal 300. Our numbers would 14 have been similarly constructed, but would have resulted 15 in lower numbers. 16 Q. And, John, before you move on from this slide, 17 could you remind the Board what GOR means and why that's 18 important? 19 A. Oh, thank you. Gas-oil ratio. It really 20 distinguishes between oil wells that don't produce a lot 21 of associated gas and oil wells that produce quite a bit 22 of associated gas. Many of your -- I want to call them 23 older water flood, older conventional oil wells produced 24 little gas as associated with each barrel of oil, and 25 the number is 300 standard cubic feet of gas per barrel	2673 1 at all, but that the gain seems to go down as we 2 increase the frequency? 3 A. It does. In fact, as you can see 4 specifically, the gains between quarterly and monthly 5 are relatively small. When you go from annual, you 6 know, every 12 months, to every six months, then you get 7 a 20 percent increase. You go from six months to four 8 months, you get 20 percent reduction, additional 9 20 percent reduction. So you can see that there's a 10 diminishing return. 11 Q. Thank you. 12 A. So when you tabulate the emission reductions 13 at these model plants, you get these results. Here is 14 the CTG basis that ERG came up with for their gas well 15 sites. They perform -- if you perform annual LDAR, you 16 get a .61 ton per year VOC reduction on a gas well site. 17 If you perform semiannual, you'll get a .917, and if you 18 do quarterly, a 1.222 ton per year VOC reduction. Using 19 our model plant, those reductions -- since the emissions 20 are smaller, the reductions are also smaller. It runs 21 from .509 tons per year down to 1.018 tons per year. 22 And I've got the little tabulation to 23 illustrate the percentage reduction between ERG's data 24 and NMOGA's data. For gas well sites it's a 25 16.7 percent reduction, for low GOR sites it's a
2672 1 of oil. 2 Q. Thank you for that -- 3 A. These wells in unconventional tend to be 4 higher than 300 GOR. 5 Q. Sorry. I didn't mean to speak over you. 6 Thank you for that clarification of the term 7 "GOR." 8 Please proceed. 9 A. As I mentioned in my opening, there is a table 10 that's been established by the EPA that, in essence, 11 gives you the amount of emissions reduction that you're 12 going to get with differing -- differing LDAR 13 frequencies. If you do annual LDAR surveys, you will 14 get a 40 percent reduction in your model plant's 15 emission. It's a straight calculation. And if you did 16 semiannual, you'll get 60 percent reduction, quarterly 17 80 percent, monthly 90 percent. 18 There are some slight differences between 19 whether you use an OGI or Method 21, but, in essence, 20 this has been simplified to give you the numbers that we 21 used in our calculations. 22 Q. And, John, before you move from that slide, 23 can you go back for a minute? 24 Was one of the points that was important to 25 NMOGA was that there was a large gain from starting LDAR	2674 1 27.9 percent reduction, and for those oil well sites 2 with equal to or greater than 300 GOR almost 60 percent 3 reduction. I gave you a sample calculation here. I 4 won't go through that. It's pretty straightforward. 5 Q. And just as a reminder, John, is that due 6 principally to the difference in the component count 7 between the CTG and the greenhouse gas reporting? 8 A. That's actually the only difference. 9 So once you then couple that with costs to put 10 it on a cost per ton basis -- and by the way, we used 11 the same cost basis that the Department used, the CTG 12 basis, and applied it to our model plant emissions 13 reduction. So the only difference here is the emissions 14 reduction that comes from the model plant equipment 15 counts. 16 As you can see, the lower emission impact 17 yields higher per ton costs. And those get higher and 18 higher depending on whether you're in a gas well site or 19 one of the lower or higher GOR oil well sites. 20 Again looking at the percentage change, gas 21 well sites are almost 20 percent higher, low GOR oil 22 sites are almost 40 percent higher, and high GOR well 23 sites are almost 150 percent higher. And again a sample 24 calculation for your edification. 25 Now, we believe that the leak frequency that

2675 1 ERG used -- and we actually used the same numbers -- has 2 been overestimated. So we looked into that as a 3 sensitivity to at least have the Board understand that 4 had they used -- had we used a higher leak -- or lower 5 leak frequency our numbers would have been, in essence, 6 worse. They would have been higher. So we're being 7 conservative by using CTG leak frequency data when 8 there's data that indicates that we could have used 9 probably better data. 10 The ERG EPA data found that sites start off 11 with about four leaks per site initially, and in all of 12 these studies, these leak frequencies tend to go down 13 over time, as LDAR is -- continues to be instigated. 14 API study based on two years of quarterly LDAR 15 at over 6,000 sites -- or -- excuse me -- surveys across 16 almost 3,500 sites found that they start off with less 17 than two leaks per site. It was about 1.6 actually. 18 And it dropped quickly to less than one leak per site 19 over time. So we believe that ERG data overstates the 20 leak rate, therefore overstates the emissions. We did 21 this as a sensitivity. We did not include this in our 22 calculations. 23 I'm going to pause and go to a specific NMED 24 rebuttal. The leak frequencies API generated from the 25 Quad 0a report is not representative of New Mexico since	2677 1 component are higher overall than those underpinning the 2 2016 CTG. 3 I'm going to move on. 4 Q. Okay. 5 A. Costs are underestimated at well sites, also. 6 Again as a sensitivity, NMOGA looked into the validity 7 of the costs that ERG used, and we used, to underpin 8 their costs per ton in their emission reduction costs. 9 We again used the CT -- same CTG data that they did, but 10 we did this as a sensitivity. 11 And API commented, as you've heard earlier 12 from other witnesses, on the 2016 CTG and believed that 13 the costs were underestimated for the conducting of the 14 leak surveys, completing the repairs, maintaining 15 records. Also, they completely omitted costs for 16 personnel training, travel time and costs and equipment 17 maintenance. 18 So we believe that these costs that ERG used 19 are too low. We used them also, but we're also pointing 20 out that had we used these higher cost numbers, then the 21 resulting costs per ton would have been much higher. It 22 again points to the fact that our numbers are 23 conservative. 24 Again a specific comment, EPA fully responded 25 to API's comments in their responses to comments and it
2676 1 the facilities being surveyed are the new and modified 2 facilities subject to the LDAR requirements in Quad 0a, 3 and they're not representative of the older facilities 4 and sites in New Mexico. 5 And while we agree that the facilities in 6 API's frequency analysis are newer than many of the New 7 Mexico facilities, they are no less representative than 8 leak frequencies developed decades ago that were based 9 on even older data and included industries besides oil 10 and gas segments. 11 So again we looked at the leak frequencies, we 12 recognize that there's a real possibility that the ERG 13 leak frequencies that they used are too high, and we 14 used are too high, but that basically says that our 15 numbers are conservative. 16 Again a specific comment, NMOGA does not 17 provide a detailed comparison of the results of the 18 study to the frequency or emission rates that were the 19 basis of the 2016 CTG estimates of cost effectiveness. 20 We did provide study papers and supplemental 21 information in our Exhibits 5 and 14 that compare the 22 various other leak frequencies and emission rates that 23 are discussed. Some of those are the 2016 leak -- CTG 24 leak frequency of about 1.18, API at .42 of components 25 leaking. The API's leak study rates per leaking	2678 1 is beyond the scope of this rulemaking for NMED to 2 revisit the issue. You heard that earlier today. 3 NMOGA included the API costs as a sensitivity 4 and did not use it in our actual calculations. We 5 included it to illustrate that the impacts of costs per 6 LDAR survey and the costs per ton of reductions are -- 7 are low, and costs do matter. 8 NMOGA does believe that costs are 9 underestimated in this rulemaking and that the agency 10 undertaking the rulemaking has the obligation to gather 11 and use the most current and accurate information 12 available in their analysis, costs and other data. 13 NMOGA will be -- NMOGA would be happy to assist NMED in 14 gathering current cost information from New Mexico 15 operators which would be representative of the actual 16 costs of operations and challenges. 17 Let's move to gathering and boosting stations. 18 Again emissions are overestimated at gathering 19 and boosting stations, using their model plant. It's 20 again based on 1996 EPA data, it's an EPA GRI study, and 21 it's not representative of current populations of 22 gathering and boosting stations in New Mexico. 23 NMOGA's model plant was based on a Colorado 24 State University/Department of Energy 2019 major study 25 that yielded fewer equipment counts, fewer components

2679 1 and lower potential leak emissions than ERG used. 2 And now, Mr. Hiser? 3 MR. HISER: So, Madam Hearing Officer, this is 4 another proffer slide. 5 If Mr. Smitherman were to testify on this 6 slide, he would explain how NMOGA looked at the CSU 7 report and from certain tables in that report selected 8 the number of pieces of equipment in the model plant -- 9 you see sort of in the second column -- and then from 10 different tables collected the average component count 11 per equipment, and then multiplied those to calculate 12 the average component count for the model plant. Very 13 similar to what we saw for the well sites in the earlier 14 stages. 15 And that would complete NMOGA's proffer on 16 this point. 17 HEARING OFFICER ORTH: Thank you. 18 MR. SMITHERMAN: So my next slide is the model 19 plant that ERG used on gathering and boosting stations. 20 Once again similar type of structure where you've got 21 your equipment counts, you've got your average component 22 per equipment, which yields the average component count 23 per model plant for each of these different component 24 types. And you sum them at the bottom. 25 Our numbers would have been similar in their	2681 1 A. Thank you. That's an excellent question. 2 The reason is we have data from the San Juan 3 Basin -- from the San Juan Basin Greenhouse Gas 4 Reporting Program, and we have specific data from the 5 Permian Basin from that same source. ERG only has the 6 CTG information which does not differentiate between 7 those two basins. 8 So again showing you the numbers, San Juan 9 Basin 82 percent lower, Permian sites 55.6 percent 10 lower. Again another sample calculation for your 11 edification. 12 Once again a specific comment, NMOGA fails to 13 note the findings of the study that, quote, unquote, the 14 study indicates that study emission factors either agree 15 with or are larger than current Greenhouse Gas Reporting 16 Program emission factors for the Western US, unquote. 17 The NMED analysis also does not take into account the 18 estimated leak rates in standard cubic feet per hour 19 including the presence of large emitters relative to 20 those that were the basis of the 2016 CTG estimates. 21 Q. Mr. Smitherman, let me stop you there. 22 In the second sentence you said the NMED 23 analysis. 24 Did you mean the NMOGA analysis? 25 A. Excuse me. I misspoke. The NMOGA analysis.
2680 1 structure, but the numbers would have been lower than 2 these. 3 Similarly, we have used their model plant and 4 our model plant to calculate estimated emissions 5 reductions. 6 Now, here is the slide, Mr. Hiser, that has a 7 small error in it, and it's a consistent error, and we 8 had a -- just basically used a wrong cell reference in a 9 spreadsheet. And basically, every one of these eight 10 numbers here are 6.5 percent too -- too low. The 11 numbers that we are showing you are -- let me get this 12 right -- lower than the numbers that we had in our 13 original testimony by 6.5 -- 14 Q. (BY MR. HISER) These numbers have come down 15 by 6.5 percent from what was presented in your original 16 testimony; is that correct? 17 A. That's correct. That is correct. 18 So the numbers here, as you can see, the tons 19 per year reduced are quite different between ERG 20 estimates and the Permian -- and the NMOGA estimates. 21 Q. So, Mr. Smitherman, can you explain why in the 22 previous times that we were talking about this we didn't 23 have a differentiation between basins, and now suddenly 24 when we get to gathering and boosting there is a 25 differentiation?	2682 1 This is a comment from NMED, commenting on NMOGA's 2 analysis. Thank you. 3 Our response is the NMOGA used the emission 4 factors -- you'll see them in Table 4 of our 5 Exhibit 28 -- developed by the study authors to 6 calculate potential equipment leak emissions and the 7 frequency dependent reduction percentages used by 8 ERG/NMED in our analysis. Since NMOGA used emissions 9 factors developed from the study, that's from the 10 Colorado State University/DOE study, measurements and 11 these emission factors incorporate the study 12 measurements, including large emitters, the division's 13 comments are simply not correct. 14 Again a specific criticism, NMOGA does not 15 provide any details regarding how the results of the 16 second paper -- that's the Colorado State/DOE study -- 17 were used to adjust the VOC reduction estimates from 18 those in the 2016 CTG to those in NMOGA's testimony or 19 how they were used to adjust the cost per ton of VOC 20 reduced. 21 NMOGA did supply the Colorado State 22 University/DOE study, part of our NMOGA Exhibits 28 and 23 7, and we responded to those materials -- excuse me -- 24 NMED responded to those materials, and clearly they had 25 access.

2683 1 Some of the details of how NMOGA used the 2 Colorado State University/Department of Energy study to 3 construct a more current model plant for gathering and 4 boosting facilities and then to calculate potential 5 emissions, frequency dependent reductions and costs per 6 ton of reductions. 7 One, NMOGA used the major equipment per 8 gathering and boosting station that you'll find in Table 9 6, NMOGA Exhibit 28, to establish the count of major 10 equipment types per station. 11 Two, NMOGA used the component counts per piece 12 of major equipment -- those are Tables S3 through 30 13 through S3 -- excuse me -- S3-30 through S3-35 in the 14 Colorado State/Department of Energy gathering and 15 boosting station study supplemental information, Volume 16 3, which you find in our NMOGA Exhibit 7 -- multiplied 17 by the count of major equipment to calculate the number 18 of components per station. 19 Continuing, that same comment, NMOGA then 20 multiplied the components count by the study-derived 21 emission factors, which you'll find in Table 4 in 22 NMOGA's Exhibit 28, to calculate the standard cubic feet 23 of emissions per model study. 24 Then NMOGA divided the emissions by 1,000 to 25 convert them to Mcf, and then multiplied the results by	2685 1 and NMED in their analysis of the rule impacts, NMOGA 2 does not think considering the minimally lower costs 3 associated with less components and less leaks is 4 particularly relevant to the cost per ton of reduction. 5 Our response, as the division knows, major 6 parts of the cost per survey are buying the camera and 7 support equipment, training personnel, traveling to and 8 from the sites -- excuse me -- especially remote sites 9 in New Mexico, firing up and checking the equipment, 10 conducting the survey itself, documenting the survey 11 results in a database, creating work orders for repairs, 12 obtaining parts, planning for personnel for repairs, 13 traveling to and from sites for repairs, making the 14 repairs, and documenting the repairs in a database. 15 There's lots and lots of steps that are associated with 16 that. 17 So only part of the costs per survey that vary 18 with the number of components per site in the -- is in 19 the survey time, and cost per survey is not particularly 20 sensitive to the difference in survey time given the 21 other cost drivers and the fact that gathering and 22 boosting station is still complex and takes about the 23 same time to survey. 24 The only parts of the cost per survey that 25 vary with the number of leaks are obtaining the parts
2684 1 the pound of VOCs per Mcf, as I did -- as I explained 2 earlier, you basically take whole gas and reduce it to 3 the amount of VOCs specifically in the San Juan Basin 4 and the Permian basins respectively, to arrive at the 5 mass of emissions -- VOC emissions per station. 6 Note that the result is based on actual New 7 Mexico data and is certainly more representative than 8 the outdated and nonrepresentative information used by 9 ERG. 10 The mass of emissions per station, which 11 represents potential equipment leak emissions, was then 12 multiplied by the same reduction factors that ERG used 13 for the different LDAR survey frequencies to calculate 14 the reductions per station. And as I've already 15 mentioned, 40 percent, 60 percent and 80 percent 16 reductions, depending on the frequency. 17 We did create a 90 percent reduction monthly 18 surveys. It's a little wonky. I won't go through the 19 details of that. 20 NMOGA then used the ERG and the NMED costs for 21 a different leak survey -- excuse me -- for the 22 different leak survey frequencies to calculate the per 23 ton cost of reductions. 24 A different criticism or comment from NMED, 25 given the uncertainty regarding the costs used by ERG	2686 1 for repair and making the actual repairs. Although 2 fewer leaks will require fewer repairs, the cost 3 differential is not that great. Also, as the division 4 knows, as the frequency of survey increases, the number 5 of leaks per survey goes down, and the proportion of the 6 survey cost attributable to repairs also decreases to a 7 point that the differential costs for fixing one leak 8 versus three is really not that relevant. 9 Q. And so as part of the comment here, John, 10 really by the time you get to a gathering and boosting 11 station, they are much more complex than a typical well 12 site would be, so there's more components, and you're 13 going to have to spend a certain amount of time at that 14 facility sort of regardless? 15 A. Exactly. And the cost driver really is the 16 survey itself. The repairs are a small part of the cost 17 that is included in our cost estimate, but it's mostly 18 the cost of the survey. 19 So when you take those costs and you apply 20 them to the VOC reductions, you get this table here. 21 Again we had a small change, 6.5 percent change in the 22 numbers that cascade to these, as well. So these are 23 the corrected numbers. And again you have San Juan base 24 numbers and Permian Basin base numbers relative to the 25 one single number set for New Mexico from the CTG.

2687 1 Once again I show you that the San Juan 2 sites -- excuse me -- San Juan Basin sites are 3 460 percent higher, Permian Basin sites 125 percent 4 higher. So the ERG's ton -- dollar per ton estimates 5 understate the New Mexico actuals. And again once more 6 a sample calculation. 7 Q. So, John, maybe you could go back for a second 8 to your prior slide. 9 Does this slide sort of show for you one of 10 New Mexico -- NMOGA's concerns about moving to the 11 monthly frequency compared to the other frequencies that 12 are under discussion? 13 A. It does. As you can see, the costs per ton as 14 frequency goes up do go up, but it's a big difference 15 going from quarterly to monthly. And that happens for 16 whatever reason that you're changing that frequency from 17 semiannual or quarterly to monthly. The fact that 18 you're going from quarterly four times a year to monthly 19 12 times a year is a big, big jump, and it causes the 20 cost per ton to go up markedly. 21 Q. Okay. Thank you, John. 22 Please continue. 23 A. So as I said in my opening, there's lots of 24 numbers here that talk about the actual costs per ton 25 for performing LDAR. We've gone through a lot of those	2689 1 analysis? 2 More frequent LDAR surveys cost more money, as 3 I said, mostly scaleable, slightly less than scaleable 4 due to fewer leaks discovered in repair. Emission 5 reductions are a little lower with more frequent LDARs. 6 So higher costs for lower emissions reduction yields a 7 cost-to-benefit ratio that's higher, some of them very 8 high. 9 Let's take a look on well sites. This is 10 using the ERG costs and the NMOGA well plant -- pardon 11 me -- model plant for well sites emissions reductions. 12 Cost per ton, we go from annual to semiannual on well 13 sites -- natural gas well sites, low GOR well sites and 14 high GOR well sites, are from \$3,900 to \$21,000 per ton. 15 If you go from annual to quarterly in those same well 16 sites, \$5,900 to \$31,000. And when you look at 17 semiannual to quarterly, you go from almost \$8,000 to 18 over \$42,000 per ton. And that's on well sites. 19 When you go to gathering and boosting 20 stations, gas plants and transmission compressor 21 stations, our recommendation is that anything with under 22 25 tons per year is semiannually and anything equal to 23 or greater than 25 tons per year is quarterly. NMED has 24 started off at less than 25 tons per year quarterly and 25 as for monthly an LDAR on anything -- any of these sites
2688 1 so far. The main -- the most germane calculation is 2 looking at what's the incremental benefit and what's the 3 incremental cost to go from one frequency to another. 4 As I said at the outset, NMOGA supports LDAR, 5 but at frequencies that are reasonable. Additional LDAR 6 survey costs are basically scaleable. I just mentioned 7 that, that most of the costs are basically conducting 8 the survey itself. So it's not the repair costs that 9 are -- that are driving the total costs. It's simply 10 performing the surveys. 11 More frequent LDAR surveys also result in 12 lower per survey emission reduction. That's that 13 diminishing returns I mentioned before. You combine 14 those two concepts, and incremental dollar per ton moves 15 to unreasonable levels. 16 Here's a comparison of the proposals now. 17 NMOGA is recommending that for well sites annual LDAR 18 for every site that has a PTE less than 10 tons per 19 year, semiannual equal to 10, less than 25 tons per 20 year, and quarterly for any sites equal to 25 tons per 21 year or more. NMED has now come back to less than two 22 tons a year for annual, between two and less than five 23 for semiannual, and greater than five -- five or 24 greater, I should say, to be quarterly. 25 So how do you -- how do you do an incremental	2690 1 that is 25 tons per year or more. That results in some 2 very, very large incremental costs. 3 When you go from semiannual to quarterly, our 4 costs indicate that the incremental cost per ton in the 5 San Juan Basin is \$34,000 per ton. When you go to 6 quarterly -- excuse me. When you go from quarterly to 7 monthly, look at what the numbers do. \$300,000 per ton 8 incrementally to go from quarterly to monthly. 9 That's what happens when you basically, in one 10 sense, don't look at the incremental costs that we're 11 asking the industry to -- to bear, to perform more 12 frequent LDARs. 13 One more comment that NMED had expressed, they 14 expressed concern that tying LDAR requirements to the 15 NSPS programs may be inadequate because the federal 16 requirements can be changed or rescinded. And NMOGA 17 suggests that NMED adopt the federal requirements of a 18 certain date to freeze the requirements as desired. 19 And that's the end of my summary. 20 MR. HISER: And then so we do have a couple of 21 slides for a proffer at the end, Madam Hearing Officer. 22 These go to occupied area. On this slide 23 Mr. Smitherman would have testified that the Oxy/EDF 24 proposal would increase the number of frequencies and 25 that would -- is not necessary because large emitters

2691 1 are covered by AVOs and some of the other inspections, 2 and it also increases the cost. And that would be 3 NMOGA's proffer on this slide. 4 The next slide, which is slide, I believe, 53, 5 here he would have repeated the general concern is that 6 the cost to -- is the surveys and this can cause a large 7 incremental cost increase. Even a representative would 8 have ranged from in the range of 18,000 to 68 -- 69,000, 9 if he had testified on this. And that would be NMOGA's 10 proffer on this slide. 11 And then on this slide he would have presented 12 those same costs basically in a tabular form just to 13 show them as they relate to the differences between well 14 sites which have a lower cost versus certain types of 15 oil and gas sites -- or oil sites that have a much 16 higher cost than the potentially nearly \$99,000 cost. 17 That would have been his proffer on this slide. 18 On this slide he would have done the same 19 thing with this case showing going from semiannual to 20 monthly, showing the incremental VOC reductions, and 21 then showing that the costs range from 28,000 to about 22 150,000. And that would have been his proffer -- or his 23 testimony on this slide. 24 I think there's one more. 25 And the last one, he would have gone from	2693 1 Mr. Smitherman? 2 And could we take just a very short break 3 before we do that? 4 MR. HISER: Yes. That would be fine, Madam 5 Hearing Officer. 6 HEARING OFFICER ORTH: All right. Let's just 7 take nine minutes, come back at 6:10. Thank you. 8 (Proceedings in recess from 6:01 p.m. to 9 6:10 p.m.) 10 HEARING OFFICER ORTH: Let's come back from 11 the break, please. 12 Let's see. Let's get Mr. Smitherman back on 13 the screen. 14 I see Mr. Hiser. 15 MR. HISER: I believe we've completed what 16 Mr. Smitherman wanted to say at least at this point in 17 time, and so I would turn him over to the other parties 18 for their questions. 19 HEARING OFFICER ORTH: Yes. Thank you. 20 Mr. Smitherman? 21 MR. HISER: He's back. 22 HEARING OFFICER ORTH: All right. Thank you 23 very much. 24 Let's see. I see Ms. Fox on the screen. 25
2692 1 quarterly to monthly, once again discussing the well 2 sites and the two different types of oil sites. They're 3 showing the incremental VOC reductions and then 4 calculating what that would be in incremental ranging 5 from 68,000 to greater than 350,000. And that would 6 have been his testimony on that. 7 And that completes NMOGA's proffer on 8 Mr. Smitherman's slides here. 9 In addition, we had offered two spreadsheets, 10 and those spreadsheets basically contain the underlying 11 data that were used to calculate the numbers that were 12 presented in these tables. And we put them together 13 just so that it was easier for the Board should they be 14 admitted to understand the calculations. 15 And that will complete NMOGA's proffer for 16 that. One of those would be on the well sites, and then 17 the second one would be on the gathering and boosting 18 sites. So one, wells, second, gathering and boosting, 19 because they have different data sources. 20 HEARING OFFICER ORTH: Thank you very much, 21 Mr. -- 22 MR. HISER: That's my proffer. 23 HEARING OFFICER ORTH: All right. Thank you, 24 Mr. Hiser. 25 Are we ready then to go to questioning for	2694 1 CROSS-EXAMINATION 2 BY MS. FOX: 3 Q. Good evening, Mr. Smitherman. 4 A. Good evening. 5 Q. I just have a question, and that is who and 6 which company developed the data that you referred to in 7 your presentation on the plant models, the estimated 8 emissions reductions and the estimated costs? 9 A. Okay. There's a lot of information. Some of 10 that was -- all of it was done under my supervision and 11 my request. Some of it was done by the Earth Science -- 12 Earth System Sciences. Some was done collaboratively 13 with me. And some -- 14 Q. With who? 15 A. With me. Some was collaborative with me. 16 And some of it I did myself. 17 Q. And I'm not going to belabor this, but 18 generally speaking, who generated the model plant 19 information? 20 A. That was Mr. Reid Smith of Earth System 21 Sciences -- or Science Systems, I think. 22 Q. And what about the estimated emissions 23 reductions? 24 A. We collaborated on those. 25 Q. Who?

2695 1 A. I'm sorry. I collaborated with Mr. Reid Smith 2 on those. 3 Q. Anybody else? 4 A. Not that I know of. 5 Q. And what about the estimated costs? 6 A. Well, those came from the CTG. So in essence, 7 it came right out of ERG's data. 8 Q. You didn't generate any of those numbers for 9 your estimated costs? 10 A. Well, as I said, the estimated costs came from 11 the CTG, information which ERG used. The tables that I 12 showed in my slides I generated. 13 MS. FOX: That's what I wanted to know. 14 Thank you so much. 15 That's all I have. 16 HEARING OFFICER ORTH: Thank you. Thank you, 17 Ms. Fox. 18 Is there another party who would like to ask 19 questions of Mr. Smitherman? 20 No. I don't see anyone else turning on their 21 camera. 22 I'll turn now to the Board for their 23 questions. 24 While I'm doing that, if you're on the 25 platform as an attendee and would have a question,	2697 1 sites, and you've got maybe 3.2 separators, you've got 2 maybe .5 compressors. That's what you end up with, is 3 an average number of component -- of equipment types per 4 site. 5 Same thing for the gathering and boosting 6 stations. You create an average gathering and boosting 7 station. 8 VICE-CHAIR TRUJILLO DAVIS: Okay. That is 9 super helpful. 10 And then that model plant is what was -- is 11 the basis for Section 116; is that correct? 12 MR. SMITHERMAN: What you do -- use the model 13 plant for is you take that model plant, which, in 14 essence, you end up with the total number of components 15 that could leak at the average site, you multiply that 16 times the leak rate for each one of those component 17 types, and you add all that up, and you get the average 18 leak rate of gas out of the average site. 19 And then, of course, you convert that to VOCs, 20 because all gas is not VOC, and that ends up with the 21 average emissions of VOC for the average site. 22 VICE-CHAIR TRUJILLO DAVIS: Okay. So your 23 contention was that NMED used data from 1996 and NMOGA 24 was using data from 2019. 25 MR. SMITHERMAN: That's correct. And specific
2696 1 please reach out in the chat. 2 EXAMINATION 3 BY THE BOARD: 4 HEARING OFFICER ORTH: Madam Chair, do you 5 have questions of Mr. Smitherman? 6 CHAIR SUINA: No, I don't. Thank you. 7 HEARING OFFICER ORTH: Thank you. 8 Vice-Chair Trujillo Davis. 9 VICE-CHAIR TRUJILLO DAVIS: Yes. I've got a 10 couple of questions to clarify and make sure I 11 understood the data that you were presenting at the 12 beginning of your testimony. 13 But first, can you kind of explain or define 14 for me a model plant? 15 MR. SMITHERMAN: Excellent question. It took 16 me a while to figure out what that was. 17 It's an average facility. You've got a well 18 site -- and again here I'm using the well site just as 19 we are defining that term in Part 50. So it's a well 20 site would be all of the other equipment that would 21 normally be associated with that, separators, heater 22 treaters, all those things. It's an average well site. 23 In essence, you take all of the different well 24 sites that are out there, how many separators are on a 25 typical site, you take the total number, divide by the	2698 1 data from 2019 specific to San Juan Basin and specific 2 to the Permian Basin, and not only was the data that 3 he -- that the Department used was 1996 base survey, it 4 was not necessarily New Mexico base survey. 5 And think about this, too. You know, times 6 have changed. We recognize that these components can 7 leak. So wouldn't you think that engineers would start 8 trying to reduce the number of components that could 9 leak in their facility designs? And that's, why when 10 you look at the recent data, you see that those 11 component counts are down, and therefore the leak 12 potential is down. It just makes sense. 13 VICE-CHAIR TRUJILLO DAVIS: Well, yes. 14 Actually, that's what struck me about your testimony. 15 The -- just the difference in facilities that were built 16 in 1996 versus a facility even built in 2015 is 17 drastically different. The -- I remember back in 2012, 18 when we were going through the initial stages of the 19 greenhouse gas reporting, and there was a lot of work 20 being done on valves, and I actually made a joke at the 21 time that I should invest in valves, and I really should 22 have. 23 But I'm curious, if any of that -- if the 2019 24 data was -- any of that was based on those greenhouse 25 gas reports that I know were due annually, and each

2699 1 company makes that report to the EPA. 2 MR. SMITHERMAN: Our model plant was 3 specifically based on greenhouse gas reporting data. So 4 we used data for -- specifically for the San Juan Basin 5 greenhouse gas report and the -- specifically for the 6 Permian Basin greenhouse gas report. So we used actual 7 data from those basins and assumed -- I got to admit we 8 assumed -- that the data -- the average across the 9 entire San Juan would not be any different than Colorado 10 versus New Mexico. 11 So we basically used San Juan as a 12 representative of the gas wells in Northwest New Mexico. 13 Then we used the data in the Permian Basin, Texas and 14 New Mexico, as a representative of the oil wells in New 15 Mexico. 16 VICE-CHAIR TRUJILLO DAVIS: Okay. 17 And I think my last question kind of just 18 continues to kind of speak to that, but, you know, the 19 oil fields are very different, the San Juan versus the 20 Permian, and I'm one -- and they go up and down, too. 21 They have sunny days and cloudier times. 22 So I'm wondering, in 1996 or the mid-'90s, did 23 you -- was the state seeing that level of activity that 24 we are seeing today? And again I realize that those two 25 basins are probably experiencing different things. So	2701 1 they're going to assume. You might have noticed that in 2 our work and in ERG's work we used two wells per site. 3 That's probably not far off back in the early -- in the 4 early or mid-'90s. I know that our company tended to 5 have more than two per site, some places a little less 6 than that. 7 But it was a time when that was not terribly 8 unusual, to have a small number of wells per battery. 9 That is changing, and I think as we watch over time 10 we're going to see the number of wells per site go up. 11 And that is a very good thing. It's a good 12 thing for a lot of reasons. And one of the reasons is 13 it's going to -- you're going to see a drop in the 14 number of components per well, because as you put more 15 wells on a site, they're more efficient, and therefore 16 they have fewer components per well that they're 17 serving. So that's a good thing. 18 They're also smaller in footprint. Each 19 individual site might be bigger, but you're using one 20 site where you might have used multiple sites in the 21 past. That's good for the -- for the surface of the 22 earth, also. 23 VICE-CHAIR TRUJILLO DAVIS: Okay. Thank you. 24 You answered my follow-up question with that. So thank 25 you.
2700 1 I'm just kind of wondering as far as activity level, you 2 know, are we comparing apples to apples in this 3 situation. 4 MR. SMITHERMAN: An excellent question. 5 I -- I really can't necessarily give you 6 personal experience in the northwest, but I can give you 7 very good personal experience in the southeast part of 8 the state. 9 In the '90s started seeing quite a bit of 10 activity in more conventional drilling. It was just the 11 time that we started putting our toe in the water for 12 horizontal drilling in the Permian Basin. So actually 13 activity was moderate in the '90s, not nearly what it is 14 today, and the character has changed dramatically 15 between 1996 and 2019. 16 VICE-CHAIR TRUJILLO DAVIS: And so in the -- 17 in the '90s you did the industry and -- I don't know the 18 '90s, I have to say, too well, but -- so I'm curious, in 19 the '90s were most of those wells that were being 20 drilled single well facilities, where there's one 21 facility -- or one well per facility? 22 MR. SMITHERMAN: The data indicates -- and 23 there's quite a long bit of discussion within -- 24 associated with the EPA on putting these model plants 25 together, in figuring out how many wells per site that	2702 1 And I appreciate your time. 2 MR. SMITHERMAN: Thank you, ma'am. 3 HEARING OFFICER ORTH: Thank you. 4 Member Bitzer? 5 MEMBER BITZER: Yeah. 6 Real quick, one of the slides was done 7 about -- early on was done about the things that we're 8 not regulating, the nonhydrocarbon. 9 One of the nonhydrocarbons that was listed was 10 H2S, and I'm assuming that's hydrogen sulfide; is that 11 correct? 12 MR. SMITHERMAN: That's correct. 13 MEMBER BITZER: I know it stinks. 14 Isn't it also toxic? 15 MR. SMITHERMAN: It is toxic. And when I say 16 not regulated, I don't mean not regulated. I mean it's 17 not a part of this particular rule, because it's not an 18 ozone precursor. 19 MEMBER BITZER: Right. 20 MR. SMITHERMAN: It's highly regulated. 21 MEMBER BITZER: Yeah. It's highly toxic. 22 (Simultaneous discussion.) 23 MR. SMITHERMAN: Exactly. 24 MEMBER BITZER: Okay. 25 And then you've finally -- yeah. I was going

2703 1 to ask about the many wells. You talk about many wells 2 on the same -- essentially the same pad. I thought the 3 directional drilling or the -- or the -- what did you 4 call it -- horizontal drilling was all the same hole, 5 basically, and then you just turned directions once you 6 went -- once you went down. 7 Are you drilling multiple holes in the same -- 8 off the same pad? Is that what you're telling me? 9 MR. SMITHERMAN: We are. There -- there are 10 technologies where you can drill multiple laterals from 11 a same -- same wellbore. Not many operators have 12 adopted that yet. So most of the time you'll see an 13 individual wellbore for an individual horizontal 14 lateral. These wells are close together. They 15 literally can be 10 or 15 feet apart from each other. 16 So you can put a lot of wells on a pad. 17 MEMBER BITZER: Fair enough. 18 That's all I had, Madam Hearing Officer. 19 Thank you. 20 HEARING OFFICER ORTH: All right. Thank you. 21 Member Garcia? 22 MEMBER GARCIA: Yes. I just had a clarifying 23 question, please. 24 You said that the gains between going -- 25 inspecting quarterly versus monthly were diminishing	2705 1 which the OCD is requiring, documented AVOs. 2 Now, we've heard testimony that AVOs are not 3 as effective as LDAR, and I'll agree with that. But 4 it's not nothing. In fact, I was on a site about two 5 months ago, and even these 63-year-old ears could hear 6 malfunctioning controller. So you can find substantial 7 numbers of leaks through audio, visual and olfactory 8 surveys. So that's the second kind of component of a 9 three-legged stool. 10 And the other is maintenance, and making sure 11 that we're operating and maintaining our equipment, and 12 documenting that as we're going to be required to do so 13 is the third leg. And all of those together are going 14 to drive down the leaks and drive down emissions. 15 Quite frankly, it drives up the costs per ton 16 of LDAR, because you've been successful. In fact, 17 that's why many operators are asking for an alternative 18 plan, because they're going to eventually find ways to 19 use new technologies, to screen and find places that 20 they need to do LDAR, and be able to optimize those 21 costs and reduce emissions further at a lower cost. 22 MEMBER GARCIA: Thank you very much. I 23 appreciate that. 24 That's all. 25 MR. SMITHERMAN: Thank you, ma'am.
2704 1 returns, and I think I understand intuitively what 2 you're meaning by that, but I'm also looking at it in 3 terms of over time. 4 Wouldn't you have older equipment and still be 5 able to catch more leaks and problems in the equipment? 6 Now, I understand your point that yes, you catch more, 7 but it becomes so much more expensive for the tons of 8 emissions reduced than it's not worth. But there still 9 is an opportunity to catch more leaks if you increase 10 the frequency, right? 11 And then some of the leaks, if you have older 12 equipment, they could -- they could be larger or smaller 13 depending on the year or the time that you do it. 14 It's -- you can't predict that, correct? 15 MR. SMITHERMAN: You cannot predict it. The 16 data seems to indicate -- in fact, the data has 17 consistently indicated that under any LDAR frequency 18 once you put the LDAR program in place the number of 19 leaks found in each successive survey goes down. 20 In essence, what you're doing is you're 21 finding those weak points in the system that are about 22 to break, and -- or that have broken, and you repair 23 them and replace them. And in essence, you're -- you're 24 taking the weak links out. And you couple that with two 25 other things. You couple that with now weekly AVOs,	2706 1 HEARING OFFICER ORTH: Thank you. 2 Member Honker? 3 MEMBER HONKER: Yeah. Just a couple of 4 questions, Mr. Smitherman. 5 I was looking through your presentation, and I 6 see a lot of, you know, costs per ton of reduction, but 7 I didn't see the absolute costs for your model plant of, 8 you know, annual cap -- costs of doing LDAR annually, 9 semiannual, quarterly. 10 Are those in there somewhere? 11 MR. SMITHERMAN: Not in my slides. I can tell 12 you what we used. It was the same thing that -- from 13 the CTG. We used \$1,370 per site for annual LDAR, and 14 that is corrected to 2019 dollars. We used \$2,375 for 15 semiannual on well sites. And we used \$4,385 for 16 quarterly, again for well sites. I didn't write down my 17 gathering and boosting cost. I do have the annual 18 number, which was 8,082, but I got distracted and didn't 19 finish my table. 20 MEMBER HONKER: Okay. So some of these costs 21 per ton are really over multiple periods of doing LDAR, 22 are they not? Or multiple years in some cases? You 23 know -- 24 MR. SMITHERMAN: Actually, it's all -- I'm 25 sorry. Go ahead.

2707 1 MEMBER HONKER: To get to the numbers like in 2 your slide 50, you must be adding costs through several 3 years, maybe -- maybe under your calculations that's 4 what it takes to get a ton of pollutant reduction. 5 MR. SMITHERMAN: Each of my numbers is on an 6 annual basis. So it's the annual cost for LDAR. If you 7 did LDAR quarterly, it's all four of those LDAR survey 8 costs combined for the year, and it's the tons of 9 emissions for just that year. 10 MEMBER HONKER: Okay. 11 MR. SMITHERMAN: All on an annual basis. 12 MEMBER HONKER: But, I guess, picking up on 13 what Member Garcia was asking about, wouldn't most of 14 your reductions come during the first few cycles of 15 doing LDAR? 16 MR. SMITHERMAN: They do. We do see a 17 diminishing return on repeated LDAR surveys. The -- the 18 emission factor -- emission reduction factors from EPA 19 are the emission factors that everyone in this hearing 20 had used, and they're static. 21 MEMBER HONKER: Okay. 22 All right. Thanks a lot. That's all I have. 23 MR. SMITHERMAN: Thank you, sir. 24 HEARING OFFICER ORTH: Thank you. 25 Mr. Hiser, does any of that prompt redirect?	2709 1 required to have weekly LDAR under OCD's rules or under 2 these rules. 3 Q. You mean weekly AVO? 4 A. Excuse me. Thank you very much for that. 5 That would be really expensive. 6 Weekly AVOs. And we would suggest that all of 7 these sites that are occupied within whatever footage 8 that NMED finds is appropriate have weekly A -- weekly 9 AVOs and that LDAR for those sites be quarterly. That 10 seems to strike a balance between the really, really, as 11 I've discussed, really high cost to do LDAR on a monthly 12 basis, and it -- but it also makes sure that we have 13 documented AVOs on a weekly basis on those sites. 14 Q. Thank you, Mr. Smitherman. 15 And so, Madam Hearing Officer, I thought that 16 sort of recent development would be of interest to the 17 Board Members. And of course, if there are questions 18 from the parties, happy to have that happen, as well. 19 HEARING OFFICER ORTH: All right. Let me 20 check. 21 Would any party like to turn on their camera 22 and have a question about Mr. Smitherman's last 23 statement there? 24 I'm not seeing anyone, Mr. Hiser. 25 Would any Board member have a question of
2708 1 MR. HISER: I do have a question for 2 Mr. Smitherman, which is not completely redirect, but I 3 think if Madam Hearing Officer will indulge me, she'll 4 understand why I want to ask that question. 5 FURTHER DIRECT EXAMINATION 6 BY MR. HISER: 7 Q. So, Mr. Smitherman, you've heard a number of 8 pieces of testimony throughout this hearing about 9 concerns of fence-line communities related to the oil 10 and gas industry, have you not? 11 A. I have, sir. 12 Q. Does NMOGA have anything it wants to say about 13 what it would like to do to address some of those 14 concerns? 15 A. Certainly. And really from a personal 16 standpoint, I understand that. I -- actually my own 17 home is within just a little over a half a mile from 21 18 gas wells and two gas compressors, and within a mile I 19 actually have 26 wells and three compressors. So it 20 does hit a little closer to home. And we recognize and 21 sympathize with the concerns that others have expressed 22 about this, and we would like to offer a possible 23 solution. 24 What we'd like to offer is right now some of 25 these wells that could be near occupied areas are not	2710 1 Mr. Smitherman's last statement? Just wave your hand. 2 FURTHER EXAMINATION 3 BY THE BOARD: 4 HEARING OFFICER ORTH: Oh, Member Garcia. 5 MEMBER GARCIA: Yes. Just to understand, 6 would you be proposing language and -- in a 7 particular -- I know this is -- we're talking about 116, 8 but would you be proposing language to fine-tune exactly 9 what you're saying? 10 MR. SMITHERMAN: We'd be happy to do so. 11 HEARING OFFICER ORTH: Madam Chair. 12 CHAIR SUINA: Thank you for that follow-up 13 question, Member Garcia. 14 And just to follow up on that, just in terms 15 of process, I was just wondering how -- not to open up 16 another can of worms, but just so I can get my head 17 around this -- maybe this is a question for our Hearing 18 Officer. 19 Would we be able to have Mr. Smitherman back 20 at some point after some of the other testimony that we 21 hear on this particular item on 116, and in particular 22 related to his testimony and some of the proffers? 23 HEARING OFFICER ORTH: So I was about to say, 24 actually, we still have several witnesses to go on 25 116 --

2711 1 CHAIR SUINA: Right. 2 HEARING OFFICER ORTH: -- and the Board can 3 certainly request Mr. Smitherman make another 4 appearance. It will depend on his availability. I 5 understand he's not available tomorrow. 6 But let me ask about future availability. 7 MR. HISER: Madam Hearing Officer -- 8 MR. SMITHERMAN: I'm available Friday. 9 MR. HISER: Mr. Smitherman is available on 10 Friday. That's probably our most immediate need, would 11 be that Friday. He's got some availabilities 12 sporadically thereafter, which we would purport to make 13 him available at anybody's convenience. But hopefully 14 we can wrap this up on Friday. I think that's still 15 everybody's goal. 16 HEARING OFFICER ORTH: Yes. Yes. Firm -- 17 firm goal. 18 All right. So, Madam Chair, does that answer 19 your question? 20 CHAIR SUINA: It does in terms of his 21 availability, and I was just wondering if there would be 22 language in the meantime proposed so that we could 23 follow up with that to add on to Member Garcia's 24 question and comments. 25 HEARING OFFICER ORTH: Let me ask Mr. Hiser.	2713 1 transcript. 2 Okay. We'll do that, Mr. Hiser. Thank you. 3 MR. HISER: Thank you, Madam Hearing Officer. 4 (Exhibit NMOGA 58 admitted.) 5 HEARING OFFICER ORTH: And I see Mr. Rose on 6 the screen. 7 MR. ROSE: Yes, Madam Hearing Officer. 8 Before -- I don't want to throw rain on this 9 parade, but as to Mr. Smitherman's last proposal, I just 10 wanted to note that there may be folks who would want to 11 opine on that proposal who may not be here because, at 12 least in my estimation, it's beyond the scope of the 13 notice that you gave. And so -- both pro and con as to 14 the proposal. 15 And so I think entertaining a regulatory 16 proposal at this late date may -- may prejudice some 17 folks who aren't going to be -- who aren't here or 18 aren't available to testify on that. So just wanted to 19 alert the Board that there may be an issue with respect 20 to taking that up in the context of this particular 21 hearing. It may be the fodder for a future hearing, but 22 from my perspective, I think you're going to have notice 23 issues with respect to this area. 24 HEARING OFFICER ORTH: Thank you for that, 25 Mr. Rose.
2712 1 MR. HISER: Madam Hearing Officer -- sorry. 2 I'm having video problems. 3 Yes. We will propose language along the lines 4 you just heard from Mr. Smitherman on this issue, and 5 we'll try to get that to the Board perhaps tomorrow 6 morning, and I'm sure that we maybe have other 7 discussions, as well. But we will be getting language 8 in. 9 CHAIR SUINA: Thank you. 10 HEARING OFFICER ORTH: Thank you. 11 MR. HISER: And then, Madam Hearing Officer, I 12 wonder if the only other thing would be -- 13 Mr. Smitherman's testified to the -- obviously, the 14 nonproffered stuff. I think the tables are going to be 15 easier for everybody to follow than trying to read it in 16 the transcript. I'm wondering if it would be 17 appropriate to go ahead and mark this as a NMOGA 18 Exhibit 58 without the proffered materials, and then to 19 have those tables 58 -- or 59, 60 and 61. 20 HEARING OFFICER ORTH: Any objections from any 21 other party? 22 I'm going to mute you, Madam Chair. 23 Any objections from any other party to that 24 proposal? 25 I think it might be easier to follow in the	2714 1 I would certainly want to keep notice issues 2 in mind. I'm sure that Ms. Soloria would also have -- 3 be keeping that in mind. But thank you for that. 4 Any other questions from the Board? 5 All right. Then thank you, Mr. Smitherman and 6 Mr. Hiser. 7 It is 6:40. I'm not sure what else we can do 8 that would fit in the next 20 minutes. 9 Ms. Katz? 10 Oh, I'm sorry. I see Member Garcia waving. 11 MEMBER GARCIA: Just a quick question about 12 the status of where we are. 13 Are we looking like we're going to finish by 14 Friday? Are we doing okay? 15 HEARING OFFICER ORTH: We have a lot of 16 topics, and I did want to mention that. This is the 17 paper I was looking for just now. 18 We need to hear from Mr. Alexander before we 19 can tie up Topic 117. We need to hear from 20 Mr. Alexander before we can tie up Topic 122. We still 21 have several witnesses on this topic, LDAR. And then, 22 of course, we also have topics, I believe, 123 and -- 23 sorry -- yeah, Sections 123 and 124. 24 Right, Ms. Katz? 25 MS. KATZ: Yes. And we -- there's also

2715 1 another topic from -- the topic that's numbered 37, 2 which is the proposed -- proposal for reduced emission 3 completions from EDF, CAA, CPP and NAVA. 4 So I would ask -- my ask would be that we try 5 to push through and get finished with LDAR this evening. 6 I -- that would be the only chance that we -- I think we 7 would have to potentially wrap things up Friday, by the 8 end of Friday. So that would be what I would ask, and I 9 am sure there's -- 10 MR. HISER: NMOGA is -- 11 MS. KATZ: -- going to be opinions on that. 12 HEARING OFFICER ORTH: Okay. 13 MR. HISER: NMOGA is supportive of that, as 14 well, Madam Hearing Officer. 15 HEARING OFFICER ORTH: I'm sorry. Repeat 16 yourself, Mr. Hiser? 17 MR. HISER: I said NMOGA is supportive of 18 trying to push through to the end of LDAR today if we 19 can. 20 HEARING OFFICER ORTH: All right. 21 Mr. Butzier? 22 MR. BUTZIER: GCA also supports that proposal. 23 I think we should absolutely do everything we can to 24 finish Friday. 25 HEARING OFFICER ORTH: Ms. Fox?	2717 1 turn a light on. It's getting dark in here. 2 HEARING OFFICER ORTH: Go ahead. 3 All right. Thank you. 4 Go ahead, Ms. Paranhos. 5 MS. PARANHOS: Terrific. 6 TAMMY THOMPSON 7 (Relating to Topic Order 27) 8 having been first duly sworn or affirmed, was 9 examined and testified as follows: 10 DIRECT EXAMINATION 11 BY MS. PARANHOS: 12 MS. PARANHOS: And I believe that last time or 13 perhaps (unintelligible and/or inaudible). So 14 Dr. Thompson's exhibits are EDF Exhibit A, which are our 15 proposed red-line, GG, HH, II, JJ, TT, and that is her 16 direct testimony, Exhibit TT. 17 Q. Dr. Thompson, do you have any revisions to 18 your direct testimony that you filed with respect to 19 Section 116? 20 A. I do not. 21 And please let me know if -- if you all can 22 hear me well enough. I know I've had some audio issues 23 in my office before. So -- 24 Q. We can hear you fine right now, at least I 25 can.
2716 1 MS. FOX: Thank you, Madam Hearing Officer. 2 We can support staying later. That's not a 3 problem. But our one LDAR witness, Ms. Lee Ann Hill, 4 the only conflict she's had in the whole two weeks is 5 tonight, right now. And so she is not available right 6 now, but she is available all day tomorrow. So we could 7 put -- if we get through everybody but Ms. Hill, we 8 could put her on first thing tomorrow morning. 9 HEARING OFFICER ORTH: All right. 10 Ms. Paranhos, we would go back to Tammy 11 Thompson at this point. 12 MS. PARANHOS: Correct. I am definitely 13 supportive of continuing and getting through LDAR this 14 evening. I do need to see if she is available because I 15 had indicated to her that we usually wrapped up with 16 witness testimony by 6:00 p.m. So let me try to get her 17 now. 18 HEARING OFFICER ORTH: I see her on the 19 platform. There she is. 20 MS. PARANHOS: Oh, perfect. That's amazing. 21 HEARING OFFICER ORTH: All right. Let's go, 22 then, to Dr. Thompson and see if we can get just a 23 little bit further this evening. 24 Cheryl, are you doing okay? 25 THE REPORTER: If you can give me a second to	2718 1 A. Okay. 2 Q. Could you please summarize for the Board the 3 opinions in your testimony regarding EDF's alternative 4 proximity proposal. 5 A. Sure. I support EDF's proximity proposal 6 based on -- or the -- I'm sorry -- the proposed 7 proximity-based LDAR requirement that will reduce 8 volatile organic compounds that contribute to 9 ground-level ozone and reduce exposure to harmful 10 pollutants for persons residing, working or playing 11 within 1,000 feet of oil and gas facilities. 12 In addition, increasing the frequency of well 13 site inspections and quickly repairing any 14 malfunctioning or leaking equipment, as proposed by EDF, 15 will reduce the emissions of all VOCs from oil and gas 16 operations in New Mexico. This would also -- this 17 resulting reduction in VOCs will help New Mexico reduce 18 local formation of ozone and thus help New Mexico stay 19 in attainment of the National Ambient Air Quality 20 Standards for ozone. 21 Ozone, as we know, is a criteria pollutant 22 that EPA recognizes as dangerous to humans. 23 Q. Thank you, Dr. Thompson. 24 And if you could please just elaborate a bit 25 on the ozone benefits of EDF's proximity-based LDAR

2719 1 proposal. 2 A. Right. So again one of the clear benefits of 3 EDF's proposal is that it will lead to these additional 4 VOC reductions, and as we talked about before, VOCs are 5 a key component to ground-level ozone. So by reducing 6 VOCs you will help reduce the local formation of ozone 7 and help the state remain in compliance of the ozone 8 NAAQS. 9 So as my colleagues have stated earlier today, 10 EDF estimates that requiring quarterly rather than 11 annual or semiannual inspections at well sites with 12 site-wide VOC emissions less than five tons per year 13 will result in an additional 2,080 tons of VOC 14 reductions annually. And if you bump up the inspection 15 frequency to monthly for all the well sites located 16 within 1,000 feet of occupied areas that emit greater 17 than five tons per year of VOCs, we will remove an 18 additional 3,600 tons of VOCs from the atmosphere. 19 So again VOCs, as I spoke about in my last 20 testimony, are a key component to the formation of 21 ground-level ozone. We know that ground-level ozone, as 22 one of the public testimonies stated earlier, is a 23 dangerous air pollutant. It's like a sunburn to your 24 lungs. I liked that. But it is a very reactive species 25 that reacts with your lung tissue and damages it.	2721 1 those terms can be used often interchangeably, and I 2 just wanted to clarify that. So air toxics and 3 hazardous air pollutants recognized by USEPA, and 4 benzene is one of them, and again it has been solidly 5 linked to cancer in humans. 6 Q. Thank you. 7 And do oil and gas sources emit benzene? 8 A. Yes. Benzene is one of the VOCs that is 9 emitted from oil and gas production, benzene along with 10 other hazardous air pollutants, again HAPs. And we have 11 heard from our colleague that the measurement campaign 12 done by the University of Wyoming in New Mexico found 13 high levels of benzene in the emissions from New Mexico 14 wells. 15 Q. Thank you. 16 And is there a safe level of exposure to 17 benzene? 18 A. No. No. The USEPA and the World Health 19 Organization have made that declaration. And WHO, World 20 Health Organization, states that there is no safe level 21 of exposure to these toxic compounds. 22 To go into a little bit more detail, we -- 23 giving up. I put my notes away. 24 So the relationship between -- so what's 25 called the dose-response curve, the relationship between
2720 1 Exposure to elevated concentrations of ozone 2 lead to serious adverse health effects, including 3 asthma, increased emergency room visits and premature 4 death. Impacts -- these impacts are particularly severe 5 in sensitive populations like children and the elderly. 6 And we know that ozone also causes direct harm to the 7 environment. It impedes plant growth and vitality, and 8 we know it decreases crop yield. 9 As we've heard and discussed, air quality in 10 seven counties in New Mexico is dangerously close to 11 being out of compliance with the federal health-based 12 standards for ozone. Much more must be done to protect 13 healthy air and to protect against air quality 14 degradation in New Mexico. 15 These additional inspections at well sites, 16 especially near occupied areas, can help the Department 17 protect air quality. 18 Q. Thank you, Dr. Thompson. 19 And could you explain to the Board what 20 benzene is. 21 A. Benzene is a well established cause of cancer 22 in humans. It is recognized as an air toxic by the 23 USEPA, and air toxics -- they're -- these compounds that 24 are listed as air toxics are also referred to as 25 hazardous air pollution -- air pollutants, or HAPs. So	2722 1 human health response and the dosage, what you're 2 breathing in, so that is assumed to be linear, and it 3 crosses the X axis at zero, meaning the only way to 4 reduce your risk of health -- of negative health 5 response to these components is to have zero exposure to 6 them. 7 So there's no -- there's no -- there's no 8 level where we can say nothing is going to happen. 9 Q. Great. 10 And, Dr. Thompson, could you describe some of 11 the studies that have examined health impacts to people 12 that live, work or play near oil and gas facilities? 13 A. Sure. I will talk about a very comprehensive 14 study that was done by the Colorado Department of Public 15 Health and the Environment, CDPHE. And so this study 16 links air pollution emissions from oil and gas 17 production operations to potential serious human health 18 impacts in populations living at specific locations 19 near -- or specific vicinity to well sites. 20 And so this is a modeling study that used 21 emissions that were measured from specific -- they were 22 measured from specific processes. So a team went out 23 and measured basically plumes from four types of 24 processes on well sites. So they have emissions 25 associated with drilling, fracking, flowback and

2723 1 production. 2 So we take these emissions estimates, and we 3 use a model. This one is called AERMOD. It's 4 recognized by the USEPA. It's a dispersion model. And 5 we represent various -- well, actually many years of 6 meteorological data that can -- that represent a lot of 7 variability in wind speed and wind direction. And they 8 use what's called a Monte Carlo approach, where they 9 measured the plumes from emission -- emissions plumes 10 representing a number -- representing tens of thousands 11 of different wind speeds, wind directions, emissions 12 rates. 13 So to take a step back, the purpose of this 14 whole study was to understand the range of potential 15 concentrations that people living and breathing near 16 well sites might be exposed to for a short time, an 17 hour, like an acute hourly exposure, to longer time, an 18 annual to lifetime exposure. 19 And they take into account different activity 20 patterns, how much time you might spend outdoors, how 21 much time you might spend actually in the vicinity. And 22 they looked at discrete -- well, they actually looked at 23 a continuous range of points between like right at the 24 well site to 2,000 feet. 25 And this -- again this study used years worth	2725 1 level of exposure. So how they do it is they use our -- 2 they use animal models and our understanding of health 3 response to estimate a one in a million chance of 4 getting cancer -- additional chance of getting cancer 5 associated with a certain type of -- with a certain 6 level of exposure. And that's the limit that they set. 7 Anything above that, they -- there is a red flag. 8 And so that's how -- that's what this study 9 was looking at, any increase over that one in a million 10 chance of -- of getting cancer from this exposure. 11 And so what they found -- so this -- again 12 this study of Monte Carlo, tens of thousands of runs, 13 they created these -- these surface maps of 14 concentrations around well sites. 15 And they used three different types -- they 16 used three different sizes of well sites where they 17 increased the emissions, representing three to 18 18 particular well drilling sites on a well pad. And 19 they -- instead of representing the well sites as point 20 sources, they smeared it across the -- like the one-acre 21 plot with three well sites, instead of three point 22 sources, it was an area source, which has the effect of 23 underestimating what the max concentration would be. 24 You can imagine a plume from a specific source 25 transporting out verse -- which is how it is in real
2724 1 of data, wind speed and wind direction. One of the -- 2 one of the challenges -- and this came up earlier, you 3 know, how representative the meteorology and the 4 understanding of how wind -- wind can impact what's 5 downwind. 6 So first off, there is -- there is always 7 going to be shifts in wind that will move pollutants 8 around. So there's no -- there's no place that's going 9 to be upwind and safe all the time. Right? And then 10 there's low wind speeds where pollutants can kind of 11 just sort of slowly disperse and settle, and it does 12 create more of like a circle around the -- the site or 13 the source. 14 So they took into that account -- they took 15 that into account, and they actually mapped out, you 16 know, by wind speed and wind direction all of the data 17 that they use. And it was fairly representative. So 18 you got the full -- the full circle of direction, and 19 you got a wide range of wind speeds to -- to show what 20 these -- what the range of impacts would be. Right? 21 And so from that -- from that they looked at 22 the minimum and the maximum, they looked at the average, 23 so what you could expect. And they compared that to 24 again our best understanding of human health response. 25 And again we talked about how there's no safe	2726 1 life, versus that same emission smeared across a 2 one-acre well -- well plot where it's artificially 3 diluted ahead of time. And so that -- that had the 4 effect of actually underestimating what the potential 5 concentration could be, probably by a little bit, but I 6 saw there was testimony saying that that was 7 overestimating, but it wasn't. It was underestimating. 8 So here are some of the things that they found 9 with respect to benzene and other hazardous air 10 pollutants. 11 So benzene exposure from both production 12 emissions alone, but then also from all activities 13 combined, so that's the drilling, fracking, flowback and 14 production, were associated with an increased lifetime 15 risk, so again above one in a million, of leukemia for 16 just an average individual at 500 feet. 17 So again they looked at like minimum, like 18 someone who wasn't exposed to the maximum 19 concentrations, and maybe spent less time in that 20 vicinity, versus the maximum. And so they looked at 21 just -- and then an average individual, so like the 22 median, and that person had an increased risk of 23 leukemia at 500 feet. 24 They also looked and they found risks in 25 population exposed to the highest concentration, so

2727 1 again, you know, using the model and finding that 2 location at the highest benzene concentration, only 3 dropped to below the one in a million risk threshold 4 after a distance of 2,000 feet. So that was important. 5 Right? So you had to get 2,000 feet away from the well 6 to -- to drop your -- the maximum risk of increased 7 leukemia to below that one in a million risk threshold. 8 So in addition to the cancer risks, there are 9 also risks associated with blood disorders and immune 10 disorders. So this -- this question also came up 11 earlier. Right? 12 And what they found for noncancer health 13 risks -- so -- and this is similar to the headache, like 14 that acute like, oh, I don't feel good. Right? This 15 is -- this is associated -- this can be associated with 16 that. So benzene and two ethyl toluene emissions were 17 found to be higher than what would be considered 18 acceptable risk for most of the simulated populations at 19 500 feet away after -- so this is a one-hour acute 20 exposure. 21 And then exposures of benzene were more than 22 10 times higher than the acceptable risk for that 23 one-hour maximum exposure, and therefore it's a risk for 24 blood disorders. And again blood disorders can result 25 in anemia, disturbances in clotting or the ability to	2729 1 their likelihood that they will develop cancer or other 2 negative health effects. 3 MS. PARANHOS: Thank you so much, 4 Dr. Thompson. 5 Those are all of my questions, and there is no 6 surrebuttal from Dr. Thompson. 7 HEARING OFFICER ORTH: Thank you very much, 8 Ms. Paranhos and Dr. Thompson. 9 I see Mr. Rose and then Mr. de Saillan. 10 Go ahead. 11 MR. ROSE: Yeah. Thank you, Madam Hearing 12 Officer. 13 I just wanted to remind the Board that this 14 testimony was subject to the objection that I raised 15 earlier concerning the relevance in this hearing. 16 CROSS-EXAMINATION 17 BY MR. ROSE: 18 Q. Dr. Thompson, it looks like basically you took 19 your rebuttal testimony, which is EDF Exhibit TT, and 20 sort of expanded on what you had said in your rebuttal 21 testimony; is that correct? Or explained what you said 22 in your rebuttal? 23 A. That's right. I tried to make it in just more 24 understandable language. 25 Q. Is the Colorado study in the record of this
2728 1 fight infections could manifest as fatigue, nosebleeds 2 or infections. 3 And then the study also found the potential 4 for neurotoxic effects, such as headaches, blurred 5 vision, dizziness, from the combined acute exposure of 6 benzene into ethyl toluene. 7 And so these risks were seen with acute 8 exposure in every age group, and these exposures and 9 risks were highest during the flowback stage. They were 10 higher than those from other drilling and fracking 11 activities. 12 Q. Thank you so much. 13 A. So -- yep. Go ahead. 14 Q. Thank you. That was a super helpful summary. 15 Could you describe in your opinion what the 16 policy implications are that flow from the CDPHE study? 17 A. Yeah. I mean, it shows -- it show a need for 18 more stringent controls of oil and gas emissions at well 19 sites especially located near to where people play, work 20 or recreate. People living near oil and gas sites will 21 breathe in more of these harmful species. And as the 22 CDPH -- CDPHE study has shown, that if you're living 23 within 2,000 feet of an oil and gas site, they have 24 evidence to suggest that there is a potential that 25 humans could inhale enough to statistically increase	2730 1 proceeding? Did you offer that as an exhibit to your 2 testimony? 3 A. If I didn't, that was an oversight. 4 MR. ROSE: And, Madam Hearing Officer, without 5 the study, obviously, it's difficult to evaluate and 6 question the witness as to the propriety of her 7 statement. So -- and I think we talked about that 8 earlier in terms of proper rebuttal testimony or 9 surrebuttal. So I just wanted to note that for the 10 record. 11 Q. In terms of your discussion of health impacts, 12 I know you talked about benzene and potentially other 13 pollutants that are comprised or maybe emitted from well 14 sites. 15 Is your concern impacts of those contaminants 16 the components of emissions from well sites as opposed 17 to concerns about exceeding the ozone NAAQS? 18 A. I'm -- it -- it's not either or, right? It 19 would be both. Both are harmful to humans. 20 Q. Well, I guess what I'm getting at is in your 21 discussion about impacts of emissions on facilities or 22 residences or people that occupied structures that are 23 close to oil and gas wells -- I was wondering whether 24 your testimony about impacts was because the ozone NAAQS 25 were being exceeded at those locations or because you

2731 1 believe that there are other impacts from those 2 emissions that may not be directly related to ozone 3 concentrations. 4 A. I believe it's -- I believe it's both. 5 Q. Let me put it more directly. Do you have any 6 evidence that the ozone NAAQS are being exceeded at 7 these locations? 8 A. I believe we were talking about preventing the 9 exceedance in the future, but also there's no safe level 10 of ozone. So it's not necessarily -- I mean, if I'm 11 talking about human health, there is no safe level of 12 ozone. So there's no level of ozone that people can 13 breathe where they're not going to have a negative -- or 14 they're not -- it's going to be good for them. Right? 15 It's going to be bad for them at any level. So yeah. I 16 would be concerned about that, as well. 17 Q. I take it you disagree with the federal ozone 18 NAAQS that we're talking about here, which in your 19 opinion -- 20 A. And been -- 21 (Simultaneous discussion.) 22 Q. And -- 23 A. Scientists have been trying to make it lower 24 for a very long time. Health scientists have said it 25 needs to be lower for a very long time. And that could	2733 1 Q. And they're -- do you know whether New 2 Mexico's adopted either a primary or secondary ozone 3 standard that's more stringent than the national 4 standards? 5 A. No. I'm -- I -- 6 MS. PARANHOS: Objection. This goes really 7 way beyond the scope of Dr. Thompson's testimony. 8 MR. ROSE: I think it doesn't, Madam Hearing 9 Officer. I think the notice of this hearing said we're 10 to talk -- the hearing is to consider measures to assure 11 that, one, implementing the state statute, but to assure 12 that the National Ambient Air Quality Standard for ozone 13 is met and that we're regulating ozone precursors to 14 assume that. And I think Dr. Thompson's testimony goes 15 well beyond implementing the ozone NAAQS. It goes to 16 other health effects which -- which are not the subject 17 of this hearing based on the notice of this hearing. 18 That -- that's the basis of my objection to 19 the admission of this testimony, and to the extent it's 20 being considered, it seems to me I have the right to 21 explore exactly what she's asking this Board to consider 22 and whether it's appropriate to consider it. 23 HEARING OFFICER ORTH: Ms. Paranhos, I tend to 24 agree with Mr. Rose that he can explore all of her 25 testimony.
2732 1 be in the future, and that's something to be prepared 2 for. Right? 3 Q. And I guess the follow-up question is had -- 4 did EDF propose that New Mexico adopt -- adopt a lower 5 ozone primary -- primary ambient air quality standard 6 from the federal standard? Is that part of your 7 proposal today, or has -- 8 A. No. 9 Q. -- EDF proposed that the state adopt a more 10 stringent standard? 11 A. No. That is not a part of the proposal. No. 12 It is not. 13 Q. Okay. 14 And with respect to your testimony about -- 15 about nonhealth-related impacts, I take it the federal 16 secondary standard is designed to address those impacts. 17 What's the federal secondary standard for 18 ozone? Do you know offhand? Or is there one? 19 A. Yeah. So it's -- it's related to -- oh, my 20 goodness. It's a complicated -- it's a complicated 21 measure that looks at the average daylight ozone over 22 the course of -- it's more complicated than the 23 eight-hour. But yes. There is a secondary standard 24 that looks at basically like daytime exposure of plants 25 over the course of a longer period of time.	2734 1 MS. PARANHOS: I would just note that 2 Dr. Thompson is not a lawyer, and so her knowledge of 3 what the State of New Mexico has or has not adopted with 4 respect to its own ambient air quality standard is well 5 beyond the scope of her expertise. 6 HEARING OFFICER ORTH: All right. That's 7 right. So -- hold on, Mr. Rose. 8 Dr. Thompson, please, if there's a question 9 that goes beyond the scope of your expertise, you can 10 certainly note that. 11 Mr. Rose. 12 MR. ROSE: And that's all I was asking for. I 13 don't think you have to be a lawyer to be able to read 14 the Board's regulations and determine what they say. 15 And in fact, she's testifying on the national standards. 16 So I think she certainly can testify if she knows 17 whether there's an equivalent state standard on those 18 topics. 19 Q. With respect to cancer risks, Dr. Thompson, do 20 you know if there's any New Mexico or this Board that 21 has adopted any criteria for acceptable cancer risks? 22 A. Not to my knowledge. 23 Q. And are you familiar with the toxic air 24 pollutant program that's part of the Board's NSR permit 25 rules?

2735 1 A. I am not detail -- I do not have -- I'm not 2 very familiar with that. 3 Q. And I was curious as to whether -- I mean, 4 obvious -- it appears as though EDF is not proposing any 5 changes to those programs, as well; is that correct? 6 A. Not to my knowledge. 7 MR. ROSE: That's all I have, Madam Hearing 8 Officer. 9 Again as I indicated, you know, we'll 10 certainly be addressing the admissibility of this 11 testimony in our posthearing submittals. 12 HEARING OFFICER ORTH: All right. Thank you. 13 Mr. de Saillan? 14 MR. DE SAILLAN: Thank you, Madam Hearing 15 Officer. 16 Can you hear me okay? 17 Good. 18 CROSS-EXAMINATION 19 BY MR. DE SAILLAN: 20 Q. Good evening, Dr. Thompson. 21 I just have a few questions for you. 22 First of all, pollutant levels can vary quite 23 a bit within a given area. 24 Would you agree with that? 25 A. Yes.	2737 1 in the atmosphere, things tend to have more time to be a 2 little bit more well mixed. Ozone will be less variable 3 than primary pollutants like NO2, which is also covered 4 under the NAAQS, and then hazardous air pollutants are 5 also primary, and they would be more variable. 6 Q. Okay. Thank you. 7 And then you talked -- you mentioned briefly 8 that scientists have been trying to reduce the -- the 9 standards for ozone for a while, and as I recall, the 10 Clean Air Science Advisory Committee, if I have that 11 right, I think it's the CASAC -- 12 A. CASAC. 13 Q. -- a number of years ago recommended that the 14 NAAQS, the National Ambient Air Quality Standards, for 15 ozone, primary again, actually be lowered to 65 parts 16 per billion. 17 Do I have that correctly? 18 A. I believe the window that they set -- I mean, 19 as low as 60, I believe, was initially one of their 20 recommendations, but -- 21 MR. DE SAILLAN: Okay. Thank you, 22 Dr. Thompson. That's all my questions. 23 HEARING OFFICER ORTH: Thank you, 24 Mr. de Saillan. 25 Are there any other parties with questions of
2736 1 Q. Oh, I forgot to introduce myself. I'm sorry. 2 I'm Charles de Saillan. I represent the New Mexico 3 Environmental Law Center here. 4 So for example, if -- and we've been talking 5 about ozone quite a bit. So let's look at ozone. For 6 example, if EPA concludes that in a given county in New 7 Mexico the National Ambient Air Quality Standards -- 8 primary standards for ozone are in compliance, you could 9 have localized areas where the ozone levels are actually 10 quite a bit higher than the ambient air quality 11 standards; is that correct? 12 A. Yes. They're called hot spots, terminology. 13 Q. Could you elaborate on that a little bit, 14 please? 15 A. Well, so because atmospheric chemistry is so 16 nonlinear and because there are so many components that 17 are required in the formation of ozone, yeah, they're -- 18 and atmospheric physics and dispersion create highly 19 variable concentrations of all the pollutants, all of 20 them leading to the formation of ozone and some of them 21 that may destroy ozone, creating a highly variable 22 atmosphere. 23 And so yes. I would say ozone being a 24 secondary pollutant, however, will be less variable than 25 primary pollutants. So meaning that because it's formed	2738 1 Dr. Thompson? 2 No? 3 Let me turn to the Board for their questions. 4 While I'm doing that, if you're an attendee on 5 this platform and have a question, please reach out 6 through the chat. 7 EXAMINATION 8 BY THE BOARD: 9 HEARING OFFICER ORTH: Madam Chair, do you 10 have a question? 11 CHAIR SUINA: Yes, Madam Hearing Officer, I 12 do. I have a couple of questions for Ms. Thompson. 13 Thank you again for your testimony. 14 Appreciate it. 15 You had talked a little bit about risk level 16 and some of the health studies that have been done 17 recently. And having worked in compliance up at the 18 laboratory, Los Alamos, I've had to look at some risk 19 studies. And so I was just wondering if there was any 20 risk studies and analysis done of like -- for example, 21 you talked about acute exposure and acute risk -- or 22 acute -- risk associated with acute exposure, I think it 23 was. 24 Has there -- has there been any studies of, 25 say, year over year or even generation to generation of

2739 1 exposure related, I think, in -- you had mentioned in 2 terms of benzene? 3 MS. THOMPSON: So, you know, in my 4 introduction I mentioned that my expertise is to 5 understand how to model air pollution concentrations and 6 interpret the potential for health impacts from 7 exposure. So this is where I will go ahead and say that 8 my expertise is not in determining the relationship 9 between -- or how to set those limits, basically, or how 10 to set what -- what those risk factors would be. 11 It's about how to understand how to model the 12 potential for those concentrations and interpret the 13 modeling based on the limits that other epidemiologists 14 have set. So I am -- I am not as familiar with that 15 literature, but I -- I understand how to interpret it. 16 CHAIR SUINA: Okay. Thank you for that 17 response. 18 And I was getting back to -- I think, to the 19 recommendation of the 1,000 foot, and I think your 20 colleague had mentioned that was really based upon the 21 Colorado rules. 22 From a -- from a health perspective, do you 23 have any comment on the 1,000 foot versus, say, 500 or 24 2,000 or any other incremental -- I think you had 25 mentioned another distance of 2,000.	2741 1 All right. Did any of that raise redirect for 2 you, Ms. Paranhos? 3 MS. PARANHOS: Madam Hearing Officer, no 4 redirect for Ms. Thompson, but I did just want to note 5 for the benefit of the Board that EDF Exhibit II is the 6 CDPHE study that Dr. Thompson was referring to in her 7 testimony. 8 HEARING OFFICER ORTH: That's the Colorado 9 study? 10 MS. PARANHOS: Correct. That's the Colorado 11 Public Health and Environment study. 12 HEARING OFFICER ORTH: Okay. Thank you. 13 Thank you very much, Dr. Thompson, for your 14 testimony. 15 MS. THOMPSON: Thank you for the opportunity 16 to talk with you. 17 HEARING OFFICER ORTH: I'm wondering now if we 18 move to Mr. Blewitt. 19 Mr. Rose? 20 MR. ROSE: Madam Hearing Officer, I don't 21 believe we were going to present Mr. Blewitt on this 22 topic. 23 HEARING OFFICER ORTH: Oh. Okay. I have him 24 here, but okay. 25 So then do we move to -- do we move to
2740 1 MS. THOMPSON: That's right. And, you know, 2 five -- 500 would be -- would be more protective of 3 human health. Right? But it's a compromise. 4 And so, you know, that also is outside of my 5 expertise is understanding -- or like, you know, 6 understanding those compromises, but I can report on the 7 fact that 500 would be more protective of human health 8 and would, you know, reduce that risk that we -- that I 9 talked about, with respect to benzene and even average 10 exposure of benzene at that 500 mark leading to an 11 increased chance of -- of cancer. 12 CHAIR SUINA: Okay. 13 Madam Hearing Officer, and thank you, 14 Ms. Thompson. That's all I have for now. 15 HEARING OFFICER ORTH: Thank you. 16 The Vice-Chair put in chat that she does not 17 have any questions. 18 I don't know if Member Bitzer is still on the 19 platform. 20 Member Garcia? 21 MEMBER GARCIA: No questions. Thank you. 22 Thank you for your testimony. 23 MS. THOMPSON: Thank you. 24 HEARING OFFICER ORTH: And Member Honker. 25 I'm not sure if he's on the platform. No.	2742 1 Professor Villa? 2 MR. PACYNIK: Madam Hearing Officer? 3 HEARING OFFICER ORTH: Yes. 4 MR. PACYNIK: If you could give us just a 5 moment, I think we are ready to go, although my 6 co-counsel who is going to be putting on Professor 7 Villa, I think, was putting his child to bed. So I just 8 want to -- if you give me -- if it's possible to have 9 a -- just a few minutes to see if I can get him on. 10 HEARING OFFICER ORTH: Certainly. 11 Let's take a 10-minute break, if that works. 12 Does that work? 13 All right. 7:30. 14 (Proceedings in recess from 7:20 p.m. to 15 7:30 p.m.) 16 HEARING OFFICER ORTH: Good evening, Professor 17 Villa. 18 My name is Felicia Orth, the Hearing Officer. 19 And I understand we're going to move to your 20 testimony. 21 If you would please spell your name for the 22 transcript. 23 MR. VILLA: Yes, Madam Hearing Officer. My 24 name is Clifford J. Villa, last name is spelled 25 V-as-in-Victor-I-L-L-A.

2743 1 HEARING OFFICER ORTH: Thank you. 2 And if you would raise your right hand. 3 Do you swear or affirm to tell the truth? 4 MR. VILLA: I do. 5 HEARING OFFICER ORTH: Thank you very much. 6 CLIFFORD VILLA 7 (Relating to Topic Order 27) 8 having been first duly sworn or affirmed, was 9 examined and testified as follows: 10 DIRECT EXAMINATION 11 BY MR. SHIMANEK: 12 HEARING OFFICER ORTH: Mr. Shimanek. 13 MR. SHIMANEK: Thank you, Madam Hearing 14 Officer. 15 I'd like to go ahead and move Exhibit 6, which 16 is Professor Villa's rebuttal testimony, and Exhibit 7, 17 which is his CV, into evidence. 18 HEARING OFFICER ORTH: Thank you. 19 They are admitted. 20 (Exhibits CCP and NAVA EP 6 and 7 admitted 21 into evidence.) 22 HEARING OFFICER ORTH: And, Mr. Shimanek, your 23 video is breaking up. I'm wondering if, although it's 24 delightful to see you on screen, we may have to -- have 25 to turn off the video.	2745 1 Second, I'm responding to direct testimony 2 offered in support of the proximity LDAR proposals by 3 Hillary Hull, which identifies how a significant number 4 of people from historically marginalized communities 5 live in close proximity to low-producing wells and are 6 at risk with health harms from oil and gas pollution due 7 to this close proximity. 8 Third, I'm responding to both of these 9 proposals and testimony that decreased LDAR specifically 10 could put communities of color at risk. My testimony 11 will note how federal and state regulators have failed 12 historically to protect communities of color and 13 low-income people from environmental harms in places 14 including New Mexico. I will also explain how agencies 15 and boards in New Mexico have legal authorities and 16 duties to prevent such disproportionate harms in the 17 future. 18 HEARING OFFICER ORTH: Professor Villa, you're 19 speaking a little fast, and we're at the end of a long 20 day. If you would just slow down a bit. 21 MR. VILLA: Thank you for the reminder, Madam 22 Hearing Officer. 23 Q. (BY MR. SHIMANEK) Will you please state your 24 relevant education history? 25 A. Yes. I have a bachelor's degree in English
2744 1 MR. SHIMANEK: I'm going to go ahead and turn 2 it off. I do have rural Internet. So bear with me. I 3 apologize. 4 Okay. 5 Q. Can you please state your name? 6 A. Yes. My name is Clifford J. Villa. 7 Q. And please state on behalf -- on whose behalf 8 you are submitting this rebuttal testimony. 9 A. I am submitting rebuttal testimony on behalf 10 of the Center for Civic Policy and the NAVA Education 11 Project. 12 Q. Did you submit full written rebuttal 13 testimony, and do you adopt it here without changes? 14 A. Yes, I do. 15 Q. Is the Center for Civic Policy and the NAVA 16 Education Project Exhibit 7 an accurate copy of your 17 curriculum vitae? 18 A. Yes, it is. 19 Q. And what is the purpose of your testimony 20 today regarding this matter? 21 A. Three purposes. 22 First, I'm offering rebuttal testimony to 23 changes to NMED's proposed ozone precursor rule that 24 have been submitted by NMOGA and submitted by 25 Mr. Smitherman in his direct testimony.	2746 1 and in economics from the University of New Mexico. I 2 also have a law degree from Lewis & Clark Law School in 3 Portland, Oregon. 4 Q. Who is your current employer? 5 A. I am currently a professor of law with tenure 6 at the University of New Mexico School of Law. However, 7 I'm not representing UNM School of Law in my testimony 8 today. Rather, I am testifying today based upon my 9 independent expertise as a scholar in the field of 10 environmental justice. 11 Q. Please state your relevant prior employment 12 history. 13 A. Prior to beginning as a tenure track professor 14 at the University of New Mexico in 2015, I served for 15 more than 20 years as an attorney with the US 16 Environmental Protection Agency in offices of 17 Washington, DC; Denver, Colorado; and Seattle 18 Washington. I also taught as an adjunct professor at 19 Seattle University School of Law. 20 Q. What were your relevant areas of work at the 21 USEPA? 22 A. As an EPA attorney, I worked with nearly all 23 federal pollution control laws administered by the 24 USEPA, including the Clean Air Act, the Clean Water Act 25 and the federal Superfund statute. I addressed concerns

2747 1 regarding hazardous pollutants, including volatile 2 organic compounds such as benzene and toluene. 3 I also focused heavily on incorporating 4 environmental justice concerns into compliance and 5 enforcement, ensuring protections for indigenous, 6 immigrant and low-income communities, for example. 7 Q. Please describe your relevant scholarship, 8 teaching and your broader public engagement as a law 9 professor. 10 A. In general, I teach in the areas of 11 constitutional law and environmental law and the 12 intersection between the two in the field known as 13 environmental justice. This has included teaching 14 environment law, environmental enforcement at both 15 Seattle University and the University of New Mexico. At 16 the University of New Mexico, I also teach a dedicated 17 seminar on environmental justice. 18 I'm also the co-author of a case book on 19 environmental law, and I am the lead author and editor 20 of a textbook on environmental justice that is being 21 adopted by law schools now across the country. I also 22 have several published articles in the field, the field 23 specifically concerning environmental justice. 24 I've also made a number of professional 25 presentations on environmental justice, including a	2749 1 proposals as they compare to NMED's proposal? 2 A. Yes. I did review these proposals, and I 3 noticed that the CCP and NAVA Education Project proposed 4 to increase the frequency of LDAR inspections for 5 wellhead sites that are within 1,000 feet of occupied 6 buildings. 7 Q. Did you review Hillary Hull's testimony 8 related to this LDAR proximity proposal to increase the 9 frequency of LDAR inspections within 1,000 feet of 10 occupied buildings? And if so, what did you generally 11 notice about Mrs. Hull's testimony related to this LDAR 12 proposal as it relates to the demographic impacts of the 13 proposal? 14 A. Yes. I did review Ms. Hull's testimony, and I 15 notice that Ms. Hull testified that many New Mexicans 16 belonging to historically marginalized social and 17 economic groups live within 1,000 feet of affected 18 wellhead sites, including approximately 2,700 children 19 under the age of five, more than 4,500 adults 65 years 20 of age or older, more than 5,700 individuals who are 21 living in poverty, and some 19,000 people of color, 22 including over 5,800 Native Americans. 23 Q. Did you also review testimony from Lee Ann 24 Hill of PSE Health Energy? And if you did, what did you 25 note generally about Mrs. Hill's testimony?
2748 1 presentation this past summer at the Rocky Mountain 2 Mineral Law Foundation. I made presentations on 3 environmental justice to EPA Region 10, to NMED, and to 4 tribal leaders, to federal judges, among many other 5 audiences. 6 Q. Did you review NMOGA's proposed changes to 7 NMED's provisions for controlling leaks and fugitive 8 emissions in proposed Section 20.2.50.116, including 9 specifically Mr. Smitherman's written testimony related 10 to controlling emissions, equipment leaks and fugitive 11 emissions in the proposed section? 12 A. Yes, I did. 13 Q. What did you notice generally about NMOGA's 14 proposals as they compared to the NMED proposal? 15 A. In general, I noticed that NMOGA recognizes 16 the necessity of additional leak detection and repair 17 inspections for oil and gas facilities. However, NMOGA 18 also proposes to reduce the frequency of LDAR 19 inspections compared to proposals by NMED and also by 20 Center for Civic Policy and NAVA Education Project. 21 Q. Did you review the Center for Civic Policy and 22 the NAVA Education Project's proposed changes to NMED's 23 provisions for controlling emissions equipment leaks and 24 fugitive emissions in proposed Section 20.2.50.116? And 25 if so, what did you notice about the CCP and NAVA EP	2750 1 A. I did review Mrs. Hill's testimony, and I 2 noted that she stated that there was a reasonable degree 3 of scientific certainty that living in close proximity 4 to oil and gas facilities results in increased health 5 risks and impacts from elevated air pollution levels, 6 and that these risks would be disproportionately 7 experienced by people who live, work and go to school 8 near oil and gas facilities. 9 Q. What observations did you make based on your 10 review of these materials? 11 A. My overall observations were that there's a 12 substantial number of people from historically 13 marginalized communities who are particularly at risk of 14 health harms from oil and gas infrastructure because of 15 the close proximity to where they live, work and attend 16 school. 17 I also observed that NMOGA's proposal would 18 generally reduce the frequency of inspections for leaks 19 at low potential to emit facilities compared to NMED's 20 proposal. In contrast, CCP and NAVA Education Project 21 proposal would increase the frequency of inspections of 22 facilities that are in close proximity to where New 23 Mexicans live, work and attend school. 24 Q. Can you describe what is meant by 25 environmental justice?

2751 1 A. Yes. 2 Madam Hearing Officer, may I share my screen 3 at this time? 4 HEARING OFFICER ORTH: Yes. 5 THE REPORTER: And I'd ask you to slow down 6 again, please. 7 MR. VILLA: Thank you. I appreciate that 8 important feedback. 9 Can you all see a screen that says In the 10 Matter of Proposed New Regulation? Whoops. Yes? 11 MR. SHIMANEK: Yes. 12 MR. VILLA: Okay. Thank you. 13 Could you repeat the question, please? 14 Q. (BY MR. SHIMANEK) Can you describe what is 15 meant by environmental justice? 16 A. Yes. Turning to the next slide, you see a 17 definition here that is maintained currently by the New 18 Mexico Environment Department. It states that 19 environmental justice means the fair treatment and 20 meaningful involvement of all people, regardless of 21 race, color, national origin or income, with respect to 22 the development, implementation and enforcement of 23 environmental laws, regulations and policies. 24 This definition by the New Mexico Environment 25 Department repeats verbatim the definition that has been	2753 1 Q. To your knowledge, has environmental injustice 2 been a real problem in New Mexico? 3 A. Yes. 4 Q. Can you give us some examples? 5 A. Yes. For example, in Espanola there is a 6 Superfund site known as the North Railroad Avenue Plume. 7 It is consisting of chlorinated solvents that are in the 8 groundwater from an old dry cleaner. The plume was 9 discovered in 1996, fully 25 years ago, and still 10 contaminates the groundwater beneath downtown Espanola 11 today. In that community, it's estimated that it's 12 93 percent people of color, including members of the 13 Santa Clara Pueblo. 14 In the village of Questa, north of Taos, the 15 groundwater is contaminated by what is known today as 16 the Chevron Questa Superfund site. Groundwater 17 contamination reaches beneath the entire village and 18 has, in fact, affected the health of many villagers, 19 according to some estimates. The Village of Questa is 20 80 percent nationally ranked for people of color. 21 In the South Valley of Albuquerque, where my 22 family is from, it is heavily immigrant and Latino. It 23 has multiple Superfund sites, multiple sources of 24 industrial air pollution. And in the South Valley of 25 Albuquerque, life expectancy is 10 years or less than
2752 1 maintained by the US Environmental Protection Agency 2 since at least the year 2000. 3 Q. How do you believe this definition would apply 4 to the present proceeding? 5 A. Well, three of the important elements of the 6 definition of environmental justice are underlined in 7 this slide. 8 People in this definition applies to all 9 people. It includes people of color, such as the 10 estimated 19,000 people, including 5,800 Native 11 Americans, in close proximity to wellhead sites. People 12 also includes elderly people, young people, and people 13 with preexisting health conditions who may be more 14 vulnerable to poor air quality. 15 Meaningful involvement in this definition 16 means that members of the interested and affected 17 public, including members of CCP and NAVA Education 18 Project, cannot only provide public comments on a 19 proposal, but have a genuine opportunity to influence 20 the final outcome of this proceeding. 21 And finally, fair treatment means in the end 22 that no group of people, such as low-income or 23 indigenous people, within 1,000 feet of a wellhead will 24 suffer disproportionate harms as a consequence of the 25 regulated activity.	2754 1 other neighborhoods in Bernalillo County. 2 And a final example comes from the Grants 3 Mining District, where there are elevated cases of lung 4 cancer among Native Americans associated with 5 occupational and residential exposures due to historic 6 uranium mining. 7 Q. In your expert opinion, does the Environmental 8 Improvement Board have the legal authority to consider 9 disparate impacts of pollution in promulgating 10 regulations under the Air Quality Control Act? 11 A. Yes. In my analysis, the Environmental 12 Improvement Board must consider and give weight to the 13 disparate impacts of pollution in promulgating 14 regulations under the Air Quality Control Act, under the 15 text of statutes and relevant case law, including those 16 indicated in the slide on the screen. 17 Just to move forward, so the authority of the 18 EIB to address concerns for environmental justice is 19 amply demonstrated in this case known as Colonias 20 Development Council versus Rhino Environmental Services, 21 and it demonstrates how New Mexico agencies have both a 22 legal authority and a legal duty to take environmental 23 justice into account in their agency decisions. 24 In this case, decided in 2005, the New Mexico 25 Supreme Court directed the Secretary of NMED to consider

2755 1 public testimony opposing a proposed landfill even if 2 the public comments concerned issues of public health 3 and welfare beyond the technical requirements for a 4 landfill. 5 The Rhino case specifically concerned solid -- 6 the New Mexico Solid Waste Act. However, per an opinion 7 from the New Mexico Attorney General in 2008, Rhino also 8 demonstrates that the same result could and should be 9 reached under the Air Quality Control Act. 10 The Attorney General observed in writing that 11 the Air Quality Control Act, like the Solid Waste Act, 12 is replete with references to public input. The Air 13 Quality Control Act also provides sufficient statutory 14 authorization, like the Solid Waste Act, for the 15 promulgation of regulations involving the consideration 16 of public health and welfare. 17 The Attorney General concluded that therefore, 18 pursuant to the Rhino roadmap, the promulgation of 19 regulations under the Air Quality Control Act, quote, 20 will allow Board staff in the future to assign weight to 21 public testimony regarding environmental justice 22 principles. 23 Taking just a closer look at the text of the 24 Air Quality Control Act, it says, among other things, 25 that the EIB, quote, shall give weight it deems	2757 1 injury when it failed to accurately determine the 2 demographics of the community and failed to determine 3 the actual threats to that community posed by the 4 proposed facility. 5 Q. Beyond the Air Quality Control Act, are there 6 any other legal authorities that help establish the 7 Board's duty to consider environmental justice? 8 A. Yes. Another of those legal authorities 9 appears on the slide here. That is the Civil Rights Act 10 of 1964, Title VI. Title VI of the Civil Rights Act 11 applies to any program or activity receiving federal 12 financial assistance. 13 The New Mexico Environment Department is a 14 program that receives federal financial assistance, and 15 so this provision of the Civil Rights Act applies to 16 NMED activities. And for any program that receives this 17 federal financial assistance, the statute provides that 18 no person in the United States shall, on the ground of 19 race, color or national origin, be excluded from 20 participation in, be denied the benefits of, or be 21 subjected to discrimination. 22 Now, this statute is also elaborated upon in a 23 series of implementing regulations. The regulations 24 implementing the statute, including regulations 25 promulgated by the EPA, provide that -- prohibit
2756 1 appropriate to all facts and circumstances. It also 2 says that the EIB must consider the, quote, character 3 and degree of injury to or interference with health and 4 welfare. 5 Q. Can you expand on what character and degree of 6 injury means based on how the phrase has been used and 7 understood in other contexts? 8 A. Yes. Character and degree of injury to health 9 and welfare must include consideration of whether a 10 proposed regulation or activity would result in 11 disparate harms to low-income communities or communities 12 of color. 13 Just skipping forward a couple of slides, 14 there is a recent case that I mentioned in my rebuttal 15 testimony, Friends of Buckingham versus Virginia Air 16 Pollution Control Board, decided just last year by the 17 Fourth Circuit Court of Appeals. In this case, the 18 court looked at language very similar to that in New 19 Mexico that required the State of Virginia to consider 20 the character and degree of injury, when the Virginia 21 Air Pollution Control Board approved permitting for a 22 compressor station that was on a proposed pipeline. 23 The court concluded that the Virginia Air 24 Pollution Control Board had failed to satisfy the 25 requirement for evaluating character and degree of	2758 1 agencies who receive federal aid from, quote, using 2 criteria or methods of administering its program or 3 activity which have the effect of subjecting individuals 4 to discrimination because of their race, color, national 5 origin or sex, or have the effect of defeating or 6 substantially impairing accomplishments of the 7 objectives of the program. 8 So the regulations apply not only to 9 discriminatory acts, but also acts that end up having 10 some sort of discriminatory effect. 11 Now, enforcement of the statute is not 12 available directly in federal court for alleged 13 violation of the statute and its regulations. Parties 14 who complain can write a admin -- file an administrative 15 complaint with the USEPA. There have been, in fact, a 16 number of administrative complaints filed against NMED 17 and other agencies, including the City of Albuquerque, 18 alleging violations of the statute and regulations. 19 For example, in the year 2002, a Title VI 20 complaint was filed against NMED for alleged 21 discriminatory effect in the permitting of a hazardous 22 waste facility east of Roswell. The administrative 23 complaint was finally resolved through an informal 24 resolution agreement entered 15 years later, in 2017, 25 which provides some indication of how serious some of

2759 1 these actions may be considered. 2 Q. Do you have any other legal authorities? 3 A. Yes. Another legal authority arises under 4 executive orders requiring agencies, federal and state, 5 to take environmental justice considerations into 6 account in their activities. 7 In 1994, President Bill Clinton signed 8 Executive Order 12898, which, among other things, 9 required all federal agencies to ensure that their 10 programs, plans and activities do not have the effect of 11 excluding persons from the benefits of the agency's 12 actions and subjecting them to discrimination. Now, 13 this executive order applies to all federal agencies. 14 There is also an executive order signed in 15 2005 by New Mexico Governor Bill Richardson that 16 provides equal obligations for New Mexico agencies and 17 boards to also pursue environmental justice. 18 Q. What do these executive orders require? 19 A. Well, looking at just a few of the provisions 20 from the New Mexico executive order on environmental 21 justice, looking at paragraph 1, it says that all 22 cabinet level departments and boards and commissions 23 that are involved in decisions that may affect 24 environmental quality and public health shall provide 25 meaningful opportunities for involvement to all people	2761 1 So the orders themselves do not give rise to 2 an enforceable action. 3 Q. So what is the legal significance of these 4 executive orders today? 5 A. Well, as indicated in the case that I already 6 mentioned, Friends of Buckingham versus Virginia Air 7 Pollution Control Board, even though the executive 8 orders themselves are not directly enforceable, courts 9 have found that the executive orders today establish 10 enforceable standards of conduct for both federal and 11 state agencies. 12 In a forthcoming article to be published by 13 NYU, I trace the development of this robust body of case 14 law, including Friends of Buckingham, decided last year 15 by the Fourth Circuit Court of Appeals. The DC Circuit 16 through many decisions, including concerning the Dakota 17 Access Pipeline, has also affirmed these legal 18 principles. Most recently, just last month, another 19 pipeline project proposed in Texas was struck down based 20 upon failure to conduct a proper environmental justice 21 analysis. 22 And finally, all of this leads today to the 23 conclusion reached last year by the Fourth Circuit that 24 environmental justice is not merely a box to be checked. 25 Based upon the case law over almost 30 years now, we can
2760 1 regardless of race, color, ethnicity, religion, income, 2 or education level. 3 Paragraph 3, indicated here, notes that all 4 relevant cabinet level departments and boards and 5 commissions shall utilize available environmental and 6 public health data to address impacts in low-income 7 communities and communities of color. 8 And we have seen a number of environmental and 9 public health data that has been discussed in testimony 10 this afternoon and this evening, and under the executive 11 order it would require all cabinet level departments and 12 boards to take that data into account in making 13 decisions concerning environmental and industrial 14 facilities. 15 Q. Are violations of these executive orders 16 directly enforceable? 17 A. Violations of the executive orders are not 18 directly enforceable. However, if you look at paragraph 19 7 here on the slide, you find this sort of saving clause 20 in both the federal and state executive orders on 21 environmental justice. This one says, from the State of 22 New Mexico, nothing in this executive order is intended 23 to create a private right of action to enforce any 24 provision of this order or any action plan developed 25 pursuant to this order.	2762 1 see that environmental justice is no longer a theory. 2 It's not a fad. It's not just a good idea. 3 Environmental justice is now the law. 4 And as a teacher of environmental justice, I 5 want to help people, including members of the EIB, 6 understand that law and fulfill their statutory duty to 7 serve the public interest for all New Mexicans. 8 Q. Do you have any recommendations to the Board 9 for these regulations based on environmental justice 10 principles and the testimony that you've reviewed? 11 A. Yes. I would recommend that the Board reject 12 any proposals for changes to the regulation that would 13 have the potential for -- to disparately harm 14 marginalized populations, particularly communities of 15 color. I would also recommend that the Board accept any 16 reasonable proposals that would further protect 17 marginalized populations from health harms. 18 I have reviewed the proposals for changes to 19 the regulation from NMOGA, and I see they include 20 proposals to subject low potential to emit wells to less 21 frequent leak detection inspections. I also understand 22 from testimony by Hillary Hull that many people of 23 color, including Native Americans, live in close 24 proximity to such wells. 25 I therefore recommend that in keeping with

2763 1 environmental justice principles the EIB reject 2 proposals for reduced inspections of wellhead proposals. 3 I've also reviewed the proposals from the 4 coalition of nonprofit organizations, including CCP and 5 NAVA Education Project, that would require more frequent 6 leak detection and repair for wellhead sites within 7 1,000 feet of occupied buildings. And I have reviewed 8 the rebuttal testimony from Lee Ann Hill stating that 9 there's a reasonable degree of scientific certainty that 10 living in close proximity to oil and gas facilities 11 results in increased health risks. 12 Because many of the people who live in close 13 proximity to these wells are people of color, I 14 therefore recommend the EIB adopt those provisions in 15 keeping with the principles of environmental justice. 16 This concludes my rebuttal testimony. 17 MR. SHIMANEK: Madam Hearing Officer, this 18 concludes the summary testimony of Professor Cliff 19 Villa, and we now open him up for cross-examination. 20 HEARING OFFICER ORTH: Thank you very much, 21 Professor Villa and Mr. Shimanek. 22 If you would stop sharing your screen 23 momentarily, Professor. 24 MR. VILLA: Yes. Hello. 25 HEARING OFFICER ORTH: Thank you.	2765 1 District Court case that similarly applied the holding 2 of the Rhino decision to the Air Quality Control Act? 3 A. I may, although I'm not sure I'm thinking of 4 the one you are. 5 Q. Okay. 6 Well -- 7 A. Can you provide a little more information? 8 Q. I'm thinking in particular of a case last 9 year, SouthWest Organizing Project versus 10 Albuquerque-Bernalillo County Water Quality Control 11 Commission. 12 A. Yes. 13 Q. Or -- excuse me -- Air Quality Control Board. 14 A. Um-hum. Yes. 15 Q. Could you elaborate on that a little bit? 16 A. Well, I believe the case arose from the 17 Albuquerque South Valley, which I described earlier in 18 my testimony, which is a community that is experiencing 19 multiple forms of pollution. It may be that the 20 pollution is coming from facilities that are subject to 21 permits and may even be that the pollution is coming 22 from facilities that are in compliance with applicable 23 permits. 24 The question there is -- and is often one of 25 cumulative impacts on those communities. Again that
2764 1 If there is any party -- oh, I think I see 2 Mr. de Saillan -- who wishes to question Professor 3 Villa, turn on your screen. 4 We'll start with you, Mr. de Saillan. 5 MR. DE SAILLAN: Thank you, Madam Hearing 6 Officer. 7 Can you hear me okay? 8 MR. VILLA: Yes, sir. Thank you. 9 MR. DE SAILLAN: Okay. 10 CROSS-EXAMINATION 11 BY MR. DE SAILLAN: 12 Q. Good evening, Professor Villa. 13 Just for the record, my name is Charles de 14 Saillan, and I'm an attorney representing the New Mexico 15 Environmental Law Center. 16 I just have a couple quick questions for you. 17 You talked about the Rhino decision in your 18 testimony? 19 A. Yes. 20 Q. And you mentioned that there was an Attorney 21 General opinion that applied the Rhino -- the holding of 22 the Rhino decision to the Air Quality Control Act? Is 23 that -- was that your testimony? 24 A. Yes. 25 Q. Are you familiar with a New Mexico State	2766 1 community is very low-income and very diverse, heavily 2 people of color, and, of course, they have concerns 3 about protecting their own health even if those 4 facilities are in compliance with their individual 5 permits. 6 MR. DE SAILLAN: Thank you, Professor Villa. 7 That's all the questions I have. 8 HEARING OFFICER ORTH: All right. Thank you, 9 Mr. de Saillan. 10 Mr. Rose? 11 MR. ROSE: Just a couple questions for 12 clarification. 13 CROSS-EXAMINATION 14 BY MR. ROSE: 15 Q. Professor Villa, my understanding is that the 16 Environmental Law Clinic is representing the parties 17 you're testifying on behalf of in this hearing; is that 18 correct? 19 A. Yes. That's my understanding. 20 Q. And do you have an attorney-client 21 relationship with those parties, or is your testimony 22 independent of that representation? 23 A. I am not in this capacity representing the 24 clients in this case. I do in my faculty capacity 25 rotate into that clinic, although I've had no direct

2767 1 engagement as an attorney in this particular proceeding. 2 Q. And with respect to Mr. de Saillan's comment, 3 are you aware of the Court of Appeals case dealing with 4 SouthWest Organizing Project's challenge to an air 5 permit with the City of Albuquerque and rejection -- I 6 believe rejection of the cumulative impacts requirement 7 that in that case the Albuquerque Air Board considered? 8 A. Yes. I am familiar with that. 9 Q. And -- and that was a permitting decision, 10 correct? 11 A. I believe it was. 12 Q. And this is a rulemaking decision -- 13 rulemaking matter? 14 A. Yes. That's my understanding. 15 Q. And are -- and are you testifying that this 16 Board has the authority as a matter of state law to 17 require -- to impose requirements that are more 18 stringent than necessary to -- to meet the federal 19 ambient air quality standard for ozone? 20 A. My testimony is that this Board has authority 21 and an affirmative duty to protect the health of all New 22 Mexicans. The language in the definition of 23 environmental justice is actually all people, and 24 whatever it may take to protect those people, that that 25 is the requirement of environmental justice.	2769 1 testified on. 2 A. My testimony is really related to the 3 authority and duty of this Board to serve the interests 4 of environmental justice and protecting all people in 5 the State of New Mexico. 6 Q. And is it your opinion that the federal ozone 7 National Ambient Air Quality Standard does not somehow 8 affect all people equally? 9 A. Well, we've heard a good bit of testimony 10 today that proximity to sources of air pollution can 11 have a significant effect on human health. We've heard 12 testimony from Dr. Thompson and others who have 13 testified to that point. I am not here to testify 14 specifically about medical issues. But I think we've 15 heard testimony to that effect today. 16 Q. And again is it your opinion that this Board 17 has the authority to adopt requirements more stringent 18 than the federal National Ambient Air Quality Standards 19 in this proceeding? 20 A. Well, I think one thing we know, as we've 21 heard today, is that the NAAQS for criteria pollutants 22 have become more stringent over time. And in fact, I 23 know that there have been a number of concerns where 24 people have referred to a national standard as 25 suggesting that that ensures compliance with protection
2768 1 Q. And are you recommending to the Board that -- 2 that if the notice of this proceeding did not include 3 some of the language you're talking about or notice of 4 that, that it's appropriate for the Board to, in fact, 5 act without -- without giving notice to others who might 6 be affected? 7 A. I am not making any proposal for a rulemaking 8 that's not already stated in my written testimony. 9 Q. And do you know whether -- is it your opinion 10 that the notice of this proceeding allows the Board to 11 consider those proposals? 12 A. I could read the notice of this proceeding. 13 I -- like anybody else. I understand the notice of the 14 proceeding applies to emission standards for volatile 15 organic compounds and oxides of nitrogen for oil and gas 16 production, processing and transmission sources. 17 Q. And that's -- and if you read the rest of the 18 notice, I think it goes on to say it implements a 19 provision of the state statute related to assuring that 20 the federal ozone NAAQS is met. 21 A. I'm sure that notice will speak for itself. 22 Q. And I was just wondering whether your opinion 23 included an examination of the notice and an opinion on 24 whether or not the notice that this Board is operating 25 under is sufficient to include the proposals you	2770 1 of public health. 2 The Friends of Buckingham case was actually a 3 case directly on point. It appeared that the particular 4 county in Virginia was in compliance with the NAAQS. 5 However, people who lived right next to the proposed 6 facility could have been certainly threatened because 7 they might have been breathing more polluted air than 8 would have been detected when you apply the NAAQS over a 9 large area like an air shed. 10 Q. Do you know whether or not there's a proposal 11 before this Board to adopt a standard for ozone more 12 stringent than the NAAQS? 13 A. I'm not aware of that. 14 MR. ROSE: Thank you, Madam Hearing Officer. 15 I have no further questions. 16 HEARING OFFICER ORTH: All right. Thank you. 17 Let me invite any other party with a question 18 of Professor Villa to turn on their camera. 19 No? 20 I'll turn then to questions from the Board. 21 While I'm doing that, if you're an attendee on 22 this platform and would have a question, please reach 23 out through the chat. 24 25

2771 1 EXAMINATION 2 BY THE BOARD: 3 HEARING OFFICER ORTH: Madam Chair, do you 4 have questions of Professor Villa? 5 CHAIR SUINA: Thank you, Madam Hearing 6 Officer. And I think I just want to clarify. 7 Good afternoon -- or good evening, Professor 8 Villa. 9 Appreciate your testimony and thank you for 10 staying with us at this late hour. 11 MR. VILLA: Thank you. 12 CHAIR SUINA: Kind of to follow up on 13 Mr. Rose's line of questioning, I think he was talking 14 about not more stringent than the NAAQS -- federal EPA 15 NAAQS levels, but am I understanding in terms of the 16 proposals in -- that have been put forth would be more 17 stringent in terms of, say, the leak -- the LDAR 18 proposed requirements that would accomplish -- or would 19 address some of the environmental justice concerns? 20 MR. VILLA: Yes. Thank you for the question, 21 Madam Chair. 22 So I am not proposing any changes to a 23 national standard that is set by EPA. But the National 24 Ambient Air Quality Standards are really measured as a 25 measurement of air pollution in the ambient air and --	2773 1 emissions from an individual facility. 2 CHAIR SUINA: Okay. Thank you so much, 3 Professor Villa. 4 And, Madam Chair, that's all I have for now. 5 MR. VILLA: Thank you. 6 HEARING OFFICER ORTH: Thank you. 7 Vice-Chair Trujillo Davis. 8 VICE-CHAIR TRUJILLO DAVIS: I don't have any 9 questions at this time. I'd just like to thank 10 Mr. Villa for taking the time to speak with us. 11 MR. VILLA: Thank you, Madam Vice-Chair. 12 HEARING OFFICER ORTH: Thank you. 13 Member Bitzer? 14 MEMBER BITZER: I have no questions. Thank 15 you. 16 HEARING OFFICER ORTH: Thank you. 17 Member Garcia? 18 I'm not sure that I see her anymore. 19 And Member Honker. 20 I think -- all right. 21 Let's see. Does any of that prompt redirect 22 for you, Mr. Shimanek? 23 MR. SHIMANEK: No. I believe that would 24 conclude all our testimony tonight. Thank you. 25 HEARING OFFICER ORTH: All right. Thank you.
2772 1 and measured over large geographic areas like a county 2 or an air shed. 3 As I understand the proposal that we're 4 discussing in this proceeding, it's not about changing a 5 national standard. It's about how you achieve that 6 national standard. And one way to achieve it is by 7 preventing emissions of air pollutants, specifically the 8 ones at issue in this case, so that you don't exceed 9 those national standards. 10 CHAIR SUINA: Thank you for that response, and 11 I -- if I can just kind of clarify. 12 So some of the proposals, I think, that you 13 mentioned here your review of, in close proximity -- 14 some of the close proximity proposals, would that 15 address some of the environmental justice concerns? 16 MR. VILLA: Yes. And I appreciate the 17 question, too. 18 I mean, the NAAQS may be one standard to -- to 19 consider in protecting human health. Another standard 20 to consider is just the actual absolute pollutants that 21 people are breathing if, for example, they live right 22 next to a facility. The national standard won't tell 23 you whether or not health of any individual family or 24 household is being protected. What will tell you that 25 is monitoring and -- and inspections of the actual	2774 1 Thank you very much, Professor Villa and 2 Mr. Shimanek. 3 MR. VILLA: Thank you, Madam Hearing Officer. 4 Good night. 5 HEARING OFFICER ORTH: Good night. 6 Ms. Katz, we apparently do not have 7 Mr. Blewitt testifying on this topic, and we don't have 8 Ms. Hill until tomorrow morning. 9 I'm wondering if there's anything further 10 tonight from Ms. Kuehn or if you want to wait. 11 MS. KATZ: I think that we can -- I'd like to 12 just put Ms. Kuehn -- Ms. Kuehn and Mr. Palmer up to try 13 to wrap up our case this evening. 14 HEARING OFFICER ORTH: All right. 15 MS. KATZ: It's not very much. 16 HEARING OFFICER ORTH: All right. Thank you. 17 MS. KATZ: All right. 18 ELIZABETH BISBEY-KUEHN and BRIAN PALMER 19 (Relating to Topic Order 27 continued) 20 having been first duly sworn or affirmed, were 21 examined and testified further as follows: 22 DIRECT EXAMINATION 23 BY MS. KATZ: 24 MS. KATZ: Okay. So beginning with Ms. Kuehn, 25 what is the Department's response to the environmental

2775 1 NGOs' proposal for increased leak monitoring at wells 2 located near occupied structures? 3 MS. BISBEY-KUEHN: The Department supports the 4 proposal, and we note that EDF has put on evidence 5 demonstrating health impacts based on proximity, and 6 that Colorado has adopted similar provisions in their 7 Regulation 7, and the Department believes that this is 8 the right thing to do, and we think that industry should 9 agree to the proposal. 10 MS. KATZ: Thank you. 11 And moving to Oxy's testimony, what is the 12 Department's position on -- regarding exempting 13 satellite facilities from the LDAR requirements as 14 proposed by Oxy? 15 MS. BISBEY-KUEHN: The Department does not 16 agree that satellite facilities should be exempt from 17 the LDAR requirements. Oxy did not provide any 18 emissions data on those types of facilities, and NMED 19 was unable to determine the implications of exempting 20 those types of facilities. If this is a low-emitting 21 facility, the rule already provides for a reduced LDAR 22 frequency based on PTE. 23 MS. KATZ: Thank you. 24 And so moving to NMOGA's testimony, 25 Mr. Smitherman stated that the AVO requirements in the	2777 1 operations. 2 Did the Department send out a survey to 3 operators following the methane advisory panel process 4 in order to gather this type of New Mexico-specific 5 data? 6 MS. BISBEY-KUEHN: Yes. 7 MS. KATZ: And what was the response rate to 8 that survey? 9 MS. BISBEY-KUEHN: Zero response. 10 MS. KATZ: Did NMED propose the LDAR 11 frequencies that are currently before the Board on May 6 12 with its petition for rulemaking? 13 MS. BISBEY-KUEHN: Yes. 14 MS. KATZ: And could NMOGA have collected the 15 information from its members and provided it for the 16 Board's consideration over the past four-and-a-half 17 months? 18 MS. BISBEY-KUEHN: Yes. 19 MS. KATZ: Regarding Mr. Smitherman's 20 suggestion that NMED should allow compliance with the 21 federal requirements to suffice, if those 22 requirements -- regarding that statement, if those 23 requirements were sufficient, would we be seeing the 24 rising ozone levels that we are? 25 MS. BISBEY-KUEHN: No.
2776 1 Oil Conservation Division rule do not align with the 2 Department's AVO requirements in its proposed rule. 3 What is your response to that statement? 4 MS. BISBEY-KUEHN: The Department's proposal 5 requires weekly and monthly AVO inspections depending on 6 a facility's oil or gas throughput. OCD's regulation 7 requires weekly and monthly AVO inspections based on gas 8 throughput. So these rules are aligned for gas 9 throughput, and it was appropriate for OCD to base their 10 requirement on gas throughput because that -- the intent 11 of that rule is to reduce the waste of gas. 12 It is not appropriate to delete oil throughput 13 from this draft rule, as that would exempt AVO 14 inspections of those wells that are primarily 15 oil-producing wells with low natural gas production. 16 Oil wells with low gas production are sources of VOC 17 emissions, and the purpose of the AVO inspection is to 18 find and fix those sources of leaks, of leaking VOC 19 emissions. 20 Thus it is not appropriate to strike the oil 21 throughput threshold from this requirement. 22 MS. KATZ: Thank you. 23 Mr. Smitherman said that NMOGA would be happy 24 to gather cost information from New Mexico operators 25 that would be representative of actual New Mexico	2778 1 MS. KATZ: And is it necessary to have more 2 stringent state rules to address that issue as 3 authorized by the statute? 4 MS. BISBEY-KUEHN: Yes. 5 MS. KATZ: Thank you. 6 And turning to Mr. Palmer. 7 Mr. Smitherman characterized ERG's analysis 8 regarding LDAR -- the LDAR provisions as having errors. 9 In any of his direct or rebuttal, did 10 Mr. Smitherman identify any actual errors in the NMED 11 and ERG methodology? 12 MR. PALMER: No, he did not. The NMED 13 analysis used the federal EPA's Control Technique 14 Guideline analysis that was published in 2016 and is 15 still the guidance offered to states to develop rules 16 for existing sources of VOC in the oil and gas industry. 17 MS. KATZ: Thank you. 18 And does the CTG present incremental costs for 19 different LDAR frequencies or recommend that states 20 evaluate incremental costs? 21 MR. PALMER: No, it does not. 22 MS. KATZ: Thank you. 23 That is all I have on the surrebuttal. 24 HEARING OFFICER ORTH: Thank you, Ms. Kuehn, 25 Mr. Palmer and Ms. Katz.

2779 1 If there are any parties with questions of the 2 Environment Department panel -- 3 I see you, Mr. Rose. 4 MR. ROSE: Madam Hearing Officer, my question 5 is actually more for counsel than for the witnesses, and 6 I just wanted some clarification that -- that I think 7 Ms. Kuehn testified about the proposals being more 8 stringent than federal requirements, and I was curious 9 as to how the Department saw procedurally this Board was 10 going to look at that and whether it was going to have 11 a -- this hearing or a separate hearing that would be 12 directed to the determination required by the state 13 statute that -- that based on substantial evidence after 14 notice and public hearing, that the proposed rules will 15 be more protective of public health and the environment. 16 Is it -- it the Department's position that 17 this proceeding satisfies that or that some separate 18 proceeding specific to the proposals would be necessary? 19 MS. KATZ: Mr. Rose, we are not relying 20 specifically on that provision, and the provision in 21 what is currently Paragraph C of 74-2-5 authorizes the 22 Board to adopt more stringent regulations to address 23 rising ozone concentrations in areas of the state that 24 are exceeding 95 percent of the NAAQS. 25 MR. ROSE: Thank you, Madam Hearing Officer.	2781 1 as we can this evening, and we'll hear from Ms. Hill in 2 the morning. 3 So -- wait. Ms. -- oh, Ms. Fox. 4 MS. FOX: Thank you, Madam Hearing Officer. 5 We were wondering if we could be heard on 6 Mr. Rose's objections to our exhibits tomorrow morning 7 before Ms. Hill goes on. She -- you know, they object 8 to a number of our exhibits and testimony, and she is 9 one of them, and we would like to put this objection to 10 rest. 11 HEARING OFFICER ORTH: Is 8:30 okay for the 12 lawyers again? Yeah? 13 I see Ms. Katz nodding. Ms. Fox. 14 Let's see. Mr. Rose? 15 MR. ROSE: Madam Hearing Officer -- 16 HEARING OFFICER ORTH: Mr. Rose? 17 MR. ROSE: Yes. I'm getting there. I'm just 18 slow at this time of night. 19 I thought we put the issue to bed and that 20 we'd address it in our posthearing submittals, but I can 21 certainly make the same argument, and as I think I've 22 responded to Ms. Fox, if -- we've stipulated as to the 23 admissibility subject to objection. If they want you to 24 rule on the objection, I -- if you rule against me, I'm 25 going to raise it again in posthearing submittals
2780 1 HEARING OFFICER ORTH: Thank you. Oops. 2 Are there any other parties with questions of 3 the Department? 4 No, not seeing anyone else. 5 I turn to questions from the Board. 6 While I'm doing that, if you're an attendee on 7 the platform and have a question, reach out through the 8 chat. 9 Madam Chair, do you have a question? 10 CHAIR SUINA: Thank you, Madam Hearing 11 Officer. 12 I just want to thank our witnesses for 13 sticking with us and Ms. Katz for hanging in there. 14 I have no questions at this time. 15 HEARING OFFICER ORTH: Thank you. 16 Vice-Chair Trujillo Davis. 17 VICE-CHAIR TRUJILLO DAVIS: I want to echo 18 Member Suina's sentiments there and thank you. 19 I don't have any questions right now. 20 HEARING OFFICER ORTH: All right. Thank you. 21 Member Bitzer? 22 MEMBER BITZER: No questions. Thank you. 23 HEARING OFFICER ORTH: Thank you very much. 24 Thank you, Ms. Katz, Ms. Kuehn and Mr. Palmer. 25 I believe that completes as much of the topic	2782 1 anyway. 2 So I don't think that we gain anything in 3 terms of time or particularly in finishing this hearing 4 by doing it that way, but I can certainly do that if 5 that's appropriate. 6 HEARING OFFICER ORTH: All right. So, 7 Mr. Rose, you know I've been very careful for about 20 8 years now not to make recommendations to boards or 9 commissions on the merits of a petition, but I guess I 10 feel like I would still like an opportunity to make 11 recommendations on the admissibility of evidence. 12 So let's -- let's go at 8:30. And -- 13 MS. FOX: Thank you. 14 HEARING OFFICER ORTH: Let's see. Vice-Chair 15 Davis, I'm sorry. Do you have a question you want to 16 put on the record? 17 No. Okay. 18 I think we're done for this evening, then. 19 Thank you, all, very much for hanging in there 20 with us, and I'll be on the call with the lawyers at 21 8:30. 22 Good night. 23 (Proceedings adjourned at 8:21 p.m.) 24 25

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1 STATE OF NEW MEXICO)
2) ss.
3 COUNTY OF BERNALILLO)

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6 I, CHERYL ARREGUIN, the officer before whom the
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13 not a relative or employee of any attorney or counsel
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Volume 8
9/29/2021

EIB Ozone Hearing

A	2475:12	2554:6	2755:6, 2755:9	2430:9, 2430:9
A-D-A-M 2371:5	2507:13	2597:20	2755:11	2432:14
A-N-D-E-R-S-O-N	2538:12	2628:13	2755:11	2462:3
2657:8	2564:10	2681:17	2755:13	2567:11
A.(10 2472:11	2591:13	2723:19	2755:14	2600:19
A1 2462:24	2614:10	2724:14	2755:19	2600:21
2637:24	2655:18	2724:15	2755:24	2601:5
AA 2340:14	2715:23	2754:23	2757:5, 2757:9	2601:10
2591:16	abstract	2759:6	2757:10	2605:24
2591:17	2467:11	2760:12	2757:15	2614:1
AAA 2538:18	2468:1	accounted	2764:22	2619:23
abandon 2497:15	Academy 2655:6	2554:3, 2554:4	2765:2, 2768:5	2631:14
2612:15	accelerate	2554:23	Acting 2331:3	2667:13
abandoned	2370:4	accounting	action 2458:1	2678:4
2525:19	2503:14	2497:6	2458:25	2678:15
2557:4	2653:14	2568:15	2662:18	2684:6, 2686:1
2557:15	accept 2365:10	2580:11	2760:23	2687:24
2557:19	2366:2	2580:12	2760:24	2699:6, 2757:3
abated 2596:8	2374:24	2597:18	2761:2	2772:20
ability 2357:18	2448:10	2636:8	2783:12	2772:25
2384:16	2448:21	accounts	2783:15	2776:25
2390:9	2458:3, 2482:5	2571:18	actions 2625:14	2778:10
2458:23	2526:6, 2617:8	2571:21	2759:1	actuals 2687:5
2515:23	2648:20	2571:23	2759:12	actuation
2532:20	2762:15	2599:15	active 2575:2	2437:3
2727:25	acceptable	accrue 2357:7	2611:20	acute 2723:17
able 2349:22	2449:2	2593:10	2611:21	2727:14
2356:14	2473:11	2593:15	2611:22	2727:19
2383:5	2727:18	accurate	2611:25	2728:5, 2728:7
2383:21	2727:22	2468:19	2612:6	2738:21
2430:9	2734:21	2527:10	actively	2738:21
2442:10	accepted	2563:6	2345:13	2738:22
2452:20	2452:17	2572:10	2558:3	2738:22
2461:16	2455:10	2574:5	activities	Adam 2335:6
2466:18	2471:16	2578:23	2408:18	2365:24
2466:23	2639:12	2592:24	2409:12	2371:5
2472:4, 2510:5	2640:13	2628:2	2411:2, 2415:5	2371:12
2511:15	accepting	2678:11	2449:17	2371:22
2530:12	2371:20	2744:16	2589:2	2465:23
2534:14	2374:22	accurately	2726:12	add 2345:17
2560:4	2474:4, 2520:2	2482:9, 2757:1	2728:11	2346:8, 2347:1
2596:16	2640:5	accustomed	2757:16	2347:10
2607:18	access 2429:9	2351:24	2759:6	2352:8, 2354:1
2629:23	2561:21	achieve 2367:19	2759:10	2357:16
2633:20	2682:25	2593:21	activity	2379:8
2635:12	2761:17	2596:9, 2772:5	2448:22	2414:18
2639:18	accommodate	2772:6	2589:8	2414:21
2640:4, 2704:5	2480:18	achieved 2446:1	2699:23	2443:17
2705:20	accompanied	2550:23	2700:1	2457:23
2710:19	2651:18	2552:24	2700:10	2482:13
2734:13	accomplish	2605:4	2700:13	2483:6
abnormal 2613:3	2771:18	acid 2468:13	2723:19	2502:18
abnormally	accomplishments	act 2355:18	2752:25	2535:8
2540:25	2758:6	2355:21	2756:10	2627:13
abqcrs@gmail...	account 2369:10	2355:24	2757:11	2697:17
2327:24	2384:25	2415:4, 2459:1	2758:3	2711:23
absence 2463:22	2465:6	2464:2	actors 2535:19	added 2397:19
absolute 2706:7	2470:14	2746:24	2535:22	2434:5
2772:20	2493:21	2746:24	acts 2758:9	2434:12
absolutely	2548:18	2754:10	2758:9	2436:2, 2436:6
	2549:13	2754:14	actual 2352:16	2644:20

Volume 8
9/29/2021

EIB Ozone Hearing

2644:22 adding 2494:12 2644:14 2707:2 addition 2397:16 2431:23 2434:12 2436:2, 2436:6 2528:21 2544:16 2585:12 2604:23 2610:13 2628:24 2692:9 2718:12 2727:8 additional 2361:5 2409:14 2409:20 2415:11 2415:17 2436:23 2440:21 2441:3 2463:22 2466:13 2471:21 2479:5 2479:10 2497:11 2497:16 2498:12 2499:2, 2520:7 2520:8 2520:21 2526:19 2527:16 2539:5 2593:14 2593:19 2594:25 2595:16 2595:20 2596:25 2598:9 2598:11 2608:23 2608:24 2609:20 2609:21 2609:24 2609:24 2625:24 2626:3 2626:20 2667:24 2673:8, 2688:5 2719:3	2719:13 2719:18 2720:15 2725:4 2748:16 additionally 2444:18 2528:23 2545:18 2549:2 2596:23 2599:19 additions 2525:6 address 2342:23 2350:4, 2355:3 2355:8 2369:16 2389:4 2426:22 2431:8 2465:18 2494:13 2501:12 2509:10 2625:14 2665:9, 2666:4 2708:13 2732:16 2754:18 2760:6 2771:19 2772:15 2778:2 2779:22 2781:20 addressed 2349:17 2350:13 2355:11 2381:17 2416:16 2429:13 2465:2, 2472:9 2513:19 2513:24 2524:6 2524:23 2640:4 2746:25 addresses 2380:25 addressing 2344:7, 2431:8 2662:16 2662:19 2662:24 2735:10 adduced 2379:18 adhere 2352:7 adjourned	2782:23 adjunct 2746:18 adjust 2646:19 2682:17 2682:19 admin 2758:14 administered 2746:23 administering 2758:2 administration 2445:18 2473:2 administrations 2473:6 administrative 2353:24 2484:12 2497:11 2497:16 2758:14 2758:16 2758:22 administrator 2328:9 2365:22 2366:1, 2374:7 2376:4 2488:12 2488:14 2649:17 admissibility 2349:14 2379:24 2388:20 2423:3 2424:14 2425:12 2425:21 2735:10 2781:23 2782:11 admissible 2418:21 admission 2349:8, 2514:5 2733:19 admit 2397:1 2423:5 2423:10 2538:19 2699:7 admitted 2338:2 2339:2, 2340:2 2341:2, 2349:4 2349:16 2381:10 2383:17 2419:9 2425:23 2426:4, 2462:7	2483:25 2538:24 2539:2 2591:18 2637:22 2692:14 2713:4 2743:19 2743:20 admitting 2426:10 adopt 2477:25 2503:1 2516:19 2516:21 2519:12 2614:3 2690:17 2732:4, 2732:4 2732:9 2744:13 2763:14 2769:17 2770:11 2779:22 adopted 2428:12 2595:18 2598:18 2600:6 2600:10 2603:18 2607:15 2608:20 2609:16 2614:1 2703:12 2733:2, 2734:3 2734:21 2747:21 2775:6 adopting 2507:18 adoption 2491:21 2507:21 2598:4 adopts 2625:21 adults 2372:7 2596:19 2597:1, 2597:1 2597:4 2656:16 2749:19 Adv 2338:24 advance 2437:22 2605:14 2605:16 2640:22 2669:3 advanced 2474:14	2619:22 ADVANCES 2338:14 advancing 2466:22 2639:6 advantage 2517:21 advantageous 2587:11 advantages 2587:15 adverse 2662:25 2720:2 adversely 2372:22 advice 2353:12 2389:2 2418:14 2482:8 2482:18 2482:20 advise 2389:22 2418:2 2483:17 2483:18 advised 2481:13 advising 2483:15 advisory 2737:10 2777:3 advocacy 2592:16 2592:16 advocates 2329:13 2344:13 2354:6 2355:24 2481:3, 2509:5 2526:22 2527:18 2528:5, 2539:9 2539:17 2578:10 2621:25 2622:8 2653:17 advocating 2574:23 aerial 2430:21 2438:13 2542:18 2545:2 2545:25 2575:24 2580:7, 2605:2 2605:22 AERMOD 2723:3 affect 2759:23
--	---	---	---	--

Volume 8
9/29/2021

EIB Ozone Hearing

2769:8	2745:14	2473:12	2392:12	2720:17
affiliates	2754:21	2529:23	2408:17	2720:22
2333:2	2758:1	2559:20	2409:22	2720:23
affirm 2366:22	2758:17	2582:20	2410:19	2720:24
2371:9	2759:4, 2759:9	agreement	2410:20	2720:25
2489:17	2759:13	2350:12	2410:23	2720:25
2492:15	2759:16	2355:7	2411:8	2721:2, 2721:3
2496:17	2761:11	2423:15	2411:12	2721:10
2500:15	agency 2460:10	2447:21	2413:18	2722:16
2504:16	2460:11	2529:20	2413:19	2726:9, 2732:5
2508:15	2586:23	2529:22	2415:12	2733:12
2591:2	2678:9	2642:25	2431:5, 2434:6	2734:4
2650:11	2746:16	2758:24	2434:8, 2459:1	2734:23
2654:17	2752:1	ah 2637:24	2464:2, 2481:3	2736:7
2657:11	2754:23	ahead 2389:12	2493:13	2736:10
2661:17	agency's	2391:1, 2392:2	2493:19	2737:4
2743:3	2759:11	2393:17	2494:8	2737:10
affirmative	ages 2372:9	2402:11	2503:20	2737:14
2767:21	aggregate	2416:10	2509:13	2739:5
affirmed 2367:2	2618:11	2442:24	2509:16	2746:24
2371:13	ago 2375:21	2513:7	2509:24	2750:5
2387:7, 2428:3	2447:4, 2481:2	2515:13	2510:5, 2510:6	2752:14
2490:2	2483:23	2523:22	2516:11	2753:24
2492:19	2537:7	2560:15	2526:22	2754:10
2496:21	2658:22	2562:3, 2562:4	2527:18	2754:14
2500:19	2676:8, 2705:5	2576:24	2528:5, 2539:8	2755:9
2504:20	2737:13	2591:24	2539:17	2755:11
2508:19	2753:9	2621:16	2556:8	2755:12
2515:17	agree 2345:20	2637:11	2556:10	2755:19
2524:14	2347:15	2664:18	2573:7, 2573:9	2755:24
2537:12	2356:10	2665:24	2578:10	2756:15
2591:7	2380:7, 2389:6	2670:2	2593:23	2756:21
2637:14	2394:8	2706:25	2594:2	2756:23
2650:15	2441:24	2712:17	2594:15	2757:5, 2761:6
2654:21	2442:5	2717:2, 2717:4	2595:25	2764:22
2657:16	2445:22	2726:3	2596:25	2765:2
2661:21	2452:19	2728:13	2599:19	2765:13
2665:3, 2717:8	2467:18	2729:10	2600:6	2767:4, 2767:7
2743:8	2472:16	2739:7	2600:12	2767:19
2761:17	2482:8, 2484:7	2743:15	2603:17	2769:7
2774:20	2520:12	2744:1	2621:25	2769:10
afternoon	2521:4, 2557:3	ahold 2514:23	2622:8	2769:18
2481:12	2557:11	aid 2758:1	2622:14	2770:7, 2770:9
2488:5	2559:6, 2559:7	air 2329:13	2623:17	2771:24
2492:24	2570:15	2330:18	2626:20	2771:25
2517:2	2606:9	2331:4	2633:17	2771:25
2529:14	2610:24	2339:12	2640:25	2772:2, 2772:7
2529:15	2648:16	2339:23	2651:8	Airborne
2564:17	2676:5	2340:7	2651:24	2339:17
2577:10	2681:14	2340:14	2652:23	aircraft
2624:5	2705:3	2340:15	2653:19	2542:13
2635:16	2733:24	2344:12	2656:15	2543:14
2662:2	2735:24	2354:6	2658:22	2545:8, 2546:2
2760:10	2775:9	2355:18	2658:23	airplanes
2771:7	2775:16	2355:21	2663:17	2605:15
age 2596:19	agreeable	2355:24	2664:1	airway 2509:21
2728:8	2420:7	2368:1, 2369:1	2718:19	al 2338:9
2749:19	agreed 2349:3	2369:9, 2391:4	2719:23	2338:12
2749:20	2423:23	2391:6, 2391:7	2720:9	2338:15
agencies	2448:10	2391:8	2720:13	2338:18
2641:17	2455:24	2392:10	2720:13	2338:20

Volume 8
9/29/2021

EIB Ozone Hearing

2338:23	2639:12	amendments	2461:10	2530:23
2339:6	2755:20	2338:6	2464:11	2534:22
2339:10	2777:20	2513:20	2464:13	2536:4
2339:13	allowance	2558:20	2470:13	2562:12
2339:17	2448:6, 2524:3	America 2333:3	2476:17	2573:21
2339:19	allowed 2365:8	American	2521:9	2605:22
2543:5	2386:9	2340:18	2521:12	2614:9
2544:12	2386:10	2463:20	2542:5, 2573:3	2717:13
2545:19	2559:14	2498:18	2573:6, 2584:7	Anderson
2549:18	allowing 2472:7	2498:20	2592:18	2337:12
2551:13	allows 2385:3	2499:25	2592:19	2649:18
2551:23	2491:16	2509:25	2594:9, 2599:1	2656:22
2553:18	2605:18	2578:16	2599:3	2656:25
2554:10	2768:10	2606:18	2599:22	2656:25
2555:3, 2555:9	alluded 2422:19	2627:17	2601:25	2657:4, 2657:7
Alamos 2738:18	alternate	2627:24	2602:1, 2602:3	2657:8
albeit 2409:7	2444:15	2628:3	2603:5, 2610:1	2657:12
Albuquerque	2525:5	2628:10	2610:9, 2611:9	2657:15
2327:22	2667:11	2628:19	2611:13	2657:19
2327:23	alternative	Americans	2612:5	2660:20
2328:23	2404:4	2596:22	2612:11	Andrea 2365:23
2330:13	2432:12	2624:14	2612:20	2366:7
2367:10	2437:15	2624:17	2614:1	2373:24
2399:8, 2493:1	2437:18	2624:22	2617:15	ANDREW 2328:20
2509:1	2437:20	2625:24	2633:3, 2666:2	andrew.knigh...
2655:10	2437:21	2626:6	2666:4, 2666:7	2328:24
2663:23	2438:2, 2438:7	2626:14	2666:8, 2667:3	Andrews 2332:4
2753:21	2438:8	2626:17	2676:6	anemia 2727:25
2753:25	2438:22	2749:22	2678:12	animal 2725:2
2758:17	2439:1, 2439:3	2752:11	2681:17	animals 2660:12
2765:17	2439:9, 2462:1	2754:4	2681:23	Ann 2626:9
2767:5, 2767:7	2517:17	2762:23	2681:24	2716:3
Albuquerque-...	2524:4	ammonia 2411:16	2681:25	2749:23
2765:10	2526:25	amount 2368:10	2682:2, 2682:8	2763:8
alert 2713:19	2527:2, 2527:3	2430:18	2685:1, 2689:1	annual 2340:14
Alexander	2527:8	2608:19	2738:20	2453:21
2714:18	2527:12	2609:14	2754:11	2454:4
2714:20	2528:23	2645:21	2761:21	2454:11
align 2455:16	2605:19	2646:4	2778:7	2454:12
2474:4	2605:20	2672:11	2778:13	2526:9
2640:10	2705:17	2684:3	2778:14	2526:16
2641:12	2718:3	2686:13	analytics	2530:10
2641:18	alternatively	amounts 2540:22	2592:3	2530:17
2641:24	2429:25	amply 2754:19	2592:14	2553:5
2776:1	Alvarez 2338:9	Ana 2333:4	2629:11	2557:25
aligned 2433:11	2549:18	2516:2	analyze 2606:6	2558:11
2449:2, 2776:8	AMANDA 2328:6	ana.gutierre...	2606:23	2558:13
alleged 2758:12	amazing 2716:20	2333:7	2611:15	2567:9
2758:20	ambient 2718:19	analyses	2611:17	2567:21
alleging	2732:5	2391:11	analyzed	2568:3
2758:18	2733:12	2550:13	2604:12	2574:16
Allen 2339:19	2734:4, 2736:7	2590:8	analyzing	2574:17
Alliance	2736:10	analysis	2583:24	2602:17
2329:13	2737:14	2338:11	and/or 2347:3	2602:18
allow 2365:7	2767:19	2340:14	2348:17	2602:25
2376:23	2769:7	2346:1, 2357:4	2370:18	2603:3, 2604:1
2389:20	2769:18	2357:5	2370:21	2608:6
2401:5, 2423:5	2771:24	2360:25	2382:4	2608:14
2425:3, 2440:6	2771:25	2361:1	2454:21	2611:24
2477:6, 2527:1	amendment	2375:23	2478:1	2672:13
2527:3	2538:13	2454:8	2528:12	2673:5

Volume 8
9/29/2021

EIB Ozone Hearing

2673:15	2642:12	appearing	2380:21	appropriate
2688:17	anticipating	2400:25	2400:25	2346:4
2688:22	2530:2	appears 2350:9	2402:4	2348:22
2689:12	anybody 2360:16	2428:9, 2735:4	2402:21	2352:18
2689:15	2391:24	2757:9	2406:23	2353:7, 2360:3
2706:8	2630:11	Appendix 2339:5	2418:8	2381:1, 2382:9
2706:13	2658:18	apple 2353:4	2421:16	2385:22
2706:17	2695:3	2569:17	2453:18	2390:9
2707:6, 2707:6	2768:13	2569:19	2459:3, 2461:6	2394:10
2707:11	anybody's	apples 2569:16	2479:3	2397:2
2719:11	2711:13	2569:16	2479:10	2401:25
2723:18	anymore 2773:18	2604:6, 2604:6	2489:8, 2490:8	2421:5
annually 2432:2	anyone's	2700:2, 2700:2	2492:1	2421:20
2530:8	2354:15	applicability	2502:13	2425:2
2530:14	anyway 2424:13	2434:3	2505:2	2434:10
2572:24	2479:18	applicable	2507:25	2436:10
2593:23	2630:10	2353:11	2508:1, 2521:2	2437:23
2595:1	2631:20	2357:3, 2435:2	2522:9, 2528:7	2448:19
2595:18	2656:13	2445:8, 2446:2	2531:12	2449:18
2595:20	2782:1	2447:6, 2608:1	2535:9	2455:11
2596:1	apart 2703:15	2641:14	2564:18	2455:20
2598:10	API 2463:20	2765:22	2587:23	2473:14
2608:25	2463:23	application	2620:6	2475:13
2609:21	2464:6	2512:17	2634:17	2560:17
2609:25	2606:23	2593:20	2636:23	2561:18
2610:13	2607:5	applied 2646:2	2639:14	2575:18
2610:14	2607:20	2674:12	2640:5, 2702:1	2575:21
2644:2	2613:24	2764:21	2705:23	2575:22
2698:25	2675:14	2765:1	2738:14	2641:8
2706:8	2675:24	applies 2397:17	2751:7, 2771:9	2648:17
2719:14	2676:24	2533:7, 2584:4	2772:16	2709:8
anomalous	2677:11	2585:11	appreciation	2712:17
2580:6	2678:3	2634:5, 2752:8	2651:1	2733:22
2580:23	API's 2608:1	2757:11	approach 2352:7	2756:1, 2768:4
2581:9	2614:11	2757:15	2453:16	2776:9
answer 2377:1	2676:6	2759:13	2484:8	2776:12
2390:3, 2390:4	2676:25	2768:14	2527:19	2776:20
2401:24	2677:25	apply 2358:4	2531:7, 2544:5	2782:5
2413:6	apiece 2567:13	2358:7	2544:15	appropriately
2451:14	Apologies	2431:14	2545:2	2344:18
2461:14	2541:24	2556:12	2554:15	2419:1, 2518:4
2475:8	2542:1	2565:23	2570:2, 2723:8	approval
2475:11	apologize	2566:1	approached	2439:14
2514:4	2408:21	2585:16	2408:3	2439:15
2518:13	2629:22	2622:25	2617:18	2605:19
2521:11	2744:3	2623:19	approaches	2643:6
2532:6, 2532:7	app 2663:17	2641:8	2491:20	approve 2439:6
2563:20	Appalachian	2645:22	2507:21	approved
2564:4	2553:25	2669:6	2542:11	2399:11
2616:14	apparently	2686:19	2542:14	2437:24
2629:9	2774:6	2752:3, 2758:8	2542:16	2756:21
2711:18	appealable	2770:8	2544:1, 2545:5	approximately
answered	2460:7	applying 2397:5	2549:3, 2550:3	2518:24
2701:24	Appeals 2756:17	2647:23	2550:14	2520:22
answering	2761:15	2647:24	2552:15	2551:4
2474:20	2767:3	appointed	2570:23	2566:13
2535:7	appear 2350:21	2488:7	2571:1	2567:15
answers 2564:4	appearance	appreciate	2573:24	2604:12
2624:24	2398:22	2343:24	2583:21	2604:21
anticipated	2711:4	2350:15	2585:14	2606:24
2512:25	appeared 2770:3	2369:13	2585:14	2607:22

Volume 8
9/29/2021

EIB Ozone Hearing

2622:12	2424:15	2582:11	2600:3, 2606:2	2520:16
2624:12	2425:7	2588:2	2621:5	2520:17
2652:10	argument	2600:12	2645:24	2521:5, 2570:3
2749:18	2350:18	asking 2344:11	2647:20	2572:14
Apr 2338:14	2350:20	2345:23	2648:2	2614:4
April 2543:19	2351:9	2347:9, 2384:2	2670:10	assure 2733:10
2649:18	2352:14	2472:2	2670:11	2733:11
AQCC 2600:13	2353:3, 2353:5	2472:14	2671:21	assuring
area 2362:10	2374:11	2474:25	2671:22	2768:19
2369:4, 2401:6	2381:12	2475:1	2671:24	asterisk 2635:5
2409:22	2418:23	2483:10	2685:3	asthma 2495:11
2409:23	2424:7	2483:11	2685:15	2509:17
2503:2, 2503:7	2424:11	2483:13	2696:21	2509:21
2527:18	2424:13	2491:15	2700:24	2597:1
2527:21	2424:21	2495:14	2722:25	2626:21
2530:4, 2530:7	2425:4, 2425:6	2614:24	2725:5	2651:11
2573:20	2425:12	2616:6, 2627:4	2726:14	2655:9
2577:18	2425:13	2648:18	2727:9	2655:12
2630:20	2426:3	2690:11	2727:15	2720:3
2630:23	2427:10	2705:17	2727:15	ATMOS 2338:19
2690:22	2485:9	2707:13	2738:22	atmosphere
2713:23	2560:25	2733:21	2754:4	2547:7, 2592:9
2725:22	2562:1, 2567:2	2734:12	Association	2595:1
2735:23	2781:21	aspect 2397:22	2329:2, 2332:2	2595:17
2770:9	argumentative	2529:18	2332:14	2598:9
areas 2393:14	2615:2	aspects 2392:16	2341:3	2610:12
2395:24	arguments	aspiration	2399:21	2626:4
2396:1, 2396:8	2352:13	2373:4	2400:24	2719:18
2396:11	2386:8	assert 2394:23	2501:5, 2501:6	2736:22
2397:20	2419:20	2520:2	2509:25	2737:1
2398:3	arises 2759:3	assertion	2529:17	atmospheric
2510:13	Arizona 2329:5	2552:7	assume 2405:16	2736:15
2524:1, 2524:5	2415:9, 2545:7	2571:14	2447:3, 2464:7	2736:18
2525:7, 2528:3	2658:2	2587:2, 2628:6	2485:16	attached 2338:3
2530:5	arose 2765:16	assertions	2549:9	2348:9
2530:13	ARREGUIN	2572:10	2549:10	2352:16
2530:13	2327:21	asserts 2552:3	2566:23	attacks 2495:11
2600:15	2783:6	assess 2542:8	2567:2	attainment
2600:25	arrive 2647:7	2597:6	2571:18	2472:8
2623:20	2684:4	Assessment	2621:8	2718:19
2626:4	art 2655:5	2338:9	2640:21	attempt 2532:17
2658:20	2655:5	assign 2755:20	2701:1	attempted
2708:25	Artesia 2658:20	assist 2375:3	2733:14	2433:8
2719:16	article 2761:12	2678:13	assumed 2397:24	attempting
2720:16	articles	assistance	2602:13	2384:20
2736:9	2747:22	2757:12	2602:18	2475:19
2746:20	articulate	2757:14	2602:21	2476:17
2747:10	2448:17	2757:17	2602:21	attempts
2772:1	articulated	Assistant	2603:2	2354:14
2779:23	2459:11	2328:11	2603:25	attend 2750:15
argue 2349:8	artificially	2328:16	2607:16	2750:23
2349:19	2726:2	2328:21	2699:7, 2699:8	attendee
2353:8	aside 2426:13	ASSOC 2339:12	2722:2	2406:14
2353:10	2448:9	associated	assuming 2568:5	2478:23
2423:24	asked 2413:4	2379:1	2574:16	2521:23
2425:3	2414:18	2380:10	2702:10	2531:18
2425:22	2474:18	2428:22	assumption	2581:25
2426:1, 2427:6	2484:19	2433:6, 2437:2	2607:8	2627:5
argued 2457:25	2530:8	2518:9, 2552:6	2628:22	2695:25
arguing 2349:21	2530:12	2595:21	assumptions	2738:4
2423:9	2563:23	2599:22	2520:13	2770:21

Volume 8
9/29/2021

EIB Ozone Hearing

2780:6	2759:3	2604:17	2559:9, 2561:1	Baake 2329:19
attendees	2767:16	2604:21	2561:7, 2561:8	2329:19
2342:3	2767:20	2619:15	2562:15	2335:11
attention	2769:3	2631:19	2562:25	2402:7, 2402:9
2503:25	2769:17	2645:10	2563:3, 2575:2	2402:10
2559:11	authorization	2645:12	2575:4, 2575:6	2402:12
2662:8	2755:14	2645:13	2575:14	2402:15
attorney	authorized	2645:23	2575:20	2404:12
2328:11	2778:3	2646:2, 2646:3	2575:22	2404:22
2328:11	authorizes	2646:5, 2646:8	2641:12	2405:10
2329:15	2440:8	2668:2, 2668:3	2709:3	2405:23
2330:11	2779:21	2668:3, 2668:5	2775:25	2405:25
2331:18	authors 2564:25	2668:20	2776:2, 2776:5	2416:25
2398:22	2572:18	2668:22	2776:7	2417:4, 2417:4
2577:12	2682:5	2669:21	2776:13	bachelor
2746:15	availabilities	2669:22	2776:17	2391:14
2746:22	2711:11	2670:9	avoid 2354:12	bachelor's
2755:7	availability	2670:13	2418:14	2592:6
2755:10	2421:18	2670:20	2424:21	2745:25
2755:17	2635:10	2671:10	2425:12	back 2346:21
2764:14	2711:4, 2711:6	2679:10	2427:4	2364:10
2764:20	2711:21	2679:12	2427:10	2364:14
2767:1	available	2679:21	2495:1, 2519:3	2364:16
2783:10	2360:16	2679:22	2540:8	2374:1
2783:13	2401:23	2696:17	2640:12	2374:14
attorney-client	2417:10	2696:22	avoidable	2378:17
2766:20	2421:9	2697:3, 2697:6	2494:25	2378:18
attract 2507:11	2506:13	2697:15	2555:13	2378:19
attributable	2514:3, 2531:5	2697:17	2641:18	2388:8, 2390:3
2686:6	2542:25	2697:18	avoided 2424:11	2390:4
attributed	2615:21	2697:21	AVOs 2527:11	2390:12
2463:13	2617:7	2697:21	2574:20	2392:7
audiences	2628:15	2699:8	2574:23	2393:18
2748:5	2635:9	2724:22	2575:7, 2575:8	2394:13
audio 2366:5	2635:15	2726:16	2575:17	2394:25
2429:21	2645:3	2726:21	2641:15	2395:1, 2395:3
2488:25	2645:17	2732:21	2641:21	2395:15
2527:7	2667:23	2740:9	2641:24	2396:13
2576:21	2678:12	averages	2691:1	2397:17
2649:21	2711:5, 2711:8	2543:10	2704:25	2397:19
2705:7	2711:9	2543:11	2705:1, 2705:2	2417:14
2717:22	2711:13	2607:20	2709:6, 2709:9	2421:6
Aug 2339:12	2713:18	2646:11	2709:13	2422:10
2340:6	2716:5, 2716:6	Aviation	awake 2487:16	2422:14
August 2546:2	2716:14	2542:19	aware 2347:21	2422:16
aunts 2651:8	2758:12	2543:13	2363:11	2433:16
Austin 2332:18	2760:5	AVO 2429:22	2501:18	2435:19
2592:7	Avenue 2328:22	2430:5	2571:10	2460:9
author 2572:16	2329:16	2431:18	2574:25	2466:16
2747:19	2332:17	2431:21	2575:1, 2611:3	2468:21
authorities	2333:18	2435:5	2625:13	2469:4, 2472:5
2745:15	2753:6	2435:12	2767:3	2473:2, 2473:6
2757:6, 2757:8	average 2551:14	2435:14	2770:13	2474:10
2759:2	2551:17	2435:22	axis 2722:3	2474:17
authority	2574:18	2450:21		2477:13
2439:15	2578:19	2451:24		2480:23
2458:21	2578:22	2456:12		2482:4
2458:25	2599:24	2456:22		2482:17
2754:8	2603:15	2457:7, 2527:8	B-A-R-N-E-S	2487:11
2754:17	2603:22	2527:14	B-R-E-N-D-A	2487:14
2754:22	2604:3	2559:3, 2559:8	2650:7	2488:3, 2492:5

2512:7, 2512:9	2709:10	2589:24	2338:15	2567:11
2534:4	balancing	2596:10	2338:21	2568:3, 2590:7
2576:10	2475:25	2600:9, 2603:1	2338:24	2606:11
2576:13	balloon 2651:24	2603:21	2339:23	2607:5
2577:16	bar 2353:25	2606:17	2409:1, 2409:5	2614:22
2582:10	2368:21	2610:9	2528:10	2619:3
2629:24	2375:1, 2494:5	2614:17	2542:7, 2543:4	2619:17
2632:23	Barnes 2336:6	2626:11	2550:10	2644:23
2632:24	2488:22	2629:2	2554:1	2647:19
2635:18	2508:6, 2508:9	2633:21	2564:22	2668:24
2636:10	2508:12	2675:14	2568:1, 2568:7	2670:6
2636:18	2508:16	2676:8	2569:8	2673:14
2637:1	2508:18	2678:20	2569:21	2674:10
2658:13	2508:24	2678:23	2580:9	2674:11
2658:14	2508:25	2684:6	2646:25	2674:12
2660:21	2510:22	2698:24	2646:25	2676:19
2664:14	barrel 2553:21	2699:3, 2718:6	2681:3, 2681:3	2681:20
2669:12	2671:24	2733:17	2681:5, 2681:9	2697:11
2672:23	2671:25	2739:13	2684:3	2707:6
2687:7	barrels 2431:17	2739:20	2686:24	2707:11
2688:21	2431:20	2746:8, 2750:9	2687:2, 2687:3	2709:12
2693:7	2553:23	2756:6	2690:5, 2698:1	2709:13
2693:10	barrier 2631:2	2761:19	2698:2, 2699:4	2733:18
2693:12	BARRY 2328:7	2761:25	2699:6	batteries
2693:21	base 2522:8	2762:9, 2775:5	2699:13	2432:1
2698:17	2615:7, 2633:2	2775:22	2700:12	battery 2701:8
2701:3	2686:23	2776:7	basin-level	BB 2591:16
2710:19	2686:24	2779:13	2607:20	bcurtis@jhj1...
2716:10	2698:3, 2698:4	baseline 2596:7	basins 2461:22	2329:7
2723:13	2776:9	bases 2552:7	2548:1	bear 2333:21
2739:18	based 2344:24	2666:4	2554:11	2513:2
backed 2358:11	2347:10	basic 2360:11	2580:11	2690:11
2358:12	2352:14	2368:12	2596:11	2744:2
background	2364:24	2467:16	2668:11	Beatty 2333:22
2340:5	2377:16	2520:15	2680:23	beautiful
2340:11	2384:6, 2384:7	2652:13	2681:7, 2684:4	2656:9
2497:5	2385:16	basically	2699:7	bed 2454:24
2582:13	2394:3, 2403:9	2348:23	2699:25	2455:1, 2455:4
2592:5	2414:18	2353:3, 2353:4	basis 2342:24	2455:12
backstop	2415:15	2412:9, 2423:5	2345:25	2469:24
2445:25	2420:10	2450:22	2376:10	2470:2, 2641:2
backup 2657:24	2431:1	2460:2, 2534:4	2382:6	2742:7
backyards	2432:17	2561:1, 2565:8	2384:14	2781:19
2368:18	2441:14	2565:19	2418:12	beef 2361:22
bad 2414:7	2453:16	2638:11	2430:21	beginning
2523:17	2454:16	2652:5	2433:15	2413:15
2523:18	2459:8	2655:13	2435:8	2428:10
2529:4	2461:21	2670:18	2435:18	2428:11
2535:19	2509:1	2676:14	2440:11	2481:21
2535:22	2540:16	2680:8, 2680:9	2451:6, 2451:8	2482:1
2659:1, 2659:4	2544:19	2684:2, 2688:6	2451:23	2526:16
2664:1	2544:20	2688:7, 2690:9	2453:20	2696:12
2731:15	2549:8	2691:12	2455:10	2746:13
Baker 2332:10	2550:14	2692:10	2468:22	2774:24
balance 2396:25	2551:16	2699:11	2472:7	behalf 2353:20
2475:20	2552:13	2703:5	2526:13	2367:10
2475:24	2553:10	2722:23	2533:20	2398:19
2476:18	2554:20	2729:18	2534:20	2398:22
2476:21	2563:2, 2569:2	2732:24	2550:24	2516:2, 2537:4
2542:18	2569:11	2739:9	2560:17	2538:2
2569:1	2572:5	basin 2338:13	2561:16	2661:13

Volume 8
9/29/2021

EIB Ozone Hearing

2662:6	2582:21	2593:15	2471:15	2449:7
2663:13	2584:24	2634:1	2472:18	2449:21
2744:7, 2744:7	2589:5, 2589:9	2718:25	2561:18	2450:2, 2450:9
2744:9	2590:15	2719:2	2631:15	2450:14
2766:17	2600:11	2757:20	2678:1	2450:18
behaviors	2614:20	2759:11	2713:12	2450:25
2502:24	2614:23	BENJAMIN 2328:8	2733:7	2451:6
belabor 2447:24	2615:25	benzene 2495:6	2733:15	2451:12
2694:17	2616:18	2556:8	2734:5, 2734:9	2451:25
belief 2464:21	2618:3	2720:20	2755:3, 2757:5	2452:6
believe 2342:3	2618:16	2720:21	bias 2574:15	2452:12
2353:16	2632:8	2721:4, 2721:7	biassing	2452:18
2353:24	2635:15	2721:8, 2721:9	2574:11	2452:22
2361:11	2637:7	2721:13	big 2457:8	2453:10
2361:24	2641:12	2721:17	2630:6, 2656:3	2453:24
2372:3, 2375:1	2659:18	2726:9	2659:3, 2659:8	2454:5
2378:24	2660:25	2726:11	2659:24	2454:13
2381:11	2666:2, 2666:7	2727:2	2687:14	2455:4
2385:22	2674:25	2727:16	2687:19	2455:13
2389:20	2675:19	2727:21	2687:19	2455:21
2401:4, 2416:7	2677:18	2728:6	bigger 2701:19	2456:5
2417:5	2678:8, 2691:4	2730:12	biggest 2411:24	2456:17
2417:11	2693:15	2739:2, 2740:9	2506:23	2456:22
2438:21	2714:22	2740:10	2585:25	2457:4, 2457:9
2440:25	2717:12	2747:2	Bill 2759:7	2457:15
2449:14	2731:1, 2731:4	Berkeley 2630:9	2759:15	2458:4
2450:5	2731:4, 2731:8	Bernalillo	billion 2491:7	2458:10
2451:10	2737:18	2493:2	2491:8	2459:6
2453:21	2737:19	2650:24	2737:16	2459:13
2455:8, 2458:8	2741:21	2754:1, 2783:3	billions 2368:7	2459:24
2459:4, 2465:4	2752:3	best 2354:16	bills 2659:25	2460:5, 2461:3
2466:11	2765:16	2484:18	BIPOC 2493:18	2461:13
2470:1, 2472:1	2767:6	2507:18	2495:3	2465:1, 2466:3
2474:8	2767:11	2532:6, 2532:6	bis 2499:3	2467:10
2477:12	2773:23	2549:20	Bisbey-Kuehn	2470:1, 2470:8
2477:12	2780:25	2643:21	2335:12	2470:11
2481:3, 2481:9	believed	2645:3, 2658:1	2337:23	2471:5
2482:22	2677:12	2660:1	2427:21	2471:24
2484:6	believes 2356:8	2724:24	2428:1	2472:14
2485:19	2357:2	bet 2631:14	2428:16	2472:25
2486:3, 2492:4	2410:22	2631:14	2429:14	2473:10
2506:21	2476:9	better 2340:19	2431:9	2475:18
2507:8	2476:10	2365:9	2432:20	2476:3
2507:20	2476:14	2375:15	2434:1	2476:23
2512:15	2775:7	2426:9	2438:17	2477:10
2512:15	belonging	2466:25	2438:24	2477:18
2512:21	2749:16	2468:3	2441:2, 2442:4	2478:3, 2478:8
2515:7, 2515:9	beneath 2753:10	2480:16	2442:9	2774:18
2519:10	2753:17	2498:17	2442:14	2775:3
2520:16	benefit 2419:19	2512:8	2442:17	2775:15
2525:3, 2530:8	2442:25	2547:17	2442:21	2776:4, 2777:6
2530:20	2519:5	2581:15	2443:17	2777:9
2536:25	2558:18	2636:12	2444:2, 2445:4	2777:13
2553:22	2560:10	2636:15	2445:12	2777:18
2556:11	2589:19	2643:22	2445:20	2777:25
2561:12	2688:2, 2741:5	2643:23	2446:4	2778:4
2562:8, 2563:3	benefits 2348:2	2666:23	2446:15	bit 2345:13
2566:1	2356:9	2675:9	2447:11	2347:7
2569:11	2491:10	beyond 2463:18	2448:8	2350:25
2575:8	2550:5	2464:2, 2464:9	2448:14	2392:25
2582:20	2550:17	2470:23	2448:25	2395:22

Volume 8
9/29/2021

EIB Ozone Hearing

2421:25	2740:18	2378:2, 2381:2	2521:21	2779:9
2445:6	2773:13	2382:12	2523:24	2779:22
2463:16	2773:14	2384:16	2524:8, 2526:6	2780:5
2483:12	2780:21	2384:22	2531:16	Board's 2352:3
2486:13	2780:22	2384:23	2531:22	2353:13
2486:19	black 2407:7	2385:21	2558:18	2364:25
2491:12	2502:1	2388:17	2563:24	2388:19
2553:2, 2562:9	blah 2424:12	2388:23	2581:24	2389:3, 2418:9
2564:19	bleed 2370:5	2389:1, 2389:5	2582:4	2423:7
2568:18	2503:15	2389:15	2592:11	2424:15
2570:15	2653:15	2389:22	2599:20	2427:9, 2433:9
2571:13	Blewitt 2741:18	2397:16	2608:20	2433:22
2572:20	2741:21	2405:8	2609:16	2453:14
2574:19	2774:7	2406:12	2611:13	2471:22
2574:21	Blewitt's	2406:17	2614:5	2472:3
2579:19	2416:16	2414:19	2625:11	2475:20
2582:15	BLM 2412:15	2414:21	2627:3, 2627:4	2481:10
2582:17	blocks 2495:8	2418:2, 2418:5	2627:8	2516:25
2595:8, 2607:1	blood 2727:9	2420:2	2636:12	2666:5
2614:5	2727:24	2420:20	2639:8, 2639:8	2734:14
2634:13	2727:24	2421:4, 2423:7	2649:16	2734:24
2643:16	blow 2631:17	2423:11	2651:2, 2662:2	2757:7
2649:6	blows 2630:13	2425:5, 2425:6	2662:7	2777:16
2657:23	blurred 2728:4	2426:15	2671:17	boards 2374:20
2666:10	board 2327:1	2426:18	2675:3	2745:15
2666:24	2328:4	2426:22	2692:13	2759:17
2671:21	2335:11	2426:24	2695:22	2759:22
2700:9	2336:12	2427:5	2696:3	2760:4
2700:23	2336:16	2427:14	2709:17	2760:12
2716:23	2336:21	2427:20	2709:25	2782:8
2718:24	2337:6, 2337:7	2428:7	2710:3, 2711:2	Bob 2630:12
2721:22	2337:19	2432:16	2712:5	body 2499:10
2726:5	2337:22	2433:21	2713:19	2499:11
2735:23	2340:15	2443:1, 2444:8	2714:4, 2718:2	2658:15
2736:5	2344:23	2444:21	2720:19	2761:13
2736:10	2345:5, 2345:8	2458:20	2729:13	bogged 2562:1
2736:13	2345:12	2459:5, 2464:4	2733:21	Bolander
2737:2	2345:23	2466:20	2734:20	2559:18
2738:15	2347:25	2466:21	2738:3, 2738:8	2560:4
2745:20	2348:1	2470:24	2741:5, 2754:8	2562:15
2765:15	2348:10	2472:3	2754:12	2562:23
2769:9	2351:24	2477:25	2755:20	bolting 2532:23
bite 2353:4	2352:20	2478:21	2756:16	book 2747:18
Bitzer 2328:7	2353:12	2481:20	2756:21	books 2394:16
2412:25	2353:20	2481:25	2756:24	2394:19
2413:1, 2413:8	2353:24	2482:18	2761:7, 2762:8	boosting 2432:6
2479:14	2356:16	2482:20	2762:11	2442:3, 2474:6
2479:15	2365:12	2483:1	2762:15	2520:5
2522:18	2365:22	2483:16	2765:13	2579:16
2522:19	2366:1	2488:7	2767:7	2579:21
2536:10	2367:19	2488:12	2767:16	2579:24
2536:11	2374:6	2488:25	2767:20	2609:3
2588:1, 2588:2	2374:11	2491:15	2768:1, 2768:4	2609:15
2630:3, 2630:4	2374:19	2493:4, 2501:1	2768:10	2610:3, 2610:8
2630:9, 2631:7	2374:21	2505:1, 2514:2	2768:24	2610:10
2702:4, 2702:5	2375:3, 2376:4	2514:15	2769:3	2644:3
2702:13	2376:7	2516:8	2769:16	2646:22
2702:19	2376:21	2516:23	2770:11	2647:3
2702:21	2377:6	2517:3	2770:20	2648:24
2702:24	2377:19	2519:12	2771:2	2678:17
2703:17	2377:21	2521:10	2777:11	2678:19

Volume 8
9/29/2021

EIB Ozone Hearing

2678:22	2427:1	2632:22	2499:14	2616:12
2679:19	2480:22	2643:10	2499:14	2617:10
2680:24	2486:16	bringing	2499:18	2618:7, 2633:5
2683:4, 2683:8	2487:21	2394:25	2499:22	2647:22
2683:15	2488:4, 2576:6	brings 2372:6	2499:23	2647:25
2685:22	2576:7, 2576:8	broad 2409:15	2507:3, 2507:5	2669:7, 2670:6
2686:10	2576:14	2415:8	businesses	2672:15
2689:19	2636:4, 2636:9	broaden 2747:8	2447:5, 2447:7	2674:3
2692:17	2636:15	broadly 2623:20	2491:3	2674:24
2692:18	2636:18	broken 2454:15	2498:23	2681:10
2697:5, 2697:6	2637:2, 2693:2	2555:6	2499:1, 2499:6	2687:6, 2688:1
2706:17	2693:11	2704:22	2499:8, 2499:9	calculations
border 2407:15	2704:22	bronchitis	2499:11	2519:21
born 2505:7	2742:11	2509:17	2499:15	2520:13
bottom 2453:9	breaking	brought 2401:5	busy 2401:1	2521:5
2473:19	2421:25	2401:12	butcher 2565:4	2555:15
2474:1	2743:23	bucket 2601:3	Butzier 2332:21	2599:13
2679:24	breaks 2518:15	2601:15	2715:21	2615:25
bottom-up	2518:24	2618:13	2715:22	2617:22
2550:14	breathe 2368:1	buckets 2601:7	buying 2685:6	2642:13
2552:14	2509:14	Buckingham	by-product	2645:2
2585:14	2510:5, 2651:9	2756:15	2662:21	2648:15
2596:13	2728:21	2761:6		2672:21
Botts 2332:10	2731:13	2761:14	C	2675:22
Boulder 2330:4	breathing	2770:2		2678:4
2391:17	2652:23	budget 2368:7	C.(1 2435:4	2692:14
Boulevard	2664:1, 2722:2	2491:8	C.A.R.E 2329:12	2707:3
2327:22	2723:15	2507:12	C.C.R 2340:7	calibrated
boundaries	2770:7	budgets 2497:22	C.F.R 2340:12	2436:16
2625:9	2772:21	2499:4	CAA 2715:3	calibration
boundary 2540:3	Brenda 2337:8	build 2506:18	cabinet 2759:22	2436:15
2597:15	2649:17	2653:1	2760:4	California
2597:19	2650:6, 2650:7	building 2495:8	2760:11	2334:6
2597:24	2650:14	2527:22	calculate	2340:15
2597:25	2650:22	buildings	2486:8, 2602:8	2393:12
2598:21	Brian 2335:12	2749:6	2615:25	2599:19
2601:20	2337:23	2749:10	2618:2	call 2367:18
2620:24	2427:22	2763:7	2668:22	2374:8, 2399:5
2629:12	2428:1	built 2414:25	2669:22	2484:13
box 2330:20	2774:18	2533:6	2679:11	2488:11
2331:5, 2332:5	brief 2349:5	2534:13	2680:4, 2682:6	2488:19
2332:23	2388:7	2698:15	2683:4	2493:7
2761:24	2402:12	2698:16	2683:17	2510:12
boy 2630:9	2419:1, 2424:2	bump 2719:14	2683:22	2512:25
2658:23	2426:15	burden 2497:11	2684:13	2562:17
BP 2659:18	2455:18	burdening	2684:22	2649:20
Bracewell	2517:12	2499:22	2692:11	2651:5
2332:16	2592:11	burdensome	calculated	2671:22
Bradley 2604:12	2649:22	2642:7	2553:16	2703:4
2604:20	briefing	bureau 2340:18	2593:10	2782:20
BRANDON 2329:3	2426:10	2459:19	2645:1, 2645:8	call-in 2370:13
break 2383:7	2426:11	Bureau's	calculating	2370:18
2386:11	briefly 2357:18	2627:17	2615:6	2370:21
2390:2	2362:6	burned 2580:19	2615:17	2495:23
2416:19	2378:20	burning 2547:13	2668:24	2496:1
2416:20	2402:7	business 2358:6	2692:4	called 2364:2
2420:8	2447:15	2497:9	calculation	2414:24
2421:24	2483:11	2497:12	2434:17	2415:3, 2497:3
2422:5, 2422:8	2560:9, 2737:7	2498:22	2540:15	2509:5, 2511:6
2422:15	bring 2466:16	2498:22	2599:15	2545:4, 2545:8
2422:16	2559:20	2499:3, 2499:5	2616:7, 2616:9	2545:8

Volume 8
9/29/2021

EIB Ozone Hearing

2548:15	2766:24	2670:20	causing 2580:24	2744:15
2721:25	capture 2527:6	2691:19	2642:10	2748:20
2723:3, 2723:8	2527:10	2747:18	caveat 2418:20	2748:21
2736:12	2533:19	2754:15	2517:20	2764:15
Caller 2370:15	2534:12	2754:19	Cavern 2409:16	Centers 2340:19
2370:17	captured 2342:3	2754:24	Caverns 2392:9	centrifugal
2370:20	car 2660:13	2755:5	2409:23	2570:21
2374:1, 2374:2	2660:15	2756:14	2413:19	CEP 2630:14
2495:24	CARB 2340:15	2756:17	CC 2340:15	certain 2343:1
2495:25	2599:20	2761:5	2591:16	2375:18
2653:25	2599:21	2761:13	2591:18	2381:13
2654:2, 2654:3	carbon 2396:20	2761:25	ccolclasure@...	2382:11
2654:4	2542:19	2765:1, 2765:8	2333:25	2415:1, 2415:5
2656:20	2545:8	2765:16	CCP 2341:6	2418:11
2656:21	2545:25	2766:24	2341:7, 2343:1	2423:3, 2430:8
2659:9	2580:8, 2652:1	2767:3, 2767:7	2347:4, 2351:1	2431:12
2660:21	care 2372:23	2770:2, 2770:3	2351:6, 2375:4	2439:16
2660:23	2505:25	2772:8	2743:20	2439:16
calling 2365:21	2509:3, 2509:5	2774:13	2748:25	2452:11
2578:10	2509:7	cases 2374:25	2749:3	2452:15
2621:25	careful 2782:7	2706:22	2750:20	2454:23
calls 2427:21	carefully	2754:3	2752:17	2454:23
camera 2398:10	2351:4	CASEY 2333:12	2763:4	2486:20
2430:3, 2430:4	caring 2503:17	casings 2555:10	CCR 2327:21	2498:24
2478:18	Carlisle	catalyst 2658:8	2783:18	2640:1, 2670:7
2514:12	2327:22	catch 2629:23	ccs@modrall.com	2679:7
2521:19	Carlo 2723:8	2704:5, 2704:6	2332:25	2686:13
2523:13	2725:12	2704:9	CDC 2627:21	2690:18
2529:10	Carlsbad 2392:9	categorically	cdesaillan@n...	2691:14
2576:23	2398:3	2458:20	2331:21	2725:5, 2725:5
2607:13	2409:16	categories	CDPH 2728:22	certainly
2607:19	2409:22	2394:22	CDPHE 2599:4	2343:24
2685:6	2409:22	2400:12	2722:15	2345:4
2695:21	2413:19	2484:24	2728:16	2349:19
2709:21	2414:7	2565:18	2728:22	2351:5
2770:18	2658:21	2669:14	2741:6	2351:19
cameras 2430:13	carry 2532:14	categorized	ceiling 2396:19	2353:20
2441:14	cars 2351:19	2554:19	2403:25	2354:8
2541:2	carve 2385:16	2565:17	cell 2499:10	2354:10
2575:24	CASAC 2737:11	category	2638:11	2361:16
campaign 2542:6	2737:12	2392:23	2680:8	2361:25
2721:11	cascade 2686:22	2400:1, 2485:5	cells 2499:10	2362:17
Canada 2658:10	cascades	2554:19	sensor-based	2385:20
cancer 2499:15	2638:19	2620:4	2527:6	2388:5
2651:12	case 2345:12	Cates 2328:7	censors 2605:22	2389:25
2720:21	2351:11	2412:24	Census 2340:18	2415:23
2721:5, 2725:4	2356:16	2479:13	2627:17	2416:10
2725:4	2362:25	caught 2630:8	Center 2329:15	2613:10
2725:10	2363:13	cause 2436:4	2330:7	2628:4
2727:8, 2729:1	2363:16	2460:6	2331:17	2634:18
2734:19	2368:3, 2374:9	2540:25	2331:19	2635:15
2734:21	2376:13	2663:21	2341:5, 2539:9	2665:23
2740:11	2397:18	2691:6	2539:18	2684:7
2754:4	2404:4, 2447:9	2720:21	2577:13	2708:15
cancers 2626:21	2478:20	caused 2429:4	2577:20	2711:3, 2714:1
Canyon 2407:7	2483:25	2535:13	2578:9	2734:10
cap 2706:8	2505:16	2594:1	2621:24	2734:16
capable 2427:7	2511:18	2662:25	2624:7	2735:10
capacity 2435:7	2566:25	causes 2651:11	2627:21	2742:10
2435:17	2645:1	2687:19	2736:3	2770:6
2766:23	2664:13	2720:6	2744:10	2781:21

Volume 8
9/29/2021

EIB Ozone Hearing

2782:4 certainty 2473:4, 2750:3 2763:9 certify 2783:7 cetera 2433:21 2555:6, 2634:4 2645:15 2645:25 CFR 2340:6 chain 2338:10 2548:9 2584:15 2639:21 Chair 2328:5 2328:6 2375:16 2377:22 2406:18 2406:20 2407:2 2407:16 2408:14 2409:9, 2410:5 2410:7 2419:23 2420:15 2421:11 2421:14 2421:14 2427:19 2478:25 2479:1, 2490:9 2504:25 2517:3, 2522:1 2522:3 2523:24 2531:23 2531:25 2531:25 2582:5, 2582:7 2582:24 2588:3, 2627:9 2627:10 2627:20 2627:23 2628:7 2628:16 2628:23 2629:14 2632:18 2632:19 2632:20 2633:7, 2633:9 2633:12 2634:6 2634:10 2634:16 2634:19 2639:8, 2696:4 2696:6	2710:11 2710:12 2711:1 2711:18 2711:20 2712:9 2712:22 2738:9 2738:11 2739:16 2740:12 2771:3, 2771:5 2771:12 2771:21 2772:10 2773:2, 2773:4 2780:9 2780:10 challenge 2767:4 challenged 2666:3 challenges 2409:3, 2518:9 2628:2, 2628:9 2678:16 2724:2 challenging 2375:7 2385:20 chance 2372:17 2419:14 2443:19 2472:4, 2715:6 2725:3, 2725:4 2725:10 2740:11 change 2369:9 2372:3 2372:11 2372:13 2373:16 2383:16 2458:3, 2461:1 2473:8, 2475:4 2493:19 2502:10 2502:23 2503:20 2529:19 2529:22 2529:23 2530:1, 2530:5 2535:17 2638:18 2639:14 2640:5, 2648:3 2652:9 2662:16 2662:24 2674:20	2686:21 2686:21 changed 2364:10 2364:15 2393:4, 2400:8 2530:14 2530:21 2690:16 2698:6 2700:14 changes 2361:15 2364:9, 2417:7 2422:24 2429:6 2445:17 2445:18 2472:24 2474:3 2516:18 2516:20 2520:3, 2528:7 2631:3 2648:20 2664:7 2668:25 2735:5 2744:13 2744:23 2748:6 2748:22 2762:12 2762:18 2771:22 changing 2361:13 2364:6 2586:17 2687:16 2701:9, 2772:4 chaos 2372:7 Chapter 2651:20 character 2700:14 2756:2, 2756:5 2756:8 2756:20 2756:25 characteristics 2554:17 characteriza... 2344:2 2385:21 characterize 2534:9 characterized 2778:7 charitable 2344:1 charitably 2356:17 Charles 2331:18	2577:11 2736:2 2764:13 chart 2519:8 2608:18 chat 2366:3 2405:24 2406:1 2406:15 2410:13 2422:20 2478:24 2488:15 2488:16 2510:24 2521:25 2531:20 2582:1, 2627:6 2649:20 2696:1, 2738:6 2740:16 2770:23 2780:8 chat's 2406:6 check 2460:9 2480:15 2616:15 2643:14 2663:24 2709:20 checked 2761:24 checking 2635:14 2685:9 checks 2436:23 CHEM 2338:19 Chemical 2602:23 chemistry 2736:15 Cheryl 2327:21 2342:9 2387:24 2388:8 2636:16 2643:18 2716:24 2783:6 Chevron 2753:16 Chief 2331:3 2662:4 child 2367:25 2663:19 2742:7 children 2369:2 2372:20 2372:24 2493:14 2498:17 2501:25 2503:18	2509:20 2596:18 2651:9, 2655:8 2655:12 2655:19 2656:10 2656:16 2662:11 2720:5 2749:18 Chile 2392:13 2413:20 Chili 2365:24 2370:12 2373:25 China 2498:3 2659:5 chlorinated 2753:7 choice 2415:23 2451:23 choices 2647:23 choose 2510:2 2651:12 chose 2375:19 2612:15 2658:9 chosen 2629:6 CHRISTINA 2332:21 CHRISTOPHER 2333:11 2333:22 chronic 2597:2 chunks 2660:5 church 2505:5 2505:12 2507:6 circle 2631:5 2724:12 2724:18 Circuit 2756:17 2761:15 2761:15 2761:23 circular 2630:15 circulated 2442:12 2444:21 circumstance 2531:9 circumstances 2437:8 2439:16 2756:1 Cisco 2327:14 cited 2432:23 2433:19 2465:23 2467:14
--	--	--	--	--

Volume 8
9/29/2021

EIB Ozone Hearing

2471:7 2619:14 cities 2392:13 2414:7 citing 2572:12 citizen 2368:6 2372:2, 2497:9 2497:24 citizens 2329:13 2499:24 City 2392:13 2413:20 2413:23 2758:17 2767:5 Civic 2330:7 2341:5, 2539:9 2539:18 2624:7 2744:10 2744:15 2748:20 2748:21 civil 2391:16 2592:6, 2757:9 2757:10 2757:15 Clara 2753:13 clarification 2398:14 2400:11 2408:15 2419:25 2420:19 2446:7 2446:24 2449:13 2461:6, 2572:7 2572:8, 2620:6 2620:15 2634:17 2672:6 2766:12 2779:6 clarifications 2528:6 clarified 2434:19 2583:16 clarifies 2437:1 clarify 2438:19 2440:23 2457:16 2466:15 2482:18 2557:13 2560:2 2585:22 2587:3	2696:10 2721:2, 2771:6 2772:11 clarifying 2399:23 2434:5 2577:14 2583:7 2631:25 2703:22 Clark 2746:2 class 2403:22 2403:22 2498:15 2652:22 classified 2401:25 clause 2434:5 2434:12 2760:19 clean 2329:13 2344:12 2351:19 2354:6 2355:18 2355:21 2355:24 2368:1, 2411:8 2481:3 2491:13 2491:18 2497:24 2497:25 2526:22 2527:18 2528:5, 2539:8 2539:17 2578:10 2621:25 2622:8, 2656:5 2737:10 2746:24 2746:24 cleaner 2753:8 cleanliness 2653:19 clear 2344:7 2348:12 2356:8 2360:14 2378:13 2379:23 2382:20 2389:2 2404:19 2405:6 2420:12 2423:4 2448:14 2453:24 2461:4, 2461:4	2463:11 2474:19 2474:19 2509:15 2520:25 2563:16 2584:17 2586:7, 2719:2 clearer 2483:20 clearly 2359:24 2360:25 2366:16 2380:16 2381:5 2434:12 2489:11 2492:8 2496:11 2650:2 2682:24 clears 2353:25 2353:25 2375:1, 2375:1 clients 2766:24 Cliff 2763:18 Clifford 2337:20 2341:6, 2341:8 2742:24 2743:6, 2744:6 climate 2369:9 2372:3, 2372:7 2372:11 2372:13 2373:16 2493:19 2502:10 2502:10 2503:20 2595:3, 2662:9 2662:16 2662:18 2662:24 climate-warming 2655:21 clinic 2330:12 2624:7 2766:16 2766:25 clinical 2330:8 2330:9 2330:10 2509:11 Clinton 2759:7 close 2344:3 2368:13 2398:4 2408:25 2424:12 2425:4 2426:21	2596:23 2623:1 2623:13 2625:3 2647:12 2652:24 2663:5 2703:14 2720:10 2730:23 2745:5, 2745:7 2750:3 2750:15 2750:22 2752:11 2762:23 2763:10 2763:12 2772:13 2772:14 closed 2424:12 2429:10 closely 2433:11 2455:16 2520:11 closeout 2533:25 closer 2623:9 2708:20 2755:23 closest 2367:22 2369:18 2493:11 2494:16 2502:20 2618:1, 2653:2 closing 2339:6 2424:12 2425:4 2425:13 clotting 2727:25 cloud 2372:16 cloudier 2699:21 Club 2329:13 clutter 2485:8 co-admitted 2346:3 co-author 2747:18 co-benefits 2345:23 2346:5, 2346:7 2346:10 2346:16 2348:2 2593:22 2595:21 2610:13 co-chair	2367:13 co-counsel 2742:6 co-emitted 2556:11 2584:3 co-founder 2371:23 co-pollutants 2633:15 2652:21 CO2 2468:9 2641:5 coal 2454:24 2455:1, 2455:4 2455:11 2469:24 2470:1, 2641:2 coalition 2763:4 code 2405:13 2405:23 2406:3 COLCLASURE 2333:22 collaborated 2487:2 2694:24 2695:1 collaborates 2542:7 collaborating 2549:21 collaborative 2694:15 collaboratively 2694:12 colleague 2582:22 2584:25 2628:25 2721:11 2739:20 colleagues 2719:9 collected 2469:13 2554:14 2569:12 2569:13 2569:19 2679:10 2777:14 collecting 2565:10 2587:9 collects 2568:21 colloquy 2420:12 Colonias
--	---	--	---	---

Volume 8
9/29/2021

EIB Ozone Hearing

2754:19 color 2369:8 2493:17 2502:1 2509:22 2596:21 2624:13 2624:16 2624:21 2625:24 2626:5 2626:14 2626:17 2662:14 2745:10 2745:12 2749:21 2751:21 2752:9 2753:12 2753:20 2756:12 2757:19 2758:4, 2760:1 2760:7 2762:15 2762:23 2763:13 2766:2 Colorado 2330:4 2330:20 2331:5 2331:10 2333:6 2333:14 2333:24 2340:7 2368:15 2368:15 2391:9 2391:16 2391:18 2391:20 2393:21 2395:3, 2396:5 2396:16 2396:23 2396:24 2396:25 2402:17 2402:19 2402:23 2403:8 2403:24 2404:5, 2404:8 2405:13 2405:18 2405:19 2406:2 2406:24 2407:1	2407:15 2407:18 2407:19 2407:23 2408:5 2408:11 2408:16 2408:21 2408:25 2409:1, 2409:8 2455:17 2455:20 2456:3 2467:14 2474:4 2579:25 2580:4 2594:15 2599:3 2600:12 2600:17 2601:2, 2601:5 2601:9 2601:14 2603:17 2603:18 2603:22 2604:6 2607:15 2622:7 2622:11 2622:14 2623:17 2629:10 2647:1, 2658:3 2660:9 2678:23 2682:10 2682:16 2682:21 2683:2 2683:14 2699:9 2722:14 2729:25 2739:21 2741:8 2741:10 2746:17 2775:6 Colorado's 2393:23 2407:25 2433:11 2600:23 2601:7 2601:17 2603:19 2622:3, 2629:9 column 2670:18 2670:20	2679:9 combination 2605:22 2667:7 combine 2688:13 combined 2707:8 2726:13 2728:5 combining 2394:12 combusting 2547:6 2549:11 2549:12 combustion 2435:9 2547:15 2547:16 2580:15 come 2360:4 2374:14 2378:18 2378:19 2380:10 2390:3, 2390:4 2394:13 2396:10 2396:10 2397:17 2417:17 2422:10 2422:14 2424:1, 2436:7 2471:13 2479:16 2480:23 2486:10 2487:11 2488:3, 2522:9 2543:13 2549:19 2552:15 2571:17 2576:10 2576:13 2615:15 2633:18 2636:10 2636:18 2637:1, 2652:5 2658:12 2658:14 2669:20 2680:14 2688:21 2693:7 2693:10 2707:14 comes 2372:12 2410:6 2411:16	2499:16 2597:22 2619:2 2674:14 2754:2 comfortable 2387:2 2648:15 coming 2354:11 2365:4 2386:21 2393:18 2420:19 2484:24 2489:11 2512:7 2545:15 2545:16 2573:21 2573:25 2619:4 2619:10 2630:17 2765:20 2765:21 commend 2494:10 comment 2335:5 2335:7 2335:17 2335:19 2335:21 2335:23 2336:5, 2336:7 2337:9 2337:11 2337:13 2337:15 2342:14 2358:16 2364:23 2365:11 2365:19 2366:2, 2366:4 2367:3, 2367:4 2371:14 2371:15 2371:20 2374:5 2378:12 2386:18 2452:24 2467:16 2487:22 2488:10 2488:13 2488:15 2488:23 2490:3, 2490:4 2492:20 2492:21 2493:5	2496:22 2496:23 2500:20 2500:21 2504:21 2504:22 2508:20 2508:21 2511:14 2636:5, 2649:6 2649:15 2649:21 2650:16 2650:17 2654:22 2654:23 2657:17 2657:18 2661:22 2661:23 2664:12 2676:16 2677:24 2681:12 2682:1 2683:19 2684:24 2686:9 2690:13 2739:23 2767:2 commented 2677:11 commenter 2636:6 2649:14 commenters 2344:5 2364:21 2653:23 commenting 2347:23 2682:1 comments 2347:14 2356:3 2362:25 2363:1 2388:17 2397:10 2408:4, 2408:9 2416:18 2420:21 2441:6 2453:23 2463:21 2463:24 2464:6, 2464:7 2464:22 2465:5 2465:18
---	---	--	---	---

Volume 8
9/29/2021

EIB Ozone Hearing

2482:5	2501:16	2534:3	compiling	2605:18
2484:12	2501:24	2587:15	2527:5	2611:1, 2619:5
2490:11	2501:25	2612:16	complain	2642:8
2573:2	2502:2, 2502:2	2659:3, 2694:6	2758:14	2644:18
2606:17	2503:19	2699:1, 2701:4	complaint	2719:7
2608:1	2509:6	company's	2450:4	2720:11
2614:11	2509:14	2619:14	2758:15	2736:8
2614:12	2509:18	compare 2569:16	2758:20	2738:17
2614:15	2509:20	2570:4	2758:23	2747:4
2614:17	2510:2	2598:15	complaints	2765:22
2614:17	2510:16	2676:21	2758:16	2766:4
2663:13	2540:7, 2623:2	2749:1	complement	2769:25
2666:1	2623:14	compared	2456:18	2770:4
2667:17	2623:21	2498:10	2641:15	2777:20
2677:25	2627:24	2535:20	complete	complicated
2677:25	2628:3	2547:18	2468:18	2363:4
2682:13	2628:11	2580:10	2564:1	2732:20
2711:24	2628:20	2598:11	2616:12	2732:20
2752:18	2642:9	2603:5	2679:15	2732:22
2755:2	2662:12	2603:15	2692:15	comply 2438:1
Commercial	2662:13	2608:12	completed	2449:9
2333:10	2663:25	2612:25	2558:13	2517:19
Commission	2664:2, 2708:9	2687:11	2693:15	complying
2340:7, 2490:9	2745:4	2724:23	completely	2438:1
2559:3, 2560:6	2745:10	2748:14	2384:22	2448:23
2561:5	2745:12	2748:19	2394:8, 2464:7	2449:9, 2518:9
2622:15	2747:6	2750:19	2657:23	component
2623:18	2750:13	comparing	2677:15	2381:13
2765:11	2756:11	2358:8	2708:2	2382:11
2783:20	2756:11	2569:17	completes	2432:13
commissioner	2760:7, 2760:7	2569:19	2669:25	2433:1
2489:4, 2489:5	2762:14	2572:21	2692:7	2439:20
2492:2, 2505:6	2765:25	2585:13	2780:25	2518:19
2508:4	community	2647:23	completing	2556:3, 2556:4
commissions	2340:18	2700:2	2677:14	2573:14
2759:22	2371:25	comparison	completion	2646:4
2760:5, 2782:9	2493:18	2466:13	2369:22	2646:15
committed	2506:1, 2506:5	2569:22	2373:9	2666:12
2501:10	2506:6	2594:5, 2600:5	2494:19	2668:20
2615:11	2506:11	2603:14	2503:5	2668:22
Committee	2623:5, 2623:6	2604:6	2510:17	2669:21
2367:14	2627:18	2676:17	2653:6	2669:22
2737:10	2631:10	2688:16	completions	2670:13
common 2548:8	2753:11	competing	2570:23	2670:14
2579:1	2757:2, 2757:3	2432:24	2663:8, 2715:3	2670:21
commonly 2571:3	2765:18	2433:5, 2433:6	complex 2544:24	2674:6, 2677:1
communicate	2766:1	2433:10	2685:22	2679:10
2366:1	companies	2433:13	2686:11	2679:12
2422:23	2370:4, 2498:9	2453:16	compliance	2679:21
communities	2498:10	2475:21	2404:4, 2436:7	2679:22
2369:2, 2369:2	2498:11	2476:10	2436:10	2679:23
2369:8	2499:24	2476:18	2440:15	2683:11
2369:16	2503:13	2518:10	2445:16	2697:3
2373:3	2535:5	2519:8	2516:12	2697:16
2373:14	2612:13	competition	2517:18	2698:11
2493:13	2653:13	2519:3	2517:21	2705:8, 2719:5
2493:14	2659:24	compilation	2519:5, 2527:8	2719:20
2493:17	2663:7	2592:17	2594:7	component-level
2493:25	company 2333:2	compiled	2599:16	2580:4
2494:13	2333:3, 2497:3	2556:15	2604:9	components
2495:2, 2495:3	2499:17	2615:20	2604:13	2429:7

Volume 8
9/29/2021

EIB Ozone Hearing

2429:20	comprehensively	2725:14	2754:18	2607:18
2430:6	2586:9	2726:19	2766:2	2608:14
2430:14	compression	2731:3	2769:23	2608:16
2430:17	2548:10	2736:19	2771:19	2608:17
2430:20	2648:25	2739:5	2772:15	2761:10
2431:15	compressor	2739:12	conclude	2761:20
2434:6	2332:14	2779:23	2354:25	conducted
2434:11	2399:21	concept 2355:1	2498:21	2343:23
2437:5, 2437:6	2432:7, 2442:1	2572:21	2519:14	2448:25
2458:15	2442:6, 2445:8	2640:14	2773:24	2520:18
2458:17	2446:3	2645:7	concluded	2540:19
2458:19	2517:11	concepts	2470:23	2566:12
2466:10	2517:17	2431:10	2579:3	2569:18
2552:10	2518:6	2688:14	2755:17	2574:6, 2575:2
2555:12	2519:23	concern 2359:2	2756:23	2578:16
2573:10	2520:5	2367:23	concludes	2589:7
2645:23	2520:14	2401:2, 2401:4	2441:8	2597:13
2646:1, 2646:3	2520:18	2401:24	2558:22	2603:16
2668:4, 2668:5	2520:23	2448:6	2610:16	2604:14
2670:9	2546:16	2460:17	2642:17	2611:9
2670:10	2570:21	2471:2, 2472:6	2736:6	2641:21
2670:15	2570:21	2472:9	2763:16	conducting
2671:2, 2671:9	2580:2, 2581:4	2486:25	2763:18	2365:17
2671:11	2594:23	2487:7	conclusion	2435:11
2671:12	2609:4, 2609:6	2575:12	2376:8	2435:22
2676:24	2609:7	2690:14	2376:22	2525:9
2678:25	2609:10	2691:5	2463:9	2568:13
2683:18	2610:3, 2610:8	2730:15	2552:16	2574:12
2683:20	2610:11	concerned	2571:17	2594:10
2685:3	2610:22	2445:16	2579:5	2602:17
2685:18	2644:5	2461:2, 2495:9	2761:23	2603:9
2686:12	2689:20	2497:11	Concurrent	2603:23
2697:14	2756:22	2498:19	2338:18	2606:2
2698:6, 2698:8	compressors	2660:7, 2660:8	condition	2677:13
2701:14	2468:13	2660:10	2458:12	2685:10
2701:16	2546:15	2660:10	conditions	2688:7
2722:5	2580:5	2660:11	2559:12	conferencing
2730:16	2645:15	2663:16	2596:24	2327:15
2736:16	2697:2	2731:16	2613:3	confirm 2454:19
comport 2351:10	2708:18	2755:2, 2755:5	2626:19	2530:13
2468:25	2708:19	concerning	2752:13	confirmation
composition	comprised	2729:15	conduct 2432:8	2641:20
2551:17	2730:13	2747:23	2433:4, 2436:4	conflict
2584:8	compromise	2760:13	2448:18	2458:24
compounds	2740:3	2761:16	2453:5, 2454:8	2716:4
2495:8	compromises	concerns	2456:15	confused 2344:3
2501:22	2740:6	2355:12	2470:24	2345:8
2594:25	con 2713:13	2394:20	2488:8	2426:19
2595:17	concentration	2408:17	2517:18	2583:12
2625:25	2430:10	2513:24	2565:6	confusion
2651:7, 2718:8	2573:19	2521:8	2586:21	2347:11
2720:23	2648:11	2521:12	2594:18	2420:17
2721:21	2725:23	2524:23	2601:18	2529:3, 2529:4
2747:2	2726:5	2525:2, 2526:2	2601:24	2641:18
2768:15	2726:25	2687:10	2603:3	Congress
comprehensive	2727:2	2708:9	2603:16	2332:17
2586:14	concentrations	2708:14	2604:4	conjunction
2589:10	2570:9	2708:21	2604:18	2539:8
2625:16	2620:20	2730:17	2604:25	2539:17
2632:2	2720:1	2746:25	2607:11	connecting
2722:13	2723:15	2747:4	2607:13	2594:14

Volume 8
9/29/2021

EIB Ozone Hearing

connection 2429:5 2512:18 2524:19 connections 2429:2 connectors 2428:25 2429:8 2457:14 2468:13 2645:24 consequence 2499:9 2752:24 consequences 2347:18 2507:1, 2507:4 consequential 2348:2 Conservation 2329:12 2559:2, 2560:5 2560:6, 2561:5 2776:1 conservative 2499:4, 2552:2 2594:9, 2604:7 2606:4 2628:22 2675:7 2676:15 2677:23 conservatively 2567:12 consider 2346:10 2389:21 2400:5, 2419:6 2419:10 2422:9, 2425:5 2427:8, 2427:8 2454:9, 2460:1 2462:15 2462:19 2477:23 2482:21 2483:3 2491:15 2498:2 2617:19 2630:23 2733:10 2733:21 2733:22 2754:8 2754:12 2754:25 2756:2 2756:19 2757:7	2768:11 2772:19 2772:20 considerable 2612:17 consideration 2424:15 2433:9 2433:22 2434:17 2450:16 2450:19 2453:14 2471:23 2472:3 2475:20 2481:10 2516:25 2628:9, 2631:1 2663:11 2755:15 2756:9 2777:16 considerations 2419:16 2464:3, 2759:5 considered 2344:22 2351:4 2403:10 2408:7 2434:14 2436:18 2436:19 2437:4 2439:11 2482:25 2484:14 2620:4 2621:10 2630:11 2647:24 2727:17 2733:20 2759:1, 2767:7 considering 2476:1, 2501:1 2503:21 2518:5 2597:21 2685:2 considers 2494:2 consistencies 2548:3 consistent 2526:21 2680:7 consistently 2547:10 2704:17	consisting 2603:25 2753:7 constant 2361:15 constantly 2361:14 2364:7 constituent 2414:4, 2556:6 constitutional 2747:11 constraints 2421:17 construct 2667:21 2683:3 constructed 2452:25 2671:14 constructing 2670:25 construction 2401:11 consultant 2560:5, 2561:7 consulting 2592:22 consumed 2498:7 consumer 2498:14 consumption 2498:8 contact 2372:6 contain 2604:15 2692:10 contained 2603:7 containing 2485:21 2604:13 contaminants 2621:2 2730:15 contaminated 2753:15 contaminates 2753:10 contamination 2753:17 contemplate 2376:20 contemporary 2645:3 contending 2585:23 content 2441:25 2442:2, 2455:1 2455:5 2584:10 contention	2361:2 2697:23 context 2353:11 2355:22 2381:3 2415:11 2445:7 2563:20 2568:23 2571:4 2713:20 contexts 2756:7 continue 2491:16 2491:24 2507:10 2526:15 2530:22 2576:8 2687:22 continued 2329:1, 2330:1 2331:1, 2331:2 2332:1, 2333:1 2334:1, 2336:1 2336:3, 2337:1 2337:3, 2337:5 2337:24 2339:1, 2339:3 2340:1, 2340:3 2341:1, 2665:5 2774:19 continues 2525:3 2526:11 2675:13 2699:18 continuing 2392:4 2424:25 2506:23 2510:13 2542:12 2683:19 2716:13 continuous 2581:16 2723:23 continuously 2581:14 contract 2499:1 contractor 2546:24 2607:11 2607:17 2645:5 contractors 2604:25 contradict 2472:21 contrast 2645:4	2750:20 contribute 2412:9 2547:19 2595:2, 2718:8 contributed 2586:2 contributes 2368:4, 2368:6 2652:1 contributing 2546:17 contribution 2554:8 contributor 2554:12 contributors 2372:3, 2412:2 2652:4 control 2340:7 2340:9 2340:19 2346:2 2346:17 2346:23 2369:22 2373:8, 2391:8 2394:7, 2394:7 2394:24 2429:14 2431:1 2434:16 2459:1 2463:21 2464:2 2494:19 2503:4, 2590:3 2594:15 2602:16 2603:17 2606:19 2618:9 2622:14 2622:16 2623:17 2647:5, 2653:6 2663:7 2746:23 2754:10 2754:14 2755:9 2755:11 2755:13 2755:19 2755:24 2756:16 2756:21 2756:24 2757:5, 2761:7 2764:22 2765:2
--	--	---	--	--

Volume 8
9/29/2021

EIB Ozone Hearing

2765:10	COPD 2509:17	2573:24	2413:17	2599:21
2765:13	2509:22	2574:21	2413:21	2599:23
2778:13	Cope 2513:16	2575:9	2447:10	2600:1, 2600:3
controlled	Copeland 2513:7	2575:19	2471:16	2600:7
2440:3	2514:3	2578:24	2549:9	2601:23
controller	2514:13	2579:2	2583:18	2601:25
2573:22	Copeland's	2579:17	2618:15	2602:8
2705:6	2513:18	2584:19	2620:16	2602:10
controllers	2514:5	2588:20	2737:17	2602:23
2339:21	copies 2593:5	2589:3	correspond	2603:3, 2603:6
2370:1, 2370:6	copy 2592:24	2589:25	2547:25	2603:22
2373:11	2744:16	2593:5, 2622:4	corroded	2604:3
2494:23	corner 2408:25	2622:9	2555:10	2605:17
2503:9	Corners 2339:18	2623:21	corrosion	2606:7, 2606:9
2503:15	coronary 2597:2	2623:22	2429:2	2606:13
2510:20	corporate	2624:14	cost 2340:16	2606:17
2653:10	2368:5	2627:18	2340:16	2606:21
2653:15	correct 2363:21	2627:19	2345:25	2606:22
2663:10	2378:21	2627:22	2346:15	2607:2, 2607:9
controlling	2398:19	2633:7, 2633:8	2355:12	2610:11
2472:17	2400:7, 2401:7	2634:9	2355:15	2614:1
2748:7	2403:11	2634:12	2356:24	2614:13
2748:10	2403:21	2637:22	2357:7, 2357:9	2614:21
2748:23	2412:13	2637:23	2358:7, 2358:9	2615:6, 2615:7
controls 2397:5	2438:24	2638:1	2358:14	2616:3
2397:9	2445:19	2638:16	2360:25	2616:22
2728:18	2446:14	2640:20	2361:15	2616:23
convenience	2447:11	2641:23	2361:24	2617:11
2373:15	2448:8	2659:22	2381:3	2618:9
2711:13	2449:20	2667:19	2384:18	2618:16
conventional	2452:12	2670:22	2433:20	2618:20
2455:2	2452:17	2670:23	2454:5	2619:9, 2634:1
2671:23	2456:4, 2458:3	2671:1	2454:14	2642:6
2700:10	2458:4	2680:16	2454:16	2642:12
conversation	2459:11	2680:17	2461:9, 2464:3	2647:19
2374:13	2459:13	2680:17	2464:10	2647:20
2390:19	2459:23	2682:13	2464:13	2647:21
2390:24	2462:4, 2462:5	2697:11	2464:13	2648:1
2392:5, 2393:8	2468:15	2697:25	2476:12	2667:15
2444:17	2468:20	2702:11	2476:17	2674:10
conversations	2469:1	2702:12	2477:4, 2478:1	2674:11
2392:16	2476:22	2704:14	2518:25	2676:19
conversion	2477:18	2716:12	2525:8, 2527:9	2677:20
2633:4	2478:2	2729:21	2550:20	2678:14
convert 2633:21	2485:18	2735:5	2590:7	2682:19
2633:24	2520:10	2736:11	2593:18	2684:23
2683:25	2520:16	2741:10	2594:8, 2594:9	2685:4, 2685:6
2697:19	2529:24	2766:18	2594:13	2685:19
converted	2538:3	2767:10	2594:18	2685:21
2556:17	2552:25	corrected	2595:5, 2597:9	2685:24
2589:23	2556:15	2638:12	2597:13	2686:2, 2686:6
2611:16	2560:7, 2560:8	2638:14	2597:15	2686:15
2657:22	2562:8, 2563:7	2686:23	2598:3	2686:16
cooperation	2565:2, 2565:3	2706:14	2598:12	2686:17
2514:1	2565:15	correction	2598:16	2686:18
cooperative	2566:8	2593:8	2598:22	2687:20
2640:23	2566:14	corrections	2598:23	2688:3, 2689:2
coordinated	2567:13	2428:13	2598:25	2689:12
2399:4, 2399:7	2567:22	2538:5, 2593:7	2599:9	2690:4, 2691:2
coordination	2569:3	2638:4	2599:13	2691:6, 2691:7
2524:23	2571:19	correctly	2599:15	2691:14

Volume 8
9/29/2021

EIB Ozone Hearing

2691:16	2678:8	2578:2	2490:12	2334:5, 2342:9
2691:16	2678:12	2581:21	2490:13	2353:16
2705:21	2678:16	2627:14	2490:19	2353:22
2706:17	2683:5	2779:5	2490:22	2405:2, 2422:3
2707:6	2684:20	2783:10	2491:2	2636:13
2709:11	2684:25	2783:13	2491:13	2665:21
2776:24	2685:2	counsel's	2493:2, 2505:6	2754:25
cost-to-benefit	2685:17	2482:5	2505:6	2756:17
2689:7	2686:7	counselor	2505:13	2756:18
cost/benefit	2686:19	2414:21	2505:15	2756:23
2599:1, 2599:2	2687:13	2651:19	2505:21	2758:12
2617:10	2687:24	2652:16	2506:12	2761:15
2617:14	2688:6, 2688:7	count 2360:13	2633:19	2765:1, 2767:3
costing 2613:24	2688:8, 2688:9	2668:20	2736:6, 2754:1	courtesy
costly 2497:15	2689:6	2668:22	2765:10	2368:12
2498:11	2689:10	2669:21	2770:4, 2772:1	courts 2761:8
costs 2356:6	2690:2, 2690:4	2669:22	2783:3	cover 2524:2
2356:9, 2357:2	2690:10	2670:13	couple 2344:12	covered 2436:9
2357:24	2691:12	2670:19	2347:14	2439:2, 2454:7
2362:22	2691:21	2670:21	2375:23	2464:19
2433:2, 2454:3	2694:8, 2695:5	2674:6	2393:25	2524:8
2454:10	2695:9	2679:10	2395:23	2568:12
2463:24	2695:10	2679:12	2397:14	2691:1, 2737:3
2464:2, 2464:8	2705:15	2679:22	2410:12	covers 2527:22
2476:7, 2476:8	2705:21	2683:9	2415:7	COVID-19
2594:12	2706:6, 2706:7	2683:17	2477:21	2338:19
2598:12	2706:8	2683:20	2487:11	CPP 2715:3
2602:6, 2602:8	2706:20	counterfactual	2509:6, 2532:5	crafted 2453:15
2602:11	2707:2, 2707:8	2356:17	2578:13	crafting
2602:11	2778:18	counties 2510:1	2581:11	2344:23
2602:12	2778:20	2598:5	2583:7	2350:20
2602:12	Council 2329:12	2650:24	2588:14	crashed 2543:19
2602:16	2754:20	2650:25	2613:14	crave 2459:16
2602:21	counsel 2328:16	2651:5, 2651:5	2613:23	create 2382:16
2602:22	2328:17	2653:18	2617:18	2462:12
2603:7, 2603:9	2328:21	2653:19	2619:9	2507:10
2603:14	2328:21	2720:10	2621:18	2607:6
2603:15	2348:18	countries	2649:5	2646:23
2604:11	2351:18	2498:3, 2498:4	2663:13	2652:5
2606:2	2353:13	2498:7	2667:3, 2674:9	2684:17
2614:18	2374:14	2498:16	2690:20	2697:6
2616:20	2378:19	2659:4	2696:10	2724:12
2616:21	2389:3, 2389:5	country 2503:23	2704:24	2736:18
2634:3, 2642:5	2389:20	2618:23	2704:25	2760:23
2642:5, 2642:8	2389:25	2747:21	2706:3	created 2359:23
2644:17	2390:3, 2398:9	counts 2360:14	2738:12	2363:16
2644:18	2399:21	2433:1	2756:13	2463:11
2644:22	2406:10	2468:12	2764:16	2646:21
2644:25	2413:3, 2420:8	2486:7, 2628:2	2766:11	2662:10
2648:7, 2667:7	2420:13	2666:11	coupled 2647:20	2667:14
2674:9	2422:9, 2423:7	2666:12	course 2501:20	2725:13
2674:17	2425:13	2668:3	2509:9	creates 2641:18
2677:5, 2677:7	2459:16	2668:17	2631:17	creating 2621:6
2677:8, 2677:8	2480:24	2670:8, 2671:5	2652:7	2685:11
2677:13	2481:13	2671:9	2697:19	2736:21
2677:15	2481:25	2674:15	2709:17	creation 2372:1
2677:16	2482:7	2678:25	2714:22	2651:7
2677:18	2482:22	2679:21	2732:22	creative
2677:21	2483:19	2683:11	2732:25	2491:21
2678:3, 2678:5	2483:21	2698:11	2766:2	2507:22
2678:6, 2678:7	2576:15	county 2490:9	court 2327:22	credentials

Volume 8
9/29/2021

EIB Ozone Hearing

2630:10 credit 2583:11 cripple 2498:20 2499:5 crippling 2499:7 crisis 2595:3 criteria 2718:21 2734:21 2758:2 2769:21 critical 2369:15 2372:21 2494:12 2498:16 2498:23 2499:6 2502:16 2507:9 2507:11 2548:25 2549:15 2580:25 2581:8 2581:13 criticism 2682:14 2684:24 criticisms 2666:1 critique 2573:5 2616:22 2667:10 critiques 2614:13 critiquing 2614:19 crop 2720:8 cross 2479:4 cross-examin... 2335:9 2335:10 2335:10 2335:11 2335:14 2335:15 2335:15 2336:11 2336:14 2336:15 2336:15 2336:19 2336:19 2336:20 2336:20 2337:6 2337:18 2337:18 2337:21	2337:22 2398:16 2399:18 2400:20 2402:14 2441:18 2447:1, 2448:1 2521:14 2529:7 2529:12 2564:15 2577:8, 2578:5 2613:15 2620:12 2621:20 2624:3, 2627:7 2694:1 2729:16 2735:18 2763:19 2764:10 2766:13 crossed 2424:20 crosses 2722:3 crossing 2423:22 Crownpoint 2369:4, 2369:5 Cruces 2329:20 Crude 2340:4 Cruise 2479:16 CSU 2679:6 CT 2677:9 CTG 2381:22 2381:24 2382:6 2461:23 2464:10 2464:13 2467:20 2467:23 2468:21 2469:7 2469:12 2469:21 2469:23 2470:16 2470:17 2471:17 2486:13 2552:11 2647:5, 2668:6 2669:21 2673:14 2674:7 2674:11 2675:7 2676:19 2676:23 2677:2, 2677:9 2677:12	2681:6 2681:20 2682:18 2686:25 2695:6 2695:11 2706:13 2778:18 CTG's 2464:8 CTGs 2599:8 2606:20 2607:4 2614:13 cubic 2431:17 2431:21 2554:22 2646:7, 2646:9 2671:25 2681:18 2683:22 cumulative 2765:25 2767:6 curb 2373:16 2595:5 curious 2389:17 2399:9, 2532:9 2698:23 2700:18 2735:3, 2779:8 current 2445:7 2446:2 2467:19 2469:5 2497:10 2503:8, 2550:1 2587:17 2615:15 2618:16 2667:22 2678:11 2678:14 2678:21 2681:15 2683:3, 2746:4 currently 2509:1 2534:20 2583:24 2605:12 2611:21 2639:21 2644:12 2746:5 2751:17 2777:11 2779:21 curriculum 2341:7 2744:17 Curtis 2329:3	2336:14 2560:10 2560:16 2561:11 2561:11 2563:16 2564:12 2564:13 2564:16 2576:4 2588:19 2588:25 curve 2721:25 Cusworth 2338:20 cut 2347:7 2369:25 2373:4 2373:10 2469:18 2493:25 2494:23 2503:8 2510:19 2653:9 cutting 2375:9 CV 2592:25 2743:17 cycles 2707:14 D D-E-E 2654:13 D-E-V-as-in-... 2390:17 D-I-C-A-M-I-... 2654:14 D.(1 2439:2 da-da-da 2658:21 dads 2651:8 daily 2435:16 2436:23 Dakota 2761:16 DALVA 2329:8 damage 2510:6 2631:14 damages 2651:10 2719:25 danger 2458:16 dangerous 2718:22 2719:23 dangerously 2720:10 Daniel 2330:8 2331:12 2417:10 2624:6 DANNY 2336:10 2524:12	dark 2717:1 dart 2631:19 data 2339:14 2340:18 2340:18 2340:19 2354:10 2354:20 2355:16 2359:7, 2359:9 2359:10 2359:15 2359:23 2360:7 2360:12 2360:15 2360:25 2361:3 2361:22 2361:23 2362:1, 2362:2 2362:16 2362:18 2375:18 2375:22 2376:8 2376:11 2376:18 2376:24 2381:9 2381:19 2381:25 2383:2, 2383:3 2383:7, 2384:6 2384:7 2384:25 2386:6 2391:22 2403:9 2409:20 2432:24 2432:25 2433:3 2433:10 2433:13 2438:13 2462:7 2462:11 2468:23 2469:4 2469:11 2469:11 2469:13 2476:4 2476:17 2476:18 2481:4 2481:11 2481:17 2485:2, 2486:4 2486:6
--	--	---	---	---

Volume 8
9/29/2021

EIB Ozone Hearing

2519:21	2681:2, 2681:4	david@baakel...	2431:21	2735:19
2527:7, 2527:7	2684:7	2329:21	2481:12	2736:2
2527:10	2692:11	Davis 2328:6	2487:9, 2488:9	2737:21
2542:25	2692:19	2378:4	2505:19	2737:24
2543:2, 2543:5	2694:6, 2695:7	2378:13	2505:23	2764:2, 2764:4
2544:3	2696:11	2389:11	2511:16	2764:5, 2764:9
2544:10	2697:23	2389:13	2548:23	2764:11
2545:23	2697:24	2390:5	2553:22	2764:13
2546:19	2698:1, 2698:2	2391:25	2554:22	2766:6, 2766:9
2551:13	2698:10	2410:10	2588:20	2767:2
2552:14	2698:24	2410:11	2605:11	deadline
2565:10	2699:3, 2699:4	2410:25	2605:13	2361:17
2567:11	2699:7, 2699:8	2411:22	2638:2, 2651:9	deadly 2495:4
2567:25	2699:13	2412:11	2651:25	deal 2424:9
2569:2, 2569:6	2700:22	2412:15	2716:6	2617:16
2569:19	2704:16	2412:18	2745:20	dealing 2501:21
2583:25	2704:16	2414:22	day-to-day	2767:3
2587:9	2723:6, 2724:1	2415:14	2586:25	deals 2641:1
2592:17	2724:16	2415:16	daylight	dealt 2425:20
2596:4	2760:6, 2760:9	2420:23	2732:21	2453:11
2602:15	2760:12	2479:8, 2479:9	days 2375:20	death 2720:4
2604:13	2775:18	2512:12	2375:23	debatable
2605:24	2777:5	2512:16	2439:25	2509:16
2611:14	database	2522:12	2531:6	debate 2522:8
2615:21	2685:11	2522:13	2532:21	2644:6
2616:10	2685:14	2532:3, 2532:4	2537:7	debt 2498:20
2616:11	Dataset 2340:8	2533:1	2557:24	Dec 2338:19
2619:4	date 2363:15	2533:10	2581:12	2339:21
2619:14	2401:11	2534:2	2639:13	2340:14
2625:1	2401:23	2534:23	2639:19	decades 2503:17
2627:21	2403:6	2536:5, 2583:5	2699:21	2664:3, 2676:8
2627:25	2403:14	2583:6	daytime 2574:6	decide 2353:10
2628:2, 2628:5	2436:8	2583:10	2574:9	2419:8
2633:22	2437:13	2584:5	2574:17	2419:12
2634:8	2440:18	2584:16	2588:23	2427:6
2634:14	2453:1, 2456:7	2584:21	2589:2	decided 2464:14
2645:2, 2645:3	2472:12	2585:3	2732:24	2465:7
2645:4, 2645:4	2472:13	2585:20	DC 2746:17	2566:21
2645:6	2517:24	2586:18	2761:15	2754:24
2645:16	2526:17	2587:16	DD 2340:18	2756:16
2645:18	2690:18	2587:21	2591:16	2761:14
2646:10	2713:16	2629:20	2591:18	deciding 2427:7
2646:12	dates 2469:4	2629:21	de 2329:9	2482:1
2646:24	Datu 2340:23	2696:8, 2696:9	2331:18	decision
2648:16	2605:6, 2605:8	2697:8	2332:5	2350:23
2667:22	daughter	2697:22	2332:22	2384:17
2668:6, 2668:7	2505:18	2698:13	2336:15	2389:15
2668:10	2663:22	2699:16	2337:18	2389:16
2668:18	Dave 2337:12	2700:16	2337:21	2453:21
2668:21	2657:8	2701:23	2347:1, 2347:9	2456:14
2669:20	2657:15	2773:7, 2773:8	2347:12	2460:6, 2460:7
2671:4	David 2329:19	2780:16	2347:13	2460:7
2673:23	2336:13	2780:17	2576:7	2464:17
2673:24	2338:6, 2339:9	2782:15	2576:16	2466:21
2675:7, 2675:8	2417:4, 2537:5	day 2327:12	2577:1, 2577:3	2476:2, 2483:2
2675:9	2537:10	2365:19	2577:7, 2577:9	2764:17
2675:10	2537:20	2374:6, 2377:4	2577:11	2764:22
2675:19	2613:1	2385:2, 2427:1	2577:23	2765:2, 2767:9
2676:9, 2677:9	2633:14	2431:17	2729:9	2767:12
2678:12	2649:17	2431:18	2735:13	decision-maker
2678:20	2656:25	2431:20	2735:14	2384:22

Volume 8
9/29/2021

EIB Ozone Hearing

decisions	2525:20	2330:3	2415:22	2448:20
2460:12	2527:21	Demi 2479:15	2419:13	2451:23
2501:2	2553:23	demographic	2421:25	2452:5
2754:23	2600:24	2506:5	2422:11	2453:20
2759:23	2751:17	2626:12	2427:21	2454:25
2760:13	2751:24	2749:12	2433:4, 2433:8	2458:21
2761:16	2751:25	demographics	2433:12	2458:23
deck 2515:25	2752:3, 2752:6	2597:6	2433:14	2458:24
2521:10	2752:8	2624:18	2436:3	2459:22
declaration	2752:15	2627:15	2437:22	2467:7
2721:19	2767:22	2757:2	2437:25	2493:10
declined 2458:2	definitions	demonstrate	2438:5, 2438:6	2513:20
decrease	2525:18	2433:15	2439:6, 2439:8	2513:22
2543:21	definitively	2440:1	2439:11	2525:22
2543:22	2535:12	2440:15	2439:14	2526:13
2594:22	definitiveness	2472:8	2439:14	2527:1
decreased	2534:15	demonstrated	2441:24	2774:25
2497:22	degradation	2754:19	2445:1	2775:12
2619:15	2720:14	demonstrates	2445:15	2776:2, 2776:4
2745:9	degrade 2651:14	2604:7	2446:10	2779:16
decreases	degrading	2604:24	2447:20	departments
2609:9, 2686:6	2656:10	2612:12	2452:17	2759:22
2720:8	2656:11	2754:21	2457:7, 2458:2	2760:4
decrepit	degree 2535:20	2755:8	2458:6	2760:11
2555:11	2592:6, 2592:8	demonstrating	2458:14	depend 2491:3
dedicated	2745:25	2345:23	2465:10	2711:4
2503:16	2746:2, 2750:2	2543:25	2476:9	dependence
2747:16	2756:3, 2756:5	2775:5	2476:14	2498:15
Dee 2337:10	2756:8	demonstrative	2478:18	dependent
2649:17	2756:20	2379:13	2502:15	2490:23
2654:8	2756:25	2380:9, 2383:1	2503:12	2559:11
2654:20	2763:9	denied 2374:16	2510:9, 2517:6	2682:7, 2683:5
deems 2755:25	Deighton	2757:20	2517:13	depending
deeper 2642:16	2339:10	Denver 2330:20	2524:24	2388:22
deeply 2498:19	2553:18	2331:5, 2333:6	2525:1, 2526:3	2390:24
2501:10	2555:3	2333:14	2527:3, 2561:3	2451:1
2501:16	Delaware	2333:24	2599:3, 2645:5	2452:11
2501:16	2333:21	2407:6, 2660:9	2674:11	2530:5, 2531:9
default 2431:12	delay 2440:13	2746:17	2698:3	2584:13
2431:14	2443:22	department	2720:16	2625:6
2434:24	delayed 2440:2	2328:15	2722:14	2674:18
2437:17	2440:11	2328:17	2751:18	2684:16
2438:22	2640:2	2328:22	2751:25	2704:13
2513:21	delete 2776:12	2360:19	2757:13	2776:5
defeating	deleted 2525:23	2361:11	2775:3, 2775:7	depends 2451:4
2758:5	deleterious	2361:13	2775:15	2459:24
Defense 2329:12	2594:1, 2630:7	2361:18	2777:2, 2779:2	2569:9
2330:2, 2338:5	deliberate	2362:18	2779:9, 2780:3	deposition
2339:3, 2340:3	2419:5	2362:21	Department's	2411:16
2542:5, 2592:4	deliberations	2373:1, 2373:5	2360:5	depth 2510:11
defer 2474:8	2375:3, 2419:4	2373:6	2361:22	deputies
define 2641:23	2419:10	2374:24	2361:23	2505:21
2696:13	2419:17	2376:24	2362:2	derailing
defining	2427:9	2378:25	2367:20	2418:15
2696:19	2481:15	2381:5	2379:4	describe 2365:7
definitely	2481:21	2381:14	2390:23	2541:5
2375:7, 2660:6	2481:22	2381:17	2427:16	2557:20
2716:12	2482:2, 2483:4	2391:9, 2391:9	2432:17	2602:3
definition	delightful	2391:12	2441:9	2608:25
2365:2, 2376:2	2743:24	2399:6	2442:18	2625:2
2431:2	Delone 2330:3	2412:13	2446:1, 2446:8	2722:10

Volume 8
9/29/2021

EIB Ozone Hearing

2728:15	2457:25	determined	2386:20	2655:1
2747:7	2546:4	2645:22	2386:22	2656:19
2750:24	2546:14	determining	2386:24	Diego 2334:6
2751:14	2566:17	2434:14	2387:2, 2387:5	difference
described	2579:20	2645:17	2387:13	2372:17
2487:23	2770:8	2739:8	2387:19	2420:17
2597:11	detecting	devastating	2390:12	2562:15
2609:18	2563:4, 2575:9	2499:8	2390:16	2586:4, 2674:6
2617:15	detection	develop 2376:25	2390:17	2674:8
2647:20	2429:16	2421:7	2391:2, 2392:1	2674:13
2765:17	2429:21	2426:14	2398:8	2685:20
describes	2430:12	2426:21	2398:10	2687:14
2358:3, 2565:5	2436:18	2520:12	2398:14	2698:15
description	2441:22	2633:20	2399:20	differences
2384:13	2445:17	2652:20	2400:22	2381:6
2440:20	2446:1	2729:1	2402:21	2393:25
2455:19	2446:14	2778:15	2404:9	2408:2, 2587:2
2527:25	2449:17	developed	2404:14	2672:18
desert 2656:2	2465:24	2363:20	2404:17	2691:13
designation	2516:16	2468:23	2405:20	different
2540:9	2516:24	2668:17	2406:19	2357:5
designed	2517:7	2676:8, 2682:5	2406:21	2376:22
2527:23	2517:11	2682:9, 2694:6	2406:23	2381:21
2529:24	2519:4, 2519:6	2760:24	2406:25	2394:5, 2409:7
2646:13	2520:4	developing	2407:5	2410:2
2732:16	2520:19	2498:3, 2571:8	2407:16	2453:17
designs 2698:9	2558:9	2592:14	2407:24	2456:20
desirable	2559:24	2615:16	2408:14	2466:10
2376:7	2561:6, 2561:9	2658:3	2408:19	2472:15
2452:20	2562:18	development	2409:24	2474:25
desired 2690:18	2565:21	2367:22	2410:6, 2410:7	2477:25
destroy 2736:21	2565:25	2369:7	2410:13	2480:17
detail 2357:20	2566:2, 2566:9	2369:19	2410:18	2486:12
2432:13	2566:15	2470:7	2411:4	2486:13
2467:12	2566:21	2491:21	2411:25	2507:18
2521:8	2586:8, 2589:5	2493:11	2412:14	2519:6
2542:14	2605:14	2493:17	2412:17	2569:13
2642:14	2605:16	2494:16	2412:22	2601:2, 2601:8
2721:22	2611:6, 2640:7	2502:20	2413:7, 2413:9	2603:20
2735:1	2748:16	2506:10	2413:14	2615:9
detailed	2762:21	2507:22	2413:22	2619:24
2357:23	2763:6	2510:3	2413:25	2620:1
2365:4, 2466:9	detections	2592:19	2414:5	2634:11
2466:13	2545:3	2653:3	2414:11	2634:13
2614:13	detects 2430:8	2655:16	2414:14	2638:18
2616:19	deterioration	2709:16	2414:17	2641:17
2676:17	2414:24	2751:22	2414:20	2641:17
details 2587:19	2429:5	2754:20	2415:19	2655:9, 2670:8
2616:25	determination	2761:13	devote 2378:10	2679:10
2682:15	2388:20	device 2437:3	2381:6	2679:23
2683:1	2779:12	devices 2339:5	devoted 2360:24	2680:19
2684:19	determine	2370:2	dialogue	2684:13
detect 2430:4	2434:18	2428:25	2524:24	2684:21
2544:15	2463:5	2429:9	Dicamillo	2684:22
2559:9	2567:21	2503:10	2337:10	2684:24
2575:11	2646:6	2570:7	2649:17	2692:2
2575:15	2646:10	2653:11	2654:5, 2654:8	2692:19
2575:25	2663:18	devised 2645:11	2654:8	2696:23
detected 2437:1	2734:14	Devore 2330:18	2654:13	2698:17
2439:18	2757:1, 2757:2	2335:8	2654:18	2699:9
2457:1	2775:19	2386:19	2654:20	2699:19

Volume 8
9/29/2021

EIB Ozone Hearing

2699:25	2357:24	2720:6	2452:6	2348:14
2723:11	2360:1	2743:10	2452:16	2348:19
2723:19	2362:12	2744:25	2509:9, 2531:4	2365:11
2725:15	2362:24	2745:1	2639:13	2377:25
2725:16	2362:25	2766:25	2689:4, 2753:9	2378:5
2778:19	2363:13	2774:22	discovering	2378:11
differential	2363:16	2778:9	2438:11	2382:9
2520:20	2377:17	directed	discovers	2383:19
2686:3, 2686:7	2381:1, 2382:3	2563:24	2458:14	2383:22
differentiate	2382:21	2754:25	discovery	2386:18
2681:6	2383:14	2779:12	2439:21	2389:23
differentiation	2385:10	directing	2440:9	2400:2, 2403:4
2680:23	2387:9, 2428:5	2376:4	discrepancies	2404:18
2680:25	2432:19	direction	2555:16	2404:21
differently	2451:15	2421:3	discrete	2406:4, 2417:3
2442:7	2453:12	2631:13	2723:22	2417:16
differing	2454:14	2631:15	discretion	2418:1, 2423:1
2603:20	2462:16	2631:16	2460:3	2424:18
2672:12	2462:21	2631:18	discrimination	2450:24
2672:12	2484:10	2660:17	2757:21	2455:7
differs 2601:14	2485:6	2723:7, 2724:1	2758:4	2460:15
difficult	2485:24	2724:16	2759:12	2464:1
2364:14	2487:12	2724:18	discriminatory	2474:12
2401:13	2513:18	directional	2758:9	2475:14
2437:7	2515:19	2703:3	2758:10	2475:17
2502:23	2516:5	directions	2758:21	2478:11
2559:15	2516:14	2565:7, 2703:5	discuss 2338:19	2479:3
2730:5	2519:14	2723:11	2419:17	2479:11
difficulties	2524:16	directly	2429:12	2479:19
2576:20	2524:19	2345:24	2464:17	2574:20
2628:1	2528:18	2346:14	2644:15	2618:25
difficulty	2537:14	2356:23	discussed	2644:7
2628:9	2538:1	2388:22	2360:11	2687:12
dilemmas 2409:6	2538:14	2433:21	2365:15	2700:23
diligence	2539:4	2501:19	2392:9	2702:22
2505:3	2553:19	2505:16	2399:24	2730:11
diluted 2726:3	2558:23	2512:19	2407:13	2730:21
diminishing	2584:5, 2585:7	2560:25	2436:14	2731:21
2647:14	2590:3, 2591:9	2731:2, 2731:5	2453:11	discussions
2647:16	2593:2, 2593:6	2758:12	2482:9	2473:20
2673:10	2596:4, 2596:5	2760:16	2524:21	2712:7
2688:13	2597:5	2760:18	2528:9	disease 2340:19
2703:25	2597:12	2761:8, 2770:3	2538:16	2509:21
2707:17	2602:4	director 2592:3	2555:19	2597:2, 2597:3
Dine 2329:12	2604:11	disadvantage	2579:15	2626:21
Dinosaur	2609:1	2351:11	2596:5, 2613:1	2651:12
2408:24	2610:17	2498:10	2667:6	diseases
dioxide 2652:1	2615:14	disagree 2376:8	2668:14	2509:16
direct 2335:9	2615:24	2459:10	2676:23	2509:21
2335:14	2616:4	2540:14	2709:11	disorders
2336:9	2616:18	2553:3	2720:9, 2760:9	2727:9
2336:11	2629:9	2731:17	discusses	2727:10
2336:14	2637:16	disagreed	2434:3	2727:24
2336:18	2638:4	2361:2	2633:25	2727:24
2337:5, 2337:5	2638:23	discerning	discussing	disparate
2337:7	2639:3	2405:3	2538:15	2754:9
2337:17	2642:17	discounted	2562:15	2754:13
2337:21	2665:5, 2708:5	2499:1	2585:25	2756:11
2337:25	2717:10	discovered	2692:1, 2772:4	disparately
2339:9, 2356:8	2717:16	2431:4, 2438:4	discussion	2762:13
2357:1	2717:18	2439:23	2345:10	disparities

Volume 8
9/29/2021

EIB Ozone Hearing

2501:13 dispergences 2467:23 disperse 2724:11 dispersion 2723:4 2736:18 Disposal 2333:10 disproportio... 2339:11 2369:8, 2554:2 2555:21 2624:20 2745:16 2752:24 disproportio... 2493:18 2509:23 2580:10 2612:24 2623:2, 2623:5 2623:9 2623:13 2623:20 2626:19 2662:13 2750:6 dispute 2405:15 2522:7 disrepair 2555:5 dissimilarities 2393:9 dissipate 2658:17 distance 2415:1 2415:5, 2528:1 2582:21 2727:4 2739:25 distinction 2343:24 2384:5 2483:20 2586:4, 2586:7 distinctions 2584:18 distinguish 2573:25 distinguishes 2671:20 distracted 2706:18 distribution 2548:11 2548:15 District 2367:9 2493:1 2650:23	2754:3, 2765:1 disturbances 2727:25 dive 2642:16 2649:1 diverse 2505:21 2766:1 diversity 2546:14 divide 2696:25 divided 2486:6 2486:7, 2486:9 2646:9 2669:14 2669:19 2669:19 2683:24 dividing 2617:13 2668:18 division 2331:4 2410:19 2410:21 2410:24 2560:5 2594:15 2603:17 2685:5, 2686:3 2776:1 division's 2682:12 dizziness 2728:5 dlm@gknet.com 2329:10 docket 2344:25 doctor 2655:10 document 2340:5 2340:11 2344:24 2348:9, 2382:6 2440:11 2443:2, 2462:3 2467:21 2468:22 2469:7, 2469:8 2469:10 2471:21 2667:13 documented 2705:1 2709:13 documenting 2685:10 2685:14 2705:12 documents 2376:3 doing 2342:22 2343:25 2343:25	2355:6 2376:10 2381:17 2406:13 2416:19 2458:22 2471:18 2471:18 2478:22 2495:17 2501:21 2521:23 2530:19 2531:18 2534:11 2544:8 2546:24 2547:2, 2547:2 2547:10 2581:14 2581:25 2589:17 2643:18 2645:1, 2669:5 2695:24 2704:20 2706:8 2706:21 2707:15 2714:14 2716:24 2738:4 2770:21 2780:6, 2782:4 dollar 2614:22 2615:6 2644:23 2687:4 2688:14 dollars 2368:7 2506:9 2506:16 2602:24 2602:24 2603:4 2706:14 doors 2429:9 dosage 2722:1 dose-response 2721:25 doubled 2605:7 doubt 2532:10 downstream 2584:13 downtown 2753:10 downwind 2544:13 2565:9 2630:20 2630:21	2631:14 2724:5 dozen 2509:6 Dr 2355:24 2358:17 2417:10 2510:22 2537:5, 2537:6 2537:9 2537:22 2538:1 2538:12 2539:3 2539:12 2541:4 2547:23 2550:7 2552:19 2555:25 2558:17 2558:22 2559:1, 2560:1 2562:14 2563:1 2563:10 2563:13 2563:14 2564:14 2576:5, 2576:9 2577:10 2577:19 2578:7 2578:14 2581:22 2582:6, 2582:9 2583:8 2583:12 2585:1 2588:18 2589:21 2590:11 2590:13 2613:17 2621:9 2628:25 2632:24 2635:6 2635:11 2716:22 2717:14 2717:17 2718:23 2720:18 2722:10 2729:4, 2729:6 2729:8 2729:18 2733:7 2733:14 2734:2, 2734:8 2734:19	2735:20 2737:22 2738:1, 2741:6 2741:13 2769:12 draft 2606:19 2606:20 2663:1 2776:13 drag 2400:14 dramatically 2607:2 2700:14 drastic 2543:21 drastically 2698:17 draw 2385:10 2463:9 2467:15 2586:3 Drawer 2328:12 drawn 2340:19 dream 2498:18 2498:20 2499:25 drew 2652:17 drill 2703:10 drilled 2700:20 drilling 2470:9 2652:12 2700:10 2700:12 2703:3, 2703:4 2703:7 2722:25 2725:18 2726:13 2728:10 drive 2328:18 2330:13 2505:18 2535:25 2651:7 2705:14 2705:14 driver 2555:2 2686:15 drivers 2685:21 drives 2705:15 driving 2534:24 2535:23 2544:13 2688:9 drone-based 2620:2 drop 2497:19 2497:20 2701:13 2727:6 dropped 2526:3 2543:20
---	--	--	---	--

Volume 8
9/29/2021

EIB Ozone Hearing

2675:18 2727:3 droughts 2655:23 dry 2584:12 2753:8 dtimmons@wil... 2331:15 Duane 2365:24 2370:12 2373:25 due 2369:9 2388:21 2440:9 2440:10 2440:12 2440:12 2445:17 2493:20 2497:15 2505:3 2540:24 2543:20 2580:17 2639:22 2652:20 2674:5, 2689:4 2698:25 2745:6, 2754:5 duly 2367:2 2371:13 2387:7, 2428:3 2490:2 2492:19 2496:21 2500:19 2504:20 2508:19 2515:17 2524:14 2537:12 2591:7 2637:14 2650:15 2654:21 2657:16 2661:21 2665:3, 2717:8 2743:8 2774:20 dump 2540:24 dumping 2396:9 Dunes 2407:10 Dunham 2347:17 duplicate 2395:16 duplicative 2640:11 2640:21 duties 2376:1 2745:16	duty 2754:22 2757:7, 2762:6 2767:21 2769:3 DUVAL 2328:8 Dylan 2630:12 E e-mail 2348:9 2366:1, 2481:1 E.(1 2439:19 E.(2 2439:22 E.(4 2440:2 earlier 2347:16 2360:8, 2372:8 2385:17 2408:22 2409:11 2409:17 2418:6 2420:12 2422:19 2456:1 2456:10 2474:10 2474:17 2474:22 2480:18 2482:19 2484:8, 2511:6 2532:8 2543:18 2556:22 2559:1 2563:15 2571:9 2577:17 2582:11 2584:2 2589:22 2600:12 2610:21 2611:3 2624:24 2628:25 2633:15 2640:16 2677:11 2678:2 2679:13 2684:2, 2719:9 2719:22 2724:2 2727:11 2729:15 2730:8 2765:17 early 2540:19 2543:16 2701:3, 2701:4	2702:7 earn 2653:19 earning 2651:3 2651:4 ears 2705:5 earth 2694:11 2694:12 2694:20 2701:22 EARTHARXIV 2339:8 Earthworks 2329:12 easier 2394:6 2692:13 2712:15 2712:25 easiest 2643:3 east 2329:16 2758:22 Eastern 2642:12 echo 2780:17 echoed 2408:13 economic 2354:10 2360:25 2506:10 2510:3 2592:17 2749:17 economical 2607:11 economically 2355:22 economics 2746:1 economies 2499:7 2499:20 economist 2347:17 2358:17 economy 2490:16 2491:6, 2499:9 2499:12 2507:8 ecosystems 2656:1 ecotourism 2656:6 2656:11 Eddy 2651:5 2653:18 EDF 2338:6 2338:7, 2338:9 2338:11 2338:11 2338:12 2338:15 2338:18 2338:20	2338:23 2339:4, 2339:6 2339:9 2339:10 2339:13 2339:16 2339:17 2339:19 2339:22 2340:4, 2340:7 2340:8, 2340:9 2340:11 2340:14 2340:15 2340:18 2340:21 2340:22 2340:23 2344:12 2347:4, 2357:2 2357:6, 2358:5 2442:12 2443:3 2444:14 2445:2 2445:10 2445:22 2447:20 2481:3, 2517:7 2517:10 2519:11 2519:20 2520:2 2520:12 2521:1, 2522:6 2525:6 2526:21 2527:18 2528:5 2528:22 2536:25 2537:4, 2538:2 2538:14 2538:15 2538:17 2539:1, 2539:8 2539:17 2541:5 2543:12 2545:25 2549:19 2556:8 2556:15 2556:23 2558:7 2589:22 2589:24 2590:2 2591:14 2591:17 2592:20	2592:24 2594:16 2596:2, 2596:5 2598:19 2599:15 2608:22 2609:22 2610:23 2610:24 2611:14 2620:17 2622:25 2715:3 2717:14 2718:14 2719:10 2729:19 2732:4, 2732:9 2735:4, 2741:5 2775:4 EDF's 2338:7 2354:6 2356:21 2521:2, 2521:6 2521:9 2521:12 2539:5 2541:14 2541:16 2583:19 2592:14 2593:16 2594:19 2595:13 2598:15 2600:2 2616:21 2622:8, 2718:3 2718:5 2718:25 2719:3 EDF-sponsored 2579:25 edification 2666:5 2674:24 2681:11 editor 2747:19 education 2330:7, 2341:5 2490:22 2490:23 2491:9 2501:11 2505:24 2539:10 2539:18 2624:8 2744:10 2744:16 2745:24
---	--	--	--	--

Volume 8
9/29/2021

EIB Ozone Hearing

2748:20	2597:16	eight-hour	2330:3	2677:8
2748:22	2598:12	2732:23	2335:12	2681:14
2749:3	2598:16	either 2344:12	2337:23	2681:16
2750:20	2598:24	2345:22	2428:1	2682:3
2752:17	2599:13	2376:6	2488:20	2682:11
2760:2, 2763:5	2599:21	2401:19	2496:2, 2537:4	2683:21
educational	2600:7	2427:11	2562:7	2688:12
2592:5	2601:24	2431:24	2591:24	2689:4
effect 2410:6	2601:25	2452:10	2774:18	2707:18
2455:23	2603:23	2459:11	elizabeth@de...	2707:18
2456:2, 2498:6	2606:7, 2647:7	2476:5, 2477:1	2330:5	2707:19
2517:24	2647:15	2517:18	else's 2627:2	2715:2, 2723:9
2557:24	2667:15	2526:6	embrace 2491:1	2726:1
2561:13	2676:19	2533:22	emergence	2768:14
2574:11	effects 2594:1	2549:8	2605:25	emissions
2622:12	2720:2, 2728:4	2556:25	emergency	2338:10
2652:6	2729:2	2593:7, 2640:7	2502:10	2338:13
2725:22	2733:16	2681:14	2720:3	2338:15
2726:4, 2758:3	efficacious	2730:18	emission	2338:18
2758:5	2579:2	2733:2	2340:14	2338:23
2758:10	efficacy 2579:8	El 2333:2	2358:15	2339:5
2758:21	efficiency	elaborate	2370:6	2339:13
2759:10	2386:3	2582:14	2429:16	2339:18
2769:11	2547:16	2582:17	2433:1	2339:19
2769:15	2547:16	2629:4, 2629:7	2434:20	2339:22
effective	efficient	2633:10	2454:6	2340:16
2436:8	2420:13	2633:12	2467:18	2340:24
2438:11	2438:11	2718:24	2471:13	2346:6
2439:12	2605:2	2736:13	2471:17	2346:23
2445:24	2605:25	2765:15	2474:3	2351:21
2453:1	2643:8	elaborated	2494:25	2357:6
2472:12	2701:15	2757:22	2503:15	2357:25
2517:24	effort 2372:19	elderly 2369:3	2527:11	2369:11
2519:1	2480:15	2493:14	2536:1, 2549:3	2370:3
2526:17	2514:1	2501:25	2549:7, 2551:1	2373:11
2527:10	efforts 2592:16	2662:12	2551:25	2382:11
2593:18	egregious	2720:5	2567:21	2428:9
2598:3	2458:14	2752:12	2568:19	2428:18
2598:25	ehiser@jhjla...	elders 2509:21	2569:1, 2569:6	2428:19
2610:11	2329:6	electd 2495:12	2569:10	2428:23
2642:6, 2705:3	EHS 2516:11	electric	2569:14	2429:8
effectively	EIB 2327:3	2660:13	2570:2	2429:13
2440:3	2343:25	2660:14	2570:19	2429:15
2472:17	2354:25	electrician	2571:2, 2571:6	2429:18
2595:5	2365:17	2658:14	2571:8, 2575:5	2430:10
2618:10	2369:16	electrified	2579:10	2430:23
effectiveness	2488:8, 2493:9	2660:14	2581:9	2431:1, 2431:8
2345:25	2494:12	electronically	2581:11	2433:2, 2434:9
2346:15	2625:21	2527:6	2603:2	2459:20
2356:24	2652:25	elementary	2608:11	2468:8
2357:10	2663:2	2655:8	2609:22	2470:25
2358:8, 2358:9	2754:18	elements 2752:5	2609:22	2472:17
2361:15	2755:25	elevated 2414:6	2642:13	2472:20
2361:24	2756:2, 2762:5	2551:24	2646:13	2477:3
2430:25	2763:1	2566:17	2653:15	2491:22
2432:25	2763:14	2566:19	2667:15	2491:23
2433:21	EIB's 2351:13	2720:1, 2750:5	2672:15	2493:22
2478:1	eight 2360:24	2754:3	2673:12	2495:3
2550:21	2488:9	eliminate	2674:16	2497:10
2590:7	2554:11	2518:8	2676:18	2498:3, 2498:7
2597:10	2680:9	Elizabeth	2676:22	2501:16

Volume 8
9/29/2021

EIB Ozone Hearing

2501:21	2550:15	2586:15	2728:18	2609:11
2502:8	2550:18	2589:1, 2589:6	2730:16	2609:12
2503:11	2551:11	2589:12	2730:21	emphasize
2506:22	2551:15	2592:17	2731:2, 2748:8	2482:14
2507:15	2552:5	2595:1, 2596:3	2748:10	2656:6
2507:23	2552:14	2596:7	2748:11	emphysema
2518:6	2552:18	2596:10	2748:23	2495:11
2518:15	2552:20	2596:12	2748:24	2509:17
2518:19	2553:9	2596:13	2772:7, 2773:1	2651:11
2519:5	2553:12	2600:19	2775:18	employ 2607:7
2519:23	2553:17	2600:21	2776:17	employed
2520:7, 2520:8	2553:20	2601:6	2776:19	2346:18
2520:23	2554:2, 2554:7	2603:21	emit 2429:8	2591:20
2523:25	2554:9	2612:21	2525:25	2592:1
2527:7, 2540:7	2554:11	2612:24	2540:1, 2540:3	2783:11
2540:21	2554:13	2625:14	2540:12	2783:14
2540:23	2554:14	2642:4	2540:15	employee
2540:25	2554:18	2644:19	2540:22	2498:21
2541:3, 2541:6	2554:25	2644:21	2540:23	2783:13
2542:8, 2542:9	2555:14	2644:25	2551:5	employees
2542:13	2555:21	2645:7, 2648:2	2552:10	2499:19
2542:17	2555:24	2653:12	2553:9	employer
2542:20	2556:1, 2556:9	2658:6, 2659:7	2553:16	2490:17
2542:22	2557:7, 2557:9	2666:8	2579:13	2746:4
2543:3, 2543:7	2559:10	2666:12	2601:4	employment
2543:8	2559:10	2667:4, 2667:9	2662:20	2746:11
2543:14	2559:15	2668:24	2719:16	EMS 2505:22
2543:17	2564:23	2672:11	2721:7	enable 2527:11
2543:20	2566:5, 2566:8	2673:19	2750:19	enabled 2366:3
2543:22	2566:18	2674:12	2762:20	2406:1, 2406:7
2544:1	2567:7, 2567:9	2674:13	emits 2372:14	2488:17
2544:15	2567:25	2675:20	emitted 2551:7	encompasses
2544:16	2568:4	2678:18	2551:18	2532:21
2544:16	2568:23	2679:1, 2680:4	2608:20	encountered
2544:17	2569:7, 2570:4	2682:6, 2682:8	2609:15	2548:6
2544:19	2570:22	2683:5	2621:2, 2721:9	encourage
2544:24	2571:14	2683:23	2730:13	2394:13
2544:25	2571:18	2683:24	emitters	2395:4
2545:3, 2545:9	2571:22	2684:5, 2684:5	2338:21	2395:11
2545:11	2573:14	2684:10	2470:15	2491:21
2545:12	2573:17	2684:11	2470:18	2507:21
2545:14	2573:25	2689:6	2546:12	2526:6, 2663:2
2545:20	2574:4	2689:11	2571:7, 2575:9	2664:6
2546:4, 2546:9	2574:15	2694:8	2575:11	encouraged
2546:13	2579:7, 2579:9	2694:22	2575:13	2493:22
2546:18	2579:17	2697:21	2575:15	encouraging
2547:14	2579:20	2704:8	2575:25	2664:7
2547:20	2579:23	2705:14	2580:13	endeavor
2548:6, 2548:9	2580:2, 2580:5	2705:21	2646:12	2386:12
2548:12	2580:6	2707:9	2646:14	ended 2403:3
2548:14	2580:10	2718:15	2681:19	2617:24
2548:16	2580:13	2719:12	2682:12	ends 2697:20
2548:17	2580:14	2721:13	2690:25	energy 2333:9
2548:19	2580:15	2722:16	emitting 2546:7	2333:17
2549:6	2580:24	2722:21	2548:17	2491:1
2549:11	2581:3	2722:24	2608:7, 2608:8	2498:16
2549:16	2583:20	2723:2, 2723:9	2608:10	2592:9, 2647:2
2549:21	2584:7	2723:11	2608:13	2656:5, 2656:5
2549:22	2585:10	2725:17	2608:15	2659:21
2550:4, 2550:6	2586:12	2726:12	2608:16	2678:24
2550:10	2586:14	2727:16	2609:6, 2609:8	2683:2

Volume 8
9/29/2021

EIB Ozone Hearing

2683:14	2408:6, 2584:4	2391:10	2747:11	2430:6
2749:24	English 2745:25	2458:16	2747:13	2430:18
enforce 2458:23	ENGOS 2524:7	2491:13	2747:14	2431:24
2760:23	2525:6	2491:19	2747:17	2435:25
enforceable	enhanced	2493:10	2747:19	2449:16
2437:23	2356:24	2495:14	2747:20	2465:6
2439:12	2457:17	2497:24	2747:23	2465:14
2760:16	2577:17	2498:1	2747:25	2469:13
2760:18	enjoyed 2479:19	2503:12	2748:3	2471:21
2761:2, 2761:8	enlightening	2559:12	2750:25	2476:9
2761:10	2536:6	2599:4	2751:15	2476:14
enforcement	ensure 2369:21	2651:13	2751:19	2494:2
2374:25	2373:7	2660:11	2751:23	2543:11
2458:1	2373:17	2720:7	2752:1, 2752:6	2544:2
2458:21	2437:22	2722:15	2753:1, 2754:7	2544:19
2458:25	2494:1	2741:11	2754:11	2547:1
2502:25	2494:18	2747:14	2754:18	2547:18
2747:5	2502:25	2751:18	2754:20	2549:4, 2549:5
2747:14	2503:2, 2510:4	2751:24	2754:22	2549:25
2751:22	2518:3, 2653:5	2757:13	2755:21	2564:24
2758:11	2653:18	2779:2	2757:7, 2759:5	2568:21
engaged 2345:6	2664:4, 2759:9	2779:15	2759:17	2569:2
2345:13	ensures 2445:25	environmental	2759:20	2569:10
2376:14	2769:25	2327:1, 2328:4	2759:24	2571:18
2517:7	ensuring	2329:15	2760:5, 2760:8	2571:21
engagement	2510:17	2330:2	2760:13	2599:8
2517:8, 2521:2	2747:5	2330:12	2760:21	2599:17
2747:8, 2767:1	enter 2398:22	2331:17	2761:20	2602:18
engine 2392:21	entered 2529:1	2331:19	2761:24	2602:22
2400:12	2758:24	2334:3, 2334:4	2762:1, 2762:3	2603:6, 2603:8
2403:10	entering	2338:5, 2339:3	2762:4, 2762:9	2604:8
2408:1	2569:25	2340:3	2763:1	2606:15
engineer	entertain	2361:20	2763:15	2606:18
2391:13	2426:3	2367:19	2764:15	2606:20
2592:21	entertaining	2371:25	2766:16	2607:3, 2608:1
engineering	2713:15	2373:5	2767:23	2609:22
2391:11	entire 2440:16	2374:19	2767:25	2611:1
2391:15	2563:20	2374:21	2769:4	2614:16
2391:16	2566:17	2391:15	2771:19	2619:2, 2619:3
2391:17	2568:1, 2568:7	2415:4	2772:15	2619:5, 2619:9
2549:7, 2569:1	2569:20	2432:21	2774:25	2632:9
2592:7, 2592:8	2589:12	2488:7, 2493:3	environmenta...	2633:23
2602:23	2618:13	2498:5	2524:10	2634:2, 2634:6
engineers	2699:9	2500:25	Envtl 2338:16	2634:6, 2647:5
2698:7	2753:17	2502:15	2338:21	2647:8
engines 2391:20	entirety	2510:9	2339:15	2672:10
2392:5	2389:21	2528:24	2339:18	2675:10
2392:22	2564:5	2529:21	2339:21	2677:24
2394:6, 2394:7	entitled	2542:5	EP 2341:6	2678:20
2394:8	2354:24	2577:12	2341:7	2678:20
2394:10	2362:17	2577:20	2743:20	2699:1
2394:14	2381:2	2578:9, 2592:4	2748:25	2700:24
2394:19	2451:14	2592:8	EPA 2338:16	2707:18
2395:4	2475:3, 2475:4	2592:21	2339:4	2718:22
2395:25	2564:22	2592:22	2340:10	2736:6
2396:7, 2396:9	environment	2621:24	2346:9	2746:22
2396:16	2328:15	2651:1, 2736:3	2346:11	2748:3
2396:17	2328:17	2745:13	2346:21	2757:25
2397:17	2328:22	2746:10	2351:20	2771:14
2400:1, 2401:5	2367:20	2746:16	2382:15	2771:23
2403:19	2373:1, 2373:6	2747:4	2429:24	EPA's 2382:6

Volume 8
9/29/2021

EIB Ozone Hearing

2382:16	2452:15	2696:20	ERG's 2551:1	2346:14
2433:3	2453:12	2697:3, 2704:4	2573:5	2356:24
2463:19	2465:23	2704:5	2594:11	2357:6, 2357:7
2464:5, 2464:8	2468:12	2704:12	2602:5	2357:10
2552:5, 2552:8	2486:9	2705:11	2642:12	2358:5, 2358:7
2594:15	2491:18	2718:14	2666:7, 2667:3	2477:4
2594:20	2493:20	2748:10	2668:6, 2671:6	2547:15
2602:15	2497:15	2748:23	2673:23	2549:16
2603:7, 2604:9	2498:12	equipments	2687:4, 2695:7	2549:20
2606:19	2498:25	2452:25	2701:2, 2778:7	2550:1, 2551:1
2614:12	2503:14	equitable	ERG/NMED 2682:8	2551:10
2614:13	2507:17	2503:4	Eric 2329:3	2551:22
2634:12	2516:4	equity 2501:8	2400:23	2552:2
2778:13	2523:25	2501:13	2421:1	2552:17
EPA-developed	2533:6	2501:17	2529:16	2552:20
2544:5	2535:14	equivalent	error 2638:8	2552:23
epidemiologists	2535:15	2435:14	2680:7, 2680:7	2554:6, 2567:9
2739:13	2535:17	2437:23	errors 2778:8	2568:4
equal 2432:10	2535:20	2439:12	2778:10	2568:23
2609:8, 2671:8	2538:3	2440:5, 2543:9	erudite 2655:2	2573:16
2671:13	2545:16	2551:16	Espanola 2753:5	2573:19
2674:2	2552:4	2553:22	2753:10	2580:1, 2594:7
2688:19	2552:10	2584:6	especially	2594:11
2688:20	2573:14	2734:17	2369:3, 2370:8	2594:13
2689:22	2573:22	equivalents	2404:1	2594:17
2759:16	2573:25	2468:9	2493:15	2594:19
equally 2439:12	2586:10	ERG 2464:18	2495:3	2595:19
2769:8	2586:17	2467:7	2503:23	2596:7
equals 2360:18	2587:13	2468:22	2506:6	2596:16
equations	2605:20	2551:3, 2552:5	2651:14	2596:18
2549:7, 2569:1	2607:13	2602:14	2662:11	2597:9
equipment	2640:7	2602:15	2685:8	2597:13
2339:20	2640:25	2602:21	2720:16	2598:8
2360:13	2641:1	2602:22	2728:19	2598:15
2360:13	2645:13	2603:2, 2603:6	essence 2672:10	2598:16
2369:10	2645:21	2603:13	2672:19	2599:8, 2600:3
2370:5	2645:24	2604:10	2675:5, 2695:6	2601:23
2397:20	2653:15	2606:15	2696:23	2602:16
2428:8	2666:11	2606:22	2697:14	2603:12
2428:17	2668:3, 2668:4	2615:8, 2645:6	2704:20	2604:7, 2606:1
2428:21	2668:17	2647:4	2704:23	2606:6
2428:21	2668:20	2668:21	essential	2606:16
2428:24	2670:8, 2670:8	2669:20	2555:23	2606:23
2429:11	2670:13	2670:5	essentially	2607:23
2429:19	2670:19	2673:14	2384:17	2608:19
2429:20	2671:4, 2671:8	2675:1	2418:14	2608:25
2430:13	2671:9	2675:10	2418:20	2609:14
2430:15	2671:10	2675:19	2419:2, 2420:9	2609:19
2431:15	2674:14	2676:12	2565:5, 2703:2	2612:23
2434:21	2677:16	2677:7	establish	2616:20
2437:15	2678:25	2677:18	2683:9, 2757:6	2616:21
2437:17	2679:8	2679:1	2761:9	2616:23
2437:18	2679:11	2679:19	established	2616:23
2438:8, 2439:1	2679:21	2680:19	2455:22	2686:17
2449:19	2679:22	2681:5, 2684:9	2533:8, 2647:9	2725:3
2449:24	2682:6, 2683:7	2684:12	2672:10	estimated
2449:25	2683:10	2684:20	2720:21	2357:1
2449:25	2683:12	2684:25	establishes	2357:24
2450:5, 2450:7	2683:17	2689:10	2473:4	2357:25
2450:10	2684:11	2695:11	estimate	2362:22
2451:5, 2452:2	2685:7, 2685:9	2778:11	2339:15	2470:14

Volume 8
9/29/2021

EIB Ozone Hearing

2519:23	2614:6	evaluation	2379:14	2336:16
2540:16	2614:13	2439:5	2379:16	2336:18
2547:18	2614:21	2450:17	2380:6	2336:21
2550:11	2627:18	2450:19	2388:21	2337:5, 2337:5
2572:2, 2593:9	2676:19	2454:2	2418:11	2337:6, 2337:7
2594:12	2680:20	2456:15	2419:13	2337:7
2603:6, 2603:8	2680:20	2456:16	2419:20	2337:17
2603:22	2681:20	2456:25	2423:3, 2423:5	2337:19
2606:20	2682:17	2459:25	2423:25	2337:21
2624:11	2687:4	2566:12	2424:15	2337:22
2667:14	2719:10	evening 2650:21	2424:16	2337:25
2680:4	2723:2	2664:12	2424:24	2406:16
2681:18	2753:19	2694:3, 2694:4	2425:3	2428:5
2694:7, 2694:8	estimating	2715:5	2425:22	2515:19
2694:22	2570:4, 2579:7	2716:14	2425:23	2524:16
2695:5, 2695:9	estimation	2716:23	2426:3	2531:21
2695:10	2568:19	2735:20	2426:10	2537:14
2752:10	2569:7	2742:16	2427:6	2582:3
2753:11	2713:12	2760:10	2481:14	2588:16
estimates	et 2338:9	2764:12	2482:15	2591:9
2338:16	2338:12	2771:7	2482:15	2637:16
2358:15	2338:15	2774:13	2482:21	2665:5, 2696:2
2433:20	2338:18	2781:1	2483:3	2708:5, 2710:2
2454:6	2338:20	2782:18	2483:21	2717:10
2454:16	2338:23	event 2379:14	2484:1	2738:7
2464:10	2339:6	2419:8	2484:24	2743:10
2464:13	2339:10	2424:17	2484:25	2768:23
2470:16	2339:13	2425:6	2485:1, 2539:2	2771:1
2478:1	2339:17	2437:13	2563:25	2774:22
2542:20	2339:19	2437:14	2728:24	examined 2387:8
2542:22	2433:21	2478:22	2731:6	2410:3, 2428:4
2543:3	2543:5	2511:15	2743:17	2515:18
2543:11	2544:12	2514:11	2743:21	2524:15
2543:14	2545:19	events 2581:10	2775:4	2537:13
2544:2	2549:18	2581:11	2779:13	2591:8
2544:18	2551:13	eventually	2782:11	2637:15
2551:3	2551:23	2705:18	evolving 2535:5	2665:4, 2717:9
2551:20	2553:18	evergreen	exacerbated	2722:11
2552:13	2554:10	2530:17	2596:25	2743:9
2555:17	2555:3, 2555:6	2530:18	2626:20	2774:21
2564:24	2555:9, 2634:4	everybody	exacerbates	example 2346:11
2571:14	2645:15	2375:10	2651:11	2355:15
2572:6	2645:25	2392:8, 2422:3	exact 2456:7	2358:4, 2365:2
2574:16	ethnicity	2422:21	exactly 2364:16	2394:3, 2411:4
2585:10	2760:1	2712:15	2428:19	2412:5, 2415:8
2585:11	ethyl 2727:16	2716:7	2436:13	2422:9
2590:7	2728:6	everybody's	2545:15	2454:11
2594:16	evaluate	2711:15	2604:5	2485:15
2598:19	2461:25	everyone's	2640:20	2527:5, 2555:3
2602:25	2463:9, 2528:3	2662:11	2686:15	2555:22
2603:2	2530:12	evidence	2702:23	2570:6
2603:16	2667:10	2347:23	2710:8	2583:18
2604:3, 2604:7	2730:5	2347:24	2733:21	2589:7
2606:9	2778:20	2349:3, 2349:9	examination	2594:17
2606:13	evaluated	2349:9	2335:11	2599:2, 2601:4
2606:15	2430:20	2349:16	2335:14	2601:9
2606:15	2467:22	2355:5	2336:9	2607:15
2606:17	evaluates	2358:20	2336:11	2641:20
2608:22	2446:10	2363:15	2336:12	2645:9, 2646:5
2609:22	evaluating	2363:18	2336:14	2669:6
2609:23	2756:25	2363:21	2336:16	2670:11

Volume 8
9/29/2021

EIB Ozone Hearing

2736:4, 2736:6 2738:20 2747:6, 2753:5 2754:2 2758:19 2772:21 examples 2415:7 2753:4 exceed 2772:8 exceedance 2731:9 exceedances 2620:25 exceeded 2730:25 2731:6 exceeding 2730:17 2779:24 exceeds 2392:10 2518:17 Excel 2377:11 2378:23 excellent 2351:6 2451:20 2681:1 2696:15 2700:4 exception 2394:15 exceptions 2639:14 excerpt 2563:22 excess 2540:7 2540:23 2589:6, 2613:4 exclude 2365:7 2377:14 2380:24 2383:1 2384:17 2418:11 2418:11 2478:5, 2478:9 2641:4 excluded 2376:9 2380:6, 2380:9 2383:4, 2383:8 2383:10 2384:14 2386:7 2386:14 2418:19 2481:10 2481:15 2526:7 2757:19 excludes 2525:21 2617:25	excluding 2377:10 2378:22 2379:21 2379:22 2526:12 2617:23 2759:11 exclusion 2418:16 2418:23 2481:20 2482:1 exclusions 2423:8, 2524:2 2525:4 excuse 2347:6 2387:15 2387:22 2404:24 2495:20 2504:5 2512:15 2590:15 2634:6 2639:10 2640:1 2646:11 2648:4 2648:22 2665:19 2671:10 2675:15 2681:25 2682:23 2683:13 2684:21 2685:8, 2687:2 2690:6, 2709:4 2765:13 execute 2533:16 executive 2662:17 2759:4, 2759:8 2759:13 2759:14 2759:18 2759:20 2760:10 2760:15 2760:17 2760:20 2760:22 2761:4, 2761:7 2761:9 exempt 2499:16 2557:11 2557:13 2557:17 2775:16 2776:13	exempting 2454:23 2775:12 2775:19 exemption 2498:22 2525:15 exemptions 2625:18 exercise 2427:4 exhibit 2343:2 2351:2 2355:15 2356:23 2359:8 2381:10 2390:24 2399:24 2404:12 2428:10 2428:11 2444:9 2444:13 2444:19 2445:14 2448:5, 2448:5 2452:14 2452:14 2462:7 2462:23 2463:6, 2466:6 2477:8, 2486:2 2486:6 2513:19 2513:25 2514:8, 2516:6 2516:6 2516:15 2516:16 2519:22 2521:6 2528:15 2528:18 2528:19 2538:9 2538:14 2538:15 2538:17 2538:17 2563:18 2564:21 2592:24 2602:6, 2616:2 2616:5, 2616:7 2616:10 2617:2, 2617:6 2637:24 2637:24 2667:21 2682:5, 2683:9 2683:16	2683:22 2712:18 2713:4 2717:14 2717:16 2729:19 2730:1, 2741:5 2743:15 2743:16 2744:16 exhibits 2338:3 2342:24 2343:16 2344:12 2347:4, 2348:8 2355:14 2358:12 2379:13 2379:22 2380:5, 2380:9 2390:20 2390:21 2395:14 2404:15 2433:7, 2462:3 2467:5, 2514:6 2528:17 2529:1, 2529:4 2538:16 2538:19 2539:1 2591:12 2591:14 2591:17 2593:5 2614:12 2614:14 2667:13 2676:21 2682:22 2717:14 2743:20 2781:6, 2781:8 existing 2369:23 2436:6 2446:11 2458:24 2503:6 2510:18 2526:1 2526:15 2526:16 2532:23 2558:12 2593:11 2625:17 2653:7 2778:16 exists 2628:5 expand 2659:11	2756:5 expanded 2729:20 expanding 2465:12 2644:11 expect 2639:16 2724:23 expectancy 2753:25 expedite 2427:11 expedition 2642:20 expeditious 2642:25 expensive 2644:17 2648:18 2704:7, 2709:5 experience 2391:7, 2509:7 2530:24 2561:20 2592:12 2625:24 2629:4, 2700:6 2700:7 experienced 2597:4, 2750:7 experiencing 2699:25 2765:18 expert 2347:17 2351:15 2351:17 2351:25 2352:17 2353:2, 2353:9 2353:15 2353:22 2353:23 2374:22 2754:7 expertise 2734:5, 2734:9 2739:4, 2739:8 2740:5, 2746:9 experts 2352:15 2352:16 2433:18 2451:3 2572:25 Expires 2783:18 2783:20 explain 2454:25 2456:19 2483:10 2550:24 2593:12 2598:2
---	---	---	---	--

Volume 8
9/29/2021

EIB Ozone Hearing

2606:11	2708:21	2429:19	2622:16	2468:8
2679:6	expressly	2430:23	2623:1	2518:22
2680:21	2488:11	2431:16	2623:13	facing 2409:6
2696:13	extend 2534:14	2431:19	2623:19	2495:2
2720:19	2623:18	2431:24	2625:17	fact 2344:24
2745:14	extends 2630:21	2432:2, 2432:3	2625:22	2345:7
explained	extension	2432:5, 2432:9	2626:2, 2626:4	2351:15
2379:5, 2486:6	2440:7	2432:10	2629:12	2352:15
2553:7, 2634:7	2440:12	2435:6	2652:25	2358:18
2668:19	2440:12	2435:15	2669:8, 2676:1	2368:15
2684:1	2662:24	2436:1, 2436:7	2676:2, 2676:3	2383:15
2729:21	extensions	2436:9	2676:5, 2676:7	2383:16
Explaining	2385:10	2449:18	2683:4	2384:24
2339:7	extensive	2450:13	2698:15	2394:8, 2400:9
explains 2597:5	2351:9	2450:13	2700:20	2425:8, 2448:9
explanation	2432:21	2450:15	2718:11	2455:9
2381:2	2456:12	2452:1, 2453:5	2722:12	2455:25
2486:19	2469:23	2453:8	2730:21	2457:20
2536:6	2470:5, 2471:5	2453:22	2748:17	2474:22
2585:21	2560:20	2454:23	2750:4, 2750:8	2493:23
2616:19	extent 2356:1	2455:22	2750:19	2503:1
explore 2733:21	2454:7, 2456:6	2456:13	2750:22	2532:21
2733:24	2467:22	2468:8	2760:14	2566:5
export 2368:9	2485:2	2473:11	2763:10	2572:10
exposed 2483:1	2535:16	2473:21	2765:20	2644:10
2626:15	2561:15	2486:8	2765:22	2668:8, 2673:3
2658:18	2733:19	2486:10	2766:4	2677:22
2723:16	extracted	2512:17	2775:13	2685:21
2726:18	2470:2	2524:3, 2525:4	2775:16	2687:17
2726:25	extracting	2525:8, 2525:9	2775:18	2704:16
exposure 2594:2	2368:8	2525:10	2775:20	2705:4
2621:1	extraordinarily	2525:10	facility	2705:16
2623:10	2607:23	2525:11	2440:18	2734:15
2625:25	2642:4	2525:16	2458:13	2740:7
2718:9, 2720:1	extraordinary	2525:18	2528:4, 2531:2	2753:18
2721:16	2506:14	2525:24	2565:14	2758:15
2721:21	2644:22	2526:1, 2526:8	2569:13	2768:4
2722:5	2648:8	2526:10	2586:25	2769:22
2723:17	extrapolates	2526:12	2617:17	factor 2338:16
2723:18	2551:18	2526:15	2618:7, 2618:9	2564:23
2725:1, 2725:6	extrapolating	2532:15	2668:3	2569:9, 2571:8
2725:10	2567:20	2532:23	2686:14	2646:18
2726:11	extreme 2338:23	2533:6	2696:17	2707:18
2727:20	2548:5	2534:21	2698:9	factors 2433:1
2727:23	extremely	2539:21	2698:16	2467:18
2728:5, 2728:8	2372:10	2552:4, 2552:9	2700:21	2471:13
2732:24	2518:23	2556:24	2700:21	2471:17
2738:21	2519:4, 2648:6	2556:25	2757:4	2549:7, 2569:1
2738:22	eye 2395:4	2557:14	2758:22	2569:6
2739:1, 2739:7		2557:18	2770:6	2569:10
2740:10	F	2558:12	2772:22	2569:14
exposures		2570:11	2773:1	2571:2, 2571:6
2727:21	Fabulous 2639:6	2579:17	2775:21	2571:11
2728:8, 2754:5	face 2369:8	2581:16	facility's	2646:13
expound 2553:2	2372:4	2586:1, 2599:5	2603:21	2647:9
express 2651:1	faces 2409:3	2599:21	2776:6	2681:14
expressed	facilitate	2600:16	facility-spe...	2681:16
2401:2, 2448:6	2542:9	2603:25	2570:16	2682:4, 2682:9
2472:6	facilities	2604:4, 2605:3	facility-wide	2682:11
2690:13	2340:4	2617:19	2434:14	2683:21
2690:14	2414:25	2618:4	2434:17	2684:12

Volume 8
9/29/2021

EIB Ozone Hearing

2707:18	family 2499:16	2472:24	2431:21	fewer 2476:8
2707:19	2505:8	2473:1, 2473:2	2527:17	2678:25
2739:10	2505:13	2473:6	2528:4, 2530:4	2678:25
facts 2484:11	2505:22	2493:23	2531:3	2686:2, 2686:2
2756:1	2507:6	2494:3, 2494:5	2539:20	2689:4
factual 2353:14	2508:25	2517:19	2539:25	2701:16
faculty 2766:24	2753:22	2517:22	2554:22	FF 2340:21
fad 2762:2	2772:23	2517:22	2577:18	2591:16
fading 2666:16	fancy 2630:6	2518:10	2582:16	2591:18
fail 2533:13	far 2395:7	2519:3, 2519:9	2582:16	2593:5
2534:4	2409:15	2592:15	2582:17	field 2382:8
failed 2745:11	2463:14	2604:19	2593:16	2459:12
2756:24	2476:8, 2476:8	2621:1	2595:15	2497:23
2757:1, 2757:2	2490:17	2690:15	2596:22	2503:4
failing 2372:12	2525:11	2690:17	2600:15	2549:14
2372:18	2587:17	2720:11	2623:19	2555:10
2651:4	2640:13	2731:17	2624:12	2584:9
fails 2458:1	2659:7, 2688:1	2732:6	2624:17	2584:14
2681:12	2700:1, 2701:3	2732:15	2624:22	2652:19
failure 2458:18	far-reaching	2732:17	2626:13	2746:9
2535:13	2499:8	2745:11	2626:18	2747:12
2761:20	fast 2745:19	2746:23	2629:5, 2629:6	2747:22
faint 2665:20	fate 2663:16	2746:25	2629:7	2747:22
fainter 2643:16	father's 2505:8	2748:4	2631:15	fields 2699:19
fair 2446:9	fatigue 2728:1	2757:11	2631:16	Fifteenth
2448:16	favor 2426:9	2757:14	2646:7, 2646:9	2333:13
2457:6	2476:21	2757:17	2671:25	fight 2728:1
2465:19	2513:12	2758:1	2681:18	figure 2398:7
2506:22	Fe 2328:12	2758:12	2683:22	2401:14
2565:12	2328:18	2759:4, 2759:9	2703:15	2419:25
2703:17	2329:9	2759:13	2718:11	2613:11
2751:19	2329:17	2760:20	2719:16	2620:18
2752:21	2331:14	2761:10	2723:24	2666:22
fairly 2395:6	2331:20	2767:18	2726:16	2696:16
2413:24	2332:6	2768:20	2726:23	figures 2484:11
2434:22	2332:23	2769:6	2727:4, 2727:5	figuring
2456:12	2333:19	2769:18	2727:19	2700:25
2466:9, 2658:6	feared 2354:20	2771:14	2728:23	file 2359:22
2663:18	fearful 2372:7	2777:21	2749:5, 2749:9	2408:1
2724:17	feasibility	2778:13	2749:17	2444:19
fairness	2355:5	2779:8	2752:23	2667:21
2384:25	2375:18	feedback	2763:7	2758:14
faith 2371:24	feasible 2355:1	2506:24	feisty 2487:15	filed 2363:2
2372:1	2355:23	2751:8	Felicia 2327:14	2363:16
fallen 2555:7	2358:19	feel 2345:8	2328:3	2364:18
familiar 2395:9	2397:8	2351:8, 2387:2	2365:16	2433:16
2403:6	2528:10	2396:12	2488:6, 2595:7	2444:14
2568:22	Feb 2340:17	2403:25	2742:18	2462:7
2578:14	federal 2368:21	2466:25	felicia.l.or...	2468:18
2587:19	2429:24	2499:24	2328:3	2525:23
2622:3, 2622:6	2436:22	2513:9, 2521:3	fellow 2509:6	2538:13
2734:23	2436:25	2586:6	2651:4	2558:20
2735:2	2440:6, 2445:7	2586:20	2653:17	2717:18
2739:14	2445:16	2587:16	felt 2350:4	2758:16
2764:25	2445:18	2658:4	2355:6, 2355:7	2758:20
2767:8	2446:10	2727:14	2372:11	files 2376:5
families	2446:12	2782:10	2464:9	filing 2364:8
2506:19	2449:16	feeling 2585:4	fence 2438:13	2416:17
2507:11	2450:11	feelings 2424:6	fence-line	2443:1
2507:13	2468:19	2481:9	2708:9	2526:24
2664:4	2472:18	feet 2431:18	Ferrara 2465:23	2528:21

Volume 8
9/29/2021

EIB Ozone Hearing

2602:4 filings 2419:21 2432:19 2528:6, 2529:5 2638:13 filled 2506:1 final 2359:10 2379:4 2397:15 2498:23 2616:4, 2663:3 2752:20 2754:2 finalized 2607:4, 2632:8 finally 2494:22 2503:7 2527:15 2528:2 2646:15 2660:25 2663:9 2702:25 2752:21 2758:23 2761:22 financial 2497:6 2757:12 2757:14 2757:17 financially 2783:14 find 2340:23 2369:20 2373:7 2426:23 2429:20 2457:7, 2489:2 2494:17 2502:11 2502:21 2535:21 2544:1, 2546:9 2546:11 2548:19 2548:25 2552:16 2555:23 2589:18 2609:23 2638:8 2639:19 2645:14 2649:4, 2653:4 2663:5, 2683:8 2683:16 2683:21 2705:6 2705:18 2705:19	2760:19 2776:18 finding 2544:22 2549:2 2704:21 2727:1 findings 2547:24 2547:25 2548:2, 2548:8 2556:12 2581:6 2585:16 2681:13 finds 2554:11 2599:22 2709:8 fine 2387:3 2417:13 2417:14 2427:3 2475:13 2512:11 2523:21 2576:23 2613:20 2616:16 2635:21 2635:23 2693:4 2717:24 fine-tune 2710:8 finger 2455:18 finish 2374:12 2515:2 2706:19 2714:13 2715:24 finished 2715:5 finishing 2515:1, 2782:3 firefighters 2505:21 2506:17 firing 2685:9 firm 2463:9 2493:24 2592:22 2711:16 2711:17 firms 2605:1 2605:7, 2605:9 first 2343:12 2346:12 2351:19 2352:24 2356:19 2367:2, 2371:4 2371:13 2377:19	2387:7 2401:10 2403:5, 2428:3 2437:19 2439:1, 2489:2 2490:2 2492:19 2496:21 2500:19 2504:20 2505:25 2508:19 2515:17 2518:3, 2524:2 2524:14 2527:21 2537:9 2537:12 2543:2 2553:18 2578:14 2591:7, 2594:7 2607:15 2620:11 2630:5 2637:14 2644:1 2644:24 2645:10 2649:13 2650:15 2654:21 2657:16 2661:21 2662:17 2663:4, 2665:3 2669:8 2696:13 2707:14 2716:8, 2717:8 2724:6 2735:22 2743:8 2744:22 2774:20 firsthand 2503:19 firstly 2544:8 fit 2714:8 fitted 2429:4 five 2366:5 2367:6 2371:16 2432:4, 2432:5 2480:8, 2489:1 2490:6 2492:22 2496:24 2500:22 2504:23 2508:22	2515:2, 2540:2 2540:3 2544:18 2547:8, 2566:8 2566:13 2566:16 2567:1 2571:15 2572:4 2572:11 2574:3 2596:19 2601:13 2608:15 2608:17 2636:4 2649:14 2649:22 2650:18 2654:25 2657:14 2661:24 2688:22 2688:23 2688:23 2719:12 2719:17 2740:2 2749:19 five-year 2627:18 fivefold 2608:12 fix 2340:23 2369:20 2373:7 2452:20 2494:17 2502:21 2536:4 2589:20 2605:14 2653:4, 2663:5 2776:18 fixed 2452:7 2452:15 2523:16 2581:18 2605:22 fixing 2597:21 2686:7 flag 2417:5 2725:7 flanges 2428:25 2429:3 2429:10 2457:14 flare 2545:17 2547:5 2549:10 2549:11	2551:24 flares 2547:4 2547:11 2547:17 2547:19 2547:21 2580:18 flaring 2543:22 2559:3 2651:21 2651:23 2651:25 2652:17 flawed 2570:3 2666:8 2666:10 2667:3, 2667:6 flaws 2642:11 2667:5 Fleets 2411:8 flexible 2491:20 2507:20 flight 2651:24 flip-flopped 2457:21 FLIR 2430:3 flood 2671:23 flow 2570:8 2728:16 flowback 2722:25 2726:13 2728:9 flown 2545:7 fluids 2641:1 2641:9 fly 2547:2 flying 2547:9 focus 2362:2 2585:8 focused 2556:9 2583:20 2747:3 focusing 2516:11 2574:3 fodder 2713:21 folks 2344:2 2401:1, 2491:4 2649:16 2713:10 2713:17 follow 2533:18 2558:12 2710:14 2711:23 2712:15 2712:25 2771:12 follow-up
---	--	--	---	---

Volume 8
9/29/2021

EIB Ozone Hearing

2406:21	2783:7	2651:17	2396:16	2781:22
2518:14	foregone 2593:9	2662:23	2403:18	2782:13
2536:19	foreign 2498:3	2665:22	fourth 2481:12	Fox's 2484:7
2579:11	2498:4, 2498:7	2754:17	2756:17	fox@westernl...
2632:16	2498:10	2756:13	2761:15	2329:18
2632:18	2498:16	forward-looking	2761:23	fracking
2701:24	foremost 2644:1	2430:3	Fox 2329:14	2722:25
2710:12	foresee 2409:21	2430:13	2336:15	2726:13
2732:3	forever 2659:16	fossil 2659:16	2336:20	2728:10
followed	forget 2591:11	found 2338:3	2337:6	fraction 2554:8
2502:23	forgot 2736:1	2454:17	2342:15	frame 2356:5
following	form 2438:12	2470:16	2342:17	2445:9
2360:20	2527:10	2543:7	2342:19	2469:20
2379:4	2691:12	2543:16	2342:22	2533:6, 2605:4
2389:14	formal 2390:9	2543:18	2343:11	2618:23
2431:25	formalizing	2544:17	2349:7, 2350:2	2640:4
2446:9	2473:3	2545:21	2350:6, 2350:8	Francis 2328:18
2526:18	formally 2391:2	2546:2	2356:19	frankly 2345:6
2527:20	formation	2547:10	2357:14	2705:15
2558:13	2648:12	2549:22	2357:15	freely 2419:17
2617:3, 2777:3	2718:18	2550:10	2362:5, 2362:6	freeze 2690:18
follows 2367:3	2719:6	2551:14	2362:14	freezes 2472:12
2368:14	2719:20	2554:1	2362:19	frequencies
2371:14	2736:17	2554:20	2363:9	2364:9
2387:8, 2428:4	2736:20	2555:3, 2555:7	2363:10	2431:13
2431:3, 2490:3	formed 2567:11	2578:20	2379:7, 2379:8	2431:24
2492:20	2736:25	2579:21	2380:2, 2380:3	2432:22
2496:22	former 2351:20	2580:5, 2580:8	2380:17	2436:11
2500:20	2651:19	2581:10	2382:23	2454:15
2504:21	forms 2438:12	2599:4, 2640:3	2382:24	2454:16
2508:20	2506:10	2646:6	2385:25	2465:12
2515:18	2655:9	2675:10	2386:1	2466:9, 2473:5
2524:15	2765:19	2675:16	2423:20	2474:3, 2477:5
2537:13	formulated	2704:19	2423:21	2477:23
2591:8	2350:10	2721:12	2424:19	2478:1
2637:15	forth 2362:21	2725:11	2425:15	2520:21
2650:16	2395:15	2726:8	2425:16	2600:25
2654:22	2436:24	2726:24	2425:19	2601:16
2657:17	2458:8	2727:12	2425:25	2603:21
2661:22	2484:11	2727:17	2481:1	2622:15
2665:4, 2717:9	2513:21	2728:3, 2761:9	2482:11	2622:20
2743:9	2514:7	foundation	2482:12	2622:24
2774:21	2771:16	2490:15	2486:18	2623:12
font 2359:14	forthcoming	2507:8, 2748:2	2486:21	2623:15
foot 2582:11	2368:21	four 2339:18	2487:1, 2576:8	2623:18
2582:18	2494:5	2360:18	2578:3, 2578:4	2641:13
2598:21	2761:12	2364:21	2578:6, 2578:8	2642:3
2600:24	forum 2651:2	2381:12	2581:19	2644:16
2601:20	forums 2372:25	2406:25	2621:15	2647:10
2629:6	forward 2352:14	2605:8	2621:17	2647:15
2630:23	2353:1, 2359:4	2648:21	2621:21	2648:17
2631:2	2359:17	2648:22	2621:23	2668:25
2739:19	2359:20	2648:23	2623:23	2672:13
2739:23	2369:14	2660:8, 2673:7	2693:24	2675:12
footage 2630:22	2369:14	2675:11	2694:2	2675:24
2709:7	2373:2, 2420:1	2687:18	2695:13	2676:8
footprint	2424:7	2707:7	2695:17	2676:11
2701:18	2459:20	2722:23	2715:25	2676:13
forefront	2487:10	four-and-a-half	2716:1, 2781:3	2676:22
2662:23	2494:11	2777:16	2781:4	2684:13
foregoing	2514:25	four-stroke	2781:13	2684:22

Volume 8
9/29/2021

EIB Ozone Hearing

2687:11	2750:18	2770:2	funding 2490:22	Gap 2339:7
2688:5	2750:21	front 2356:15	2505:12	Garcia 2328:6
2690:24	2775:22	2405:8	funds 2507:12	2388:13
2777:11	frequent	frontline	funny 2665:17	2389:8
2778:19	2368:16	2373:14	further 2337:7	2413:11
frequency	2369:19	2495:2	2337:7, 2352:8	2413:12
2355:12	2373:6, 2431:3	2510:15	2365:10	2413:23
2356:7	2476:21	2540:6	2383:19	2414:1
2356:14	2494:16	2662:12	2395:17	2414:10
2361:14	2502:21	2663:25	2399:13	2479:22
2361:16	2510:16	fronts 2376:14	2406:10	2479:23
2362:12	2541:1	froze 2364:1	2415:14	2522:20
2362:18	2546:11	2364:3	2425:15	2522:21
2414:6, 2431:1	2551:6, 2551:8	fuel 2659:16	2425:18	2536:13
2433:10	2552:21	fugitive 2428:9	2433:14	2536:14
2434:15	2552:24	2428:18	2446:17	2588:5, 2588:6
2434:18	2553:5, 2557:5	2428:19	2463:16	2631:23
2442:8	2559:4, 2561:1	2429:8	2464:10	2631:24
2445:10	2561:2, 2581:8	2429:13	2477:23	2632:9
2446:13	2581:14	2429:15	2536:20	2632:11
2449:1	2582:15	2429:18	2563:9	2703:21
2449:15	2586:5, 2595:4	2431:1, 2431:8	2587:24	2703:22
2449:17	2596:8	2433:2, 2434:9	2604:9, 2613:6	2705:22
2450:12	2601:18	2470:25	2621:13	2707:13
2450:21	2610:2, 2613:2	2472:17	2626:23	2710:4, 2710:5
2451:24	2629:5	2518:5	2665:4	2710:13
2455:10	2644:18	2518:19	2705:21	2714:10
2455:22	2644:19	2523:25	2708:5, 2710:2	2714:11
2473:12	2648:1, 2653:3	2748:7	2716:23	2740:20
2518:4, 2530:2	2663:4	2748:10	2762:16	2740:21
2534:10	2688:11	2748:24	2770:15	2773:17
2540:11	2689:2, 2689:5	fulfill 2762:6	2774:9	Garcia's
2581:5	2690:12	full 2493:6	2774:21	2388:17
2594:23	2762:21	2516:19	future 2373:18	2389:14
2597:18	2763:5	2516:21	2377:5	2711:23
2609:10	frequently	2602:10	2394:16	gas 2327:4
2625:22	2392:10	2629:23	2395:2	2329:2
2626:1, 2644:7	2452:3	2641:15	2395:12	2332:14
2644:22	2456:15	2724:18	2400:5, 2408:5	2333:2, 2333:3
2647:13	2456:24	2724:18	2408:12	2333:3, 2338:8
2647:17	2519:24	2744:12	2460:12	2338:10
2648:3, 2667:6	2539:22	fully 2350:14	2460:16	2338:18
2673:2	2557:8, 2558:3	2363:11	2586:12	2339:4, 2339:5
2674:25	2575:24	2607:18	2639:22	2339:7
2675:5, 2675:7	2600:15	2677:24	2711:6	2339:14
2676:6	Friday 2385:5	2753:9	2713:21	2339:20
2676:18	2442:12	function	2731:9, 2732:1	2340:4, 2340:4
2676:24	2443:1, 2443:2	2422:20	2745:17	2340:10
2682:7, 2683:5	2711:8	2488:16	2755:20	2341:3, 2346:4
2684:16	2711:10	fund 2330:2		2346:13
2686:4	2711:11	2338:5, 2339:3	G	2346:18
2687:11	2711:14	2340:3		2351:21
2687:14	2714:14	2490:20	GABRIEL 2330:11	2355:17
2687:16	2715:7, 2715:8	2592:4	gain 2672:25	2360:12
2688:3	2715:24	Fund's 2542:5	2673:1, 2782:2	2361:2
2704:10	friend 2652:15	fundamental	gained 2550:5	2367:18
2704:17	2652:19	2354:13	2550:17	2368:17
2718:12	friends 2507:5	fundamentally	gains 2673:4	2368:25
2719:15	2756:15	2365:5	2703:24	2369:7
2748:18	2761:6	2535:14	Gallagher	2369:11
2749:4, 2749:9	2761:14	2536:2	2329:8	2369:22

Volume 8
9/29/2021

EIB Ozone Hearing

2370:1, 2370:2	2507:7	2655:17	2778:16	2328:11
2372:21	2507:10	2655:20	Gas-oil 2671:19	2328:16
2373:9	2507:14	2659:13	gas-to-oil	2328:17
2373:12	2527:6	2659:15	2669:15	2328:21
2399:21	2529:17	2659:19	2669:16	2328:21
2400:24	2540:16	2662:10	gases 2430:8	2351:17
2408:18	2541:2, 2541:6	2667:20	2495:5	2356:6
2409:1, 2409:5	2542:23	2668:9	2507:16	2383:22
2410:3	2543:9	2668:10	2584:11	2407:3
2411:13	2543:22	2668:18	2584:12	2407:18
2415:6	2544:20	2669:8	2641:4	2414:4, 2463:8
2428:22	2546:20	2669:18	gaskets 2429:6	2499:12
2430:1	2547:7, 2549:5	2671:4	gather 2678:10	2579:4
2430:11	2549:20	2671:21	2776:24	2585:16
2430:16	2549:24	2671:22	2777:4	2586:1, 2586:2
2431:18	2549:25	2671:24	gathered	2586:5
2432:6	2551:17	2671:25	2449:16	2586:24
2435:25	2552:8	2673:14	2534:9	2623:4, 2691:5
2441:25	2553:20	2673:16	gathering	2747:10
2442:2, 2442:3	2554:4	2673:24	2432:6, 2442:2	2748:15
2455:2	2554:16	2674:7	2474:6, 2520:5	2755:7
2461:21	2554:20	2674:18	2546:16	2755:10
2462:10	2554:21	2674:20	2548:13	2755:17
2465:24	2554:23	2676:10	2579:16	2764:21
2467:19	2556:4, 2556:5	2681:3	2579:21	generalization
2467:23	2556:7	2681:15	2579:24	2533:9
2468:4, 2468:6	2568:20	2684:2	2580:1, 2580:9	generalize
2468:10	2569:11	2689:13	2580:22	2533:5
2468:13	2570:17	2689:20	2580:24	generalized
2469:8, 2469:9	2571:3	2691:15	2581:3, 2581:8	2532:12
2469:10	2571:19	2697:18	2609:3	generally
2474:5, 2486:3	2572:3	2697:20	2609:15	2347:24
2486:11	2572:21	2698:19	2610:3, 2610:8	2400:1, 2468:7
2490:12	2573:23	2698:25	2610:10	2548:7, 2556:9
2490:14	2574:8, 2575:3	2699:3, 2699:5	2628:2, 2644:3	2568:22
2490:15	2575:4	2699:6	2646:22	2574:9, 2584:1
2490:19	2583:23	2699:12	2647:2	2646:11
2490:24	2584:7, 2584:8	2708:10	2648:24	2694:18
2491:5, 2491:6	2592:15	2708:18	2678:14	2748:13
2491:7	2596:11	2708:18	2678:17	2749:10
2491:16	2597:20	2718:11	2678:18	2749:25
2493:8	2611:20	2718:15	2678:22	2750:18
2493:12	2611:23	2721:7, 2721:9	2679:19	generate
2493:17	2612:2, 2612:7	2722:12	2680:24	2612:17
2493:21	2615:18	2722:16	2683:3, 2683:8	2695:8
2494:20	2615:22	2728:18	2683:14	generated
2494:24	2621:5	2728:20	2685:21	2675:24
2495:4, 2497:6	2622:16	2728:23	2686:10	2694:18
2497:13	2623:8	2730:23	2689:19	2695:12
2497:20	2626:16	2745:6	2692:17	generation
2498:9	2644:4	2748:17	2692:18	2738:25
2498:15	2646:17	2750:4, 2750:8	2697:5, 2697:6	2738:25
2503:5, 2503:9	2646:18	2750:14	2706:17	generations
2503:11	2646:24	2763:10	gauge 2563:25	2505:9
2505:11	2648:24	2768:15	Gavila 2505:18	genuine 2752:19
2505:17	2651:21	2776:6, 2776:7	GCA 2513:19	genuinely
2505:20	2652:12	2776:8	2514:4, 2514:5	2506:21
2506:4, 2506:8	2653:7	2776:10	2715:22	geographic
2506:15	2653:11	2776:11	GCA's 2513:20	2568:14
2506:17	2653:12	2776:15	2513:24	2772:1
2506:25	2655:15	2776:16	general 2328:11	geographical

Volume 8
9/29/2021

EIB Ozone Hearing

2573:20	2648:8	2512:12	2717:2, 2717:4	2409:14
geographically	2655:25	2512:12	2721:22	2417:9, 2418:9
2568:13	2655:25	2512:21	2728:13	2418:19
George 2488:20	2656:1	2513:7	2729:10	2419:12
2495:21	2684:25	2515:13	2739:7, 2742:5	2422:4
geospatial	2685:20	2523:10	2743:15	2422:24
2573:7, 2573:8	2735:23	2523:22	2744:1, 2750:7	2424:22
2573:13	2736:6	2530:12	2782:12	2426:15
germane 2647:25	gives 2567:4	2530:21	goal 2367:19	2427:4, 2427:9
2688:1	2645:25	2533:21	2519:2	2427:15
getting 2375:13	2672:11	2533:24	2711:15	2443:23
2457:21	giving 2353:3	2534:10	2711:17	2444:4
2658:25	2384:5	2535:14	goals 2367:14	2456:23
2665:20	2495:17	2542:12	2446:1	2459:15
2712:7	2507:24	2560:15	goes 2342:6	2461:11
2716:13	2721:23	2562:3, 2562:4	2344:16	2465:7
2717:1, 2725:4	2768:5	2562:9	2424:14	2467:15
2725:4	glad 2343:14	2562:10	2440:14	2474:8
2725:10	2343:15	2562:13	2457:22	2474:16
2730:20	global 2502:10	2576:24	2460:10	2474:17
2739:18	2502:10	2577:16	2471:1, 2570:1	2480:11
2781:17	2584:23	2582:10	2647:15	2480:12
GG 2717:15	2652:2, 2652:4	2591:24	2686:5	2480:13
GHGRP 2359:9	globally	2621:16	2687:14	2490:5
2359:15	2569:15	2632:23	2704:19	2491:12
2462:11	2664:5	2637:11	2733:6	2514:19
2469:14	glowering	2639:7	2733:14	2518:12
give 2342:12	2459:17	2658:13	2733:15	2519:18
2389:3, 2415:9	go 2343:4	2659:14	2734:9	2521:21
2415:23	2357:22	2660:21	2768:18	2534:17
2419:13	2374:1	2660:25	2781:7	2537:9
2450:16	2378:17	2661:1	going 2342:11	2541:12
2455:18	2382:16	2664:18	2342:20	2541:18
2468:12	2383:5	2665:24	2342:23	2549:14
2482:15	2384:11	2670:2	2343:17	2553:11
2490:11	2386:19	2670:21	2350:1, 2350:3	2563:18
2491:12	2389:12	2672:23	2350:9, 2353:7	2564:2, 2565:4
2493:6	2391:1, 2392:2	2673:1, 2673:5	2362:21	2566:3
2515:22	2394:2, 2395:1	2673:7, 2674:4	2363:6, 2367:5	2604:18
2541:10	2395:3, 2395:7	2675:12	2374:1	2621:11
2573:18	2395:17	2675:23	2375:12	2638:15
2583:11	2402:11	2684:18	2377:2, 2378:4	2639:23
2672:20	2416:10	2687:7	2378:8	2640:21
2700:5, 2700:6	2418:20	2687:14	2378:10	2642:20
2716:25	2424:7	2687:20	2383:21	2644:20
2742:4, 2742:8	2432:14	2688:3	2386:17	2654:3
2753:4	2436:12	2689:12	2386:19	2654:24
2754:12	2439:5	2689:15	2387:20	2656:20
2755:25	2440:16	2689:17	2389:22	2657:13
2761:1	2448:18	2689:19	2391:1, 2391:2	2659:14
given 2384:7	2465:17	2690:3, 2690:5	2391:21	2659:14
2388:23	2466:18	2690:6, 2690:8	2392:7, 2392:7	2659:16
2400:3, 2426:1	2467:11	2690:22	2392:21	2660:2
2436:8, 2469:3	2472:5	2692:25	2392:25	2660:15
2484:18	2472:18	2699:20	2393:4, 2394:4	2661:11
2509:25	2489:4, 2492:5	2701:10	2394:18	2665:14
2514:1, 2569:7	2495:21	2706:25	2395:8	2665:25
2570:24	2500:4, 2507:6	2710:24	2395:20	2666:5
2573:20	2508:6	2712:17	2398:7	2666:24
2581:6	2510:23	2716:10	2401:14	2672:12
2582:12	2511:22	2716:21	2406:12	2675:23

Volume 8
9/29/2021

EIB Ozone Hearing

2677:3	2506:20	2493:6	2609:8	2495:22
2686:13	2517:2	2502:14	2626:15	GREGORY 2333:11
2687:15	2529:14	2510:8	2671:8	grew 2369:4
2687:18	2529:15	2651:16	2671:13	2369:4
2691:19	2564:7	2653:17	2674:2	GRI 2571:9
2694:17	2564:17	2662:15	2688:23	2678:20
2698:18	2570:10	2759:15	2688:24	grid 2342:5
2701:1	2575:8, 2577:7	Governor's	2689:23	Grisham 2502:14
2701:10	2577:10	2373:3	2692:5	2651:16
2701:13	2588:3, 2624:5	grad 2630:6	2719:16	2662:15
2701:13	2649:4, 2650:6	grade 2510:1	greatly 2491:10	Grisham's
2702:25	2650:21	2533:12	2497:21	2367:17
2703:24	2652:13	2651:17	2549:5	2493:7
2705:12	2656:10	grams 2396:15	2584:13	gross 2551:7
2705:13	2662:2, 2694:3	2396:17	green 2411:9	grossly 2594:13
2705:18	2694:4, 2700:7	2396:24	2411:20	ground 2433:9
2712:14	2701:11	2403:20	Greenberg	2433:13
2712:22	2701:11	Grand 2407:8	2333:12	2453:14
2713:17	2701:17	2409:2	greenhouse	2453:15
2713:22	2701:21	granddaughters	2351:21	2475:19
2714:13	2727:14	2660:9	2355:16	2757:18
2715:11	2731:14	grandkids	2360:12	ground-based
2722:8, 2724:7	2735:17	2367:25	2361:2	2605:5, 2606:2
2724:8	2735:20	2651:15	2411:13	ground-level
2731:13	2742:16	2660:8	2461:21	2718:9, 2719:5
2731:14	2762:2	grandmother	2462:10	2719:21
2731:15	2764:12	2367:23	2467:19	2719:21
2741:21	2769:9, 2771:7	grandparents	2467:23	ground-up
2742:6	2771:7, 2774:4	2651:8	2468:4, 2468:6	2615:16
2742:19	2774:5	grant 2376:17	2469:8, 2469:9	grounds 2396:9
2744:1	2782:22	Grants 2754:2	2469:10	groundwater
2779:10	good-paying	grateful	2486:3	2753:8
2779:10	2490:14	2505:14	2486:11	2753:10
2781:25	goodness	2506:7, 2510:8	2507:16	2753:15
GONZALES 2332:4	2732:20	gray 2443:14	2544:20	2753:16
good 2342:7	Goodnight	2658:23	2549:5	group 2333:10
2366:15	2333:9	great 2363:10	2549:25	2476:6, 2509:5
2368:5	goods 2491:4	2406:8, 2407:9	2552:8	2509:8
2368:21	GOR 2671:7	2417:24	2568:20	2652:15
2371:19	2671:7	2444:3, 2516:1	2569:10	2652:16
2405:11	2671:17	2535:22	2570:17	2728:8
2418:4, 2420:3	2672:4, 2672:7	2541:23	2571:3	2752:22
2420:22	2673:25	2557:12	2571:19	Group's 2642:12
2421:23	2674:2	2587:3	2572:21	groups 2361:21
2427:1	2674:19	2625:10	2615:18	2432:23
2427:13	2674:21	2625:20	2615:22	2471:7, 2476:4
2427:19	2674:22	2649:9	2646:24	2749:17
2428:16	2689:13	2654:11	2667:20	grow 2507:10
2436:4	2689:14	2664:17	2668:10	2660:11
2458:19	gosh 2657:20	2686:3, 2722:9	2668:18	growing 2605:1
2459:12	gotten 2667:18	greater 2339:22	2669:18	growth 2605:16
2460:6	Gov 2653:16	2397:25	2671:4, 2674:7	2720:7
2461:18	government	2431:17	2681:3	Guadalupe
2487:1, 2488:5	2372:18	2432:5	2681:15	2331:13
2489:7	2499:21	2432:10	2698:19	Guardians
2491:23	2585:11	2468:8	2698:24	2331:8
2491:24	governments	2527:11	2699:3, 2699:5	2331:13
2492:24	2372:12	2545:20	2699:6	guess 2346:8
2494:5	2499:23	2571:16	Greenlee	2384:1
2497:25	Governor	2574:4	2488:20	2384:15
2506:2, 2506:8	2367:17	2600:20	2495:21	2400:4

Volume 8
9/29/2021

EIB Ozone Hearing

2409:12	2445:5	handle 2365:6	2488:19	2621:6, 2621:7
2417:6	2445:13	2418:9, 2437:6	2492:18	2621:9
2417:22	2445:21	2437:9	2492:25	2626:15
2422:2	2446:5	2479:17	Harris 2332:22	2626:19
2453:18	2446:16	2618:6	hash 2487:13	2655:18
2471:1	2446:21	handy 2576:15	hat 2358:20	2656:10
2481:23	2455:8, 2515:6	hanging 2358:20	hazardous	2662:9
2484:18	2515:7	2780:13	2556:8	2662:11
2491:11	2515:12	2782:19	2556:10	2662:25
2498:18	2515:14	happen 2709:18	2593:23	2663:21
2530:11	2515:20	2722:8	2595:25	2664:3, 2664:4
2530:11	2515:21	happened	2720:25	2720:2
2530:17	2516:2	2387:23	2721:3	2721:18
2532:16	2521:13	happening	2721:10	2721:20
2533:3, 2533:4	2521:17	2387:18	2726:9, 2737:4	2722:1, 2722:4
2533:4	2523:3, 2523:4	2541:11	2747:1	2722:4
2533:16	GWP 2340:16	2655:23	2758:21	2722:11
2534:6		happens 2346:5	haze 2412:5	2722:15
2582:10	H	2456:24	2412:9	2722:17
2586:18		2580:20	head 2412:14	2724:24
2611:4	H-A-R-O-L-D	2687:15	2412:17	2725:2
2618:13	2492:11	2690:9	2420:3, 2467:9	2727:12
2631:18	H-I-L-L-A-R-Y	happily 2533:17	2522:21	2729:2
2707:12	2590:23	happy 2357:10	2622:21	2730:11
2730:20	H-O-R-O-W-I-T-Z	2366:2	2622:22	2731:11
2732:3, 2782:9	2371:6	2385:22	2633:13	2731:24
guidance	H-U-L-L 2590:24	2423:14	2710:16	2733:16
2469:12	H2S 2641:5	2426:23	headache	2738:16
2778:15	2702:10	2442:15	2652:23	2739:6
Guideline	Haaland 2651:19	2444:17	2727:13	2739:22
2647:5	half 2369:7	2444:18	headaches	2740:3, 2740:7
2778:14	2493:16	2447:19	2652:20	2741:11
Guidelines	2548:18	2484:17	2728:4	2745:6
2340:9	2566:1	2488:14	heading 2631:12	2749:24
2463:21	2605:10	2521:11	health 2340:19	2750:4
2602:16	2605:12	2633:10	2367:24	2750:14
2606:19	2655:15	2639:2	2369:1	2752:13
Gunnison 2407:7	2708:17	2665:10	2372:22	2753:18
Gutierrez	halfway 2354:11	2678:13	2373:15	2755:2
2333:4	hall 2512:25	2709:18	2391:10	2755:16
2335:14	hand 2350:12	2710:10	2458:16	2756:3, 2756:8
2336:9, 2342:8	2350:13	2776:23	2493:13	2759:24
2441:15	2364:2	HAPs 2720:25	2494:9, 2495:1	2760:6, 2760:9
2441:16	2366:21	2721:10	2495:15	2762:17
2441:19	2371:8	hard 2411:8	2501:5, 2501:6	2763:11
2441:20	2489:16	2506:2, 2506:7	2501:7, 2501:8	2766:3
2442:5	2492:14	harm 2495:10	2501:9	2767:21
2442:10	2496:16	2507:4, 2720:6	2501:13	2769:11
2442:15	2500:14	2762:13	2501:17	2770:1
2442:18	2504:15	harmful 2431:5	2501:22	2772:19
2442:22	2508:14	2502:5, 2718:9	2501:23	2772:23
2443:6, 2443:8	2514:15	2728:21	2502:3, 2502:6	2775:5
2443:9	2591:1	2730:19	2503:16	2779:15
2443:11	2639:24	harms 2745:6	2505:25	health-based
2443:16	2650:10	2745:13	2509:12	2720:11
2443:20	2654:16	2745:16	2510:3, 2510:6	healthy 2509:5
2444:3, 2444:5	2657:10	2750:14	2593:24	2510:5
2444:7	2661:16	2752:24	2594:1	2720:13
2444:10	2710:1, 2743:2	2756:11	2596:24	hear 2342:11
2444:14	handful 2375:20	2762:17	2599:3	2342:15
2444:23	hanging 2460:9	Harold 2335:18	2620:23	2342:17

Volume 8
9/29/2021

EIB Ozone Hearing

2343:9	2517:6	2353:18	2384:15	2421:1, 2421:8
2343:10	2517:14	2354:3, 2354:5	2384:21	2421:10
2347:25	2535:18	2354:12	2385:3, 2385:6	2421:11
2348:1, 2351:9	2537:5, 2537:7	2355:10	2385:15	2421:13
2366:9	2556:21	2355:11	2385:24	2421:22
2366:12	2559:1, 2575:5	2356:18	2386:1	2422:6
2366:15	2575:8	2357:13	2386:15	2422:14
2366:16	2620:16	2357:15	2387:1, 2387:3	2423:12
2371:1, 2374:2	2639:15	2358:24	2387:10	2423:21
2375:4, 2378:8	2640:13	2359:1, 2360:4	2387:14	2424:5
2381:2	2640:15	2360:6	2387:24	2424:10
2413:18	2640:20	2360:10	2388:2, 2388:5	2424:12
2413:20	2642:6, 2648:9	2362:4, 2362:6	2388:8	2424:23
2421:24	2677:11	2362:16	2388:11	2425:14
2444:11	2678:2, 2705:2	2363:5, 2363:8	2389:6	2425:17
2464:25	2708:7, 2712:4	2363:22	2389:19	2425:19
2481:13	2720:9	2363:25	2389:21	2425:24
2489:6, 2489:9	2721:11	2364:3	2390:7	2426:5
2492:6, 2492:8	2769:9	2364:19	2390:10	2426:12
2496:7, 2496:9	2769:11	2365:1	2394:18	2426:20
2496:10	2769:15	2365:17	2398:8	2426:21
2500:8, 2504:7	2769:21	2365:17	2398:13	2427:3
2508:8, 2511:1	2781:5	2366:15	2399:3	2427:12
2511:9	hearing 2327:13	2366:20	2399:14	2427:17
2534:25	2327:14	2366:24	2399:17	2441:11
2535:1	2328:2, 2342:1	2367:5	2400:15	2441:16
2537:19	2342:16	2370:10	2400:17	2442:23
2559:15	2342:18	2370:20	2402:6	2443:6, 2444:5
2577:2, 2577:5	2342:21	2370:23	2402:11	2444:8
2610:20	2343:14	2371:3, 2371:7	2404:10	2444:12
2616:14	2343:23	2371:11	2404:11	2444:22
2618:15	2344:4, 2344:9	2371:16	2405:1, 2405:2	2446:20
2649:24	2344:14	2373:20	2405:17	2446:23
2650:1, 2654:2	2344:17	2374:5, 2375:8	2405:25	2447:13
2654:4	2344:19	2375:10	2406:5, 2406:6	2447:14
2656:21	2344:20	2375:11	2406:8	2447:17
2661:3, 2661:5	2345:3	2375:21	2406:18	2447:22
2705:5	2345:11	2375:24	2406:20	2451:23
2710:21	2345:16	2376:1	2410:9	2460:19
2714:18	2345:18	2376:12	2411:11	2460:23
2714:19	2346:25	2377:5, 2377:8	2412:23	2474:18
2717:22	2347:8	2377:12	2413:10	2474:21
2717:24	2347:13	2377:22	2414:12	2475:7, 2477:6
2735:16	2347:16	2378:9	2414:16	2478:13
2764:7, 2781:1	2348:6	2378:15	2415:13	2478:15
heard 2344:4	2348:13	2378:24	2415:18	2479:1, 2479:7
2347:17	2348:15	2379:2, 2379:9	2416:3, 2416:5	2479:12
2349:13	2348:25	2379:10	2416:9	2479:21
2351:17	2349:1, 2349:6	2380:1, 2380:3	2416:21	2479:24
2351:20	2349:11	2380:15	2417:2	2480:2, 2480:5
2356:11	2349:24	2380:21	2417:13	2480:6
2362:8	2350:8	2380:23	2417:17	2480:14
2372:24	2350:22	2381:15	2417:20	2480:20
2374:11	2350:24	2382:5	2417:24	2481:12
2378:7	2351:12	2382:14	2418:4, 2418:6	2482:6
2411:11	2351:19	2382:22	2418:16	2482:10
2447:3, 2470:6	2351:24	2382:24	2418:17	2482:12
2470:18	2352:5	2383:11	2419:6, 2420:6	2482:16
2482:3	2352:10	2383:12	2420:7	2483:5, 2483:8
2501:18	2352:12	2383:18	2420:11	2483:9
2502:18	2352:21	2384:1, 2384:3	2420:25	2483:14

Volume 8
9/29/2021

EIB Ozone Hearing

2484:2	2522:17	2613:12	2661:24	2735:12
2484:19	2522:20	2613:13	2664:9	2735:14
2484:21	2522:22	2615:1, 2620:9	2664:17	2737:23
2486:14	2522:25	2621:14	2668:13	2738:9
2487:8	2523:5, 2523:7	2621:17	2669:1	2738:11
2487:10	2523:10	2623:25	2669:24	2740:13
2487:15	2523:12	2624:2	2670:1, 2679:3	2740:15
2487:17	2523:17	2626:23	2679:17	2740:24
2487:19	2523:21	2626:25	2690:21	2741:3, 2741:8
2487:25	2523:23	2627:9	2692:20	2741:12
2488:3, 2488:6	2528:13	2627:10	2692:23	2741:17
2488:8, 2488:9	2529:2, 2529:8	2629:19	2693:5, 2693:6	2741:20
2489:10	2531:13	2630:2	2693:10	2741:23
2489:15	2531:23	2631:22	2693:19	2742:2, 2742:3
2489:19	2532:2, 2536:9	2632:12	2693:22	2742:10
2490:5, 2492:2	2536:12	2632:15	2695:16	2742:16
2492:8	2536:15	2632:19	2696:4, 2696:7	2742:18
2492:13	2536:17	2632:20	2702:3	2742:23
2492:17	2536:20	2634:19	2703:18	2743:1, 2743:5
2492:22	2536:22	2634:21	2703:20	2743:12
2495:18	2537:3	2634:24	2706:1	2743:13
2496:10	2537:21	2634:25	2707:19	2743:18
2496:15	2537:23	2635:3, 2635:4	2707:24	2743:22
2496:19	2538:9	2635:17	2708:3, 2708:8	2745:18
2496:24	2538:21	2635:20	2709:15	2745:22
2500:3, 2500:9	2538:23	2635:24	2709:19	2751:2, 2751:4
2500:13	2539:12	2636:2, 2636:3	2710:4	2763:17
2500:17	2558:25	2636:8	2710:11	2763:20
2500:22	2560:15	2636:11	2710:17	2763:25
2504:1	2560:21	2636:14	2710:23	2764:5, 2766:8
2504:10	2561:10	2637:1, 2637:4	2711:2, 2711:7	2766:17
2504:14	2561:22	2637:5	2711:16	2770:14
2504:18	2562:5	2637:10	2711:25	2770:16
2504:23	2563:11	2639:9	2712:1	2771:3, 2771:5
2508:4	2564:6	2642:19	2712:10	2773:6
2508:10	2564:11	2642:23	2712:11	2773:12
2508:13	2564:13	2643:7	2712:20	2773:16
2508:17	2576:4	2643:13	2713:3, 2713:5	2773:25
2508:22	2576:13	2643:14	2713:7	2774:3, 2774:5
2510:22	2576:22	2643:18	2713:21	2774:14
2512:2, 2512:5	2577:3	2649:2	2713:21	2774:16
2512:10	2577:25	2649:10	2713:24	2778:24
2512:14	2578:4	2650:2, 2650:9	2714:15	2779:4
2512:20	2581:20	2650:13	2715:12	2779:11
2512:23	2582:5, 2582:7	2650:18	2715:14	2779:11
2513:4, 2513:5	2582:12	2653:21	2715:15	2779:14
2513:8	2583:2, 2583:4	2654:6	2715:20	2779:25
2513:12	2587:25	2654:10	2715:25	2780:1
2513:14	2588:4, 2588:8	2654:15	2716:1, 2716:9	2780:10
2513:17	2588:11	2654:19	2716:18	2780:15
2514:9	2590:12	2654:24	2716:21	2780:20
2514:20	2590:15	2656:18	2717:2, 2729:7	2780:23
2514:22	2590:19	2656:23	2729:11	2781:4
2515:4, 2515:9	2590:25	2657:2, 2657:5	2729:15	2781:11
2515:13	2591:4	2657:9	2730:4, 2733:8	2781:15
2515:21	2591:11	2657:13	2733:9	2781:16
2517:2	2591:13	2660:19	2733:10	2782:3, 2782:6
2519:18	2595:6	2661:6	2733:17	2782:14
2521:16	2595:10	2661:12	2733:17	hearings
2522:3	2610:19	2661:15	2733:23	2351:21
2522:11	2613:7	2661:19	2734:6, 2735:7	2374:23

Volume 8
9/29/2021

EIB Ozone Hearing

2374:25	2486:18	2564:23	2763:8, 2774:8	2383:24
2412:4	2531:11	2572:5	2781:1, 2781:7	2384:1
2455:24	2533:10	2585:11	Hill's 2626:11	2384:15
hearsay 2561:21	2560:3, 2576:3	2594:14	2749:25	2385:6
heart 2597:2	2697:9	2594:19	2750:1	2385:19
2626:21	2728:14	2594:20	Hillary 2336:17	2390:8
2651:11	helping 2540:7	2594:20	2339:16	2390:11
heartily	helps 2419:25	2596:12	2340:22	2400:18
2345:14	2506:18	2600:2	2356:23	2400:19
heater 2645:14	2630:12	2606:14	2537:6	2400:21
2696:21	hereto 2783:14	2606:16	2590:17	2400:23
heavily 2747:3	hey 2419:12	2606:16	2590:23	2402:3
2753:22	HH 2717:15	2623:10	2591:5	2415:24
2766:1	Hi 2418:4	2624:21	2591:14	2416:2
Heights 2367:10	high 2373:11	2626:19	2592:1, 2606:5	2417:17
held 2368:8	2397:6	2647:15	2610:20	2421:1, 2421:2
2391:11	2540:25	2672:4	2613:5, 2745:3	2421:15
helicopter	2544:16	2674:17	2749:7	2447:15
2547:9	2546:9	2674:17	2762:22	2447:17
helicopter-b...	2553:17	2674:18	Hillary's	2448:2, 2448:3
2542:23	2574:12	2674:19	2357:1	2448:9
2546:19	2574:15	2674:21	hinder 2458:22	2448:15
Hello 2366:11	2579:13	2674:22	hire 2499:1	2448:16
2370:17	2580:24	2674:23	2607:11	2449:3
2508:11	2581:9	2675:4, 2675:6	2607:17	2449:11
2511:2, 2511:9	2607:23	2677:1	Hise 2348:16	2449:23
2537:19	2614:7	2677:20	Hiser 2329:3	2450:4
2578:7	2614:23	2677:21	2329:4	2450:11
2621:22	2642:4, 2648:6	2687:3, 2687:4	2335:10	2450:16
2636:3, 2654:5	2652:16	2689:6, 2689:7	2335:15	2450:20
2654:6	2655:7, 2655:8	2691:16	2336:11	2451:2, 2451:8
2763:24	2656:2	2727:17	2336:19	2451:13
help 2361:5	2662:19	2727:22	2337:5, 2337:5	2451:20
2368:22	2663:20	2728:10	2337:7	2452:4, 2452:8
2399:6	2666:11	2736:10	2343:22	2452:13
2409:21	2666:12	higher-produ...	2344:6	2452:19
2457:18	2666:13	2612:14	2344:11	2452:23
2494:6, 2499:2	2674:22	2612:18	2344:15	2453:18
2540:6	2676:13	highest 2548:5	2345:10	2454:1, 2454:9
2587:12	2676:14	2548:17	2345:20	2454:20
2589:6, 2617:5	2689:8	2726:25	2348:13	2455:6
2636:22	2689:14	2727:2, 2728:9	2348:16	2455:14
2653:16	2709:11	highlighted	2348:17	2455:25
2653:16	2721:13	2562:21	2348:18	2456:9
2653:17	higher 2338:16	highlighting	2351:11	2456:19
2666:19	2396:19	2472:25	2352:4, 2354:1	2457:3, 2457:6
2718:17	2451:25	highlights	2354:3, 2355:3	2457:10
2718:18	2452:1	2392:18	2355:10	2457:16
2719:6, 2719:7	2476:13	highly 2490:23	2360:7	2457:19
2720:16	2476:14	2559:10	2360:10	2458:5, 2459:2
2757:6, 2762:5	2490:22	2593:18	2362:9	2459:7
helped 2486:23	2491:8	2598:25	2362:11	2459:14
2526:2	2498:15	2610:11	2362:15	2460:2, 2460:8
helpful 2386:4	2543:10	2702:20	2377:8	2460:16
2403:15	2543:11	2702:21	2378:18	2460:24
2404:6	2544:2	2736:18	2379:13	2460:25
2420:18	2544:18	2736:21	2380:12	2461:5
2442:16	2544:20	highway 2415:9	2380:23	2461:16
2442:17	2549:25	Hill 2626:9	2382:4	2461:18
2442:21	2550:11	2716:3, 2716:7	2383:11	2462:6
2486:15	2551:20	2749:24	2383:13	2462:14

Volume 8
9/29/2021

EIB Ozone Hearing

2462:19	2511:22	historic 2754:5	2764:21	2700:12
2462:23	2511:25	historically	2765:1	2703:4
2463:1, 2463:4	2512:3, 2512:8	2745:4	holds 2372:1	2703:13
2463:15	2529:11	2745:12	hole 2703:4	Horowitz 2335:6
2464:1	2529:13	2749:16	holes 2703:7	2365:24
2464:12	2529:16	2750:12	holistically	2370:24
2464:16	2531:8	history 2352:2	2411:18	2370:25
2464:21	2531:10	2352:3	HOLMSTEAD	2371:2, 2371:5
2465:9	2561:10	2353:21	2332:15	2371:5
2465:19	2613:12	2374:21	home 2505:10	2371:10
2465:22	2613:13	2655:5	2651:6	2371:12
2466:5, 2466:8	2613:14	2745:24	2708:17	2371:18
2466:12	2613:16	2746:12	2708:20	2371:22
2467:2, 2467:6	2614:20	hit 2665:8	homes 2358:5	2373:21
2467:13	2615:2, 2615:4	2708:20	2358:6	horrible
2468:2	2616:24	Hmm 2342:11	2368:17	2413:24
2468:10	2617:14	Hobbs 2505:5	2539:7	horrid 2655:18
2468:16	2620:5, 2620:9	Hogan 2333:5	2539:21	horsepower
2468:21	2636:1, 2636:2	2516:2	2651:22	2391:20
2469:3	2636:7	hold 2349:6	2663:6	2392:22
2469:15	2636:11	2350:2, 2363:7	honestly	2394:15
2469:17	2636:21	2391:17	2486:12	2394:16
2469:22	2637:3, 2637:4	2500:9, 2500:9	2523:16	2394:20
2470:4	2637:7, 2637:9	2618:19	2560:23	2394:24
2470:10	2637:17	2657:2, 2657:2	2636:11	2400:2, 2408:6
2470:12	2642:19	2661:12	Honker 2328:8	horsepower-hour
2470:21	2642:24	2734:7	2375:8	2396:15
2471:20	2643:9	Holderman	2414:12	2396:18
2472:5	2643:13	2336:10	2414:13	2396:24
2472:21	2664:15	2512:21	2420:24	2403:21
2473:7	2664:16	2512:24	2479:25	Hospital
2473:16	2665:6	2513:3, 2513:6	2480:1	2655:11
2474:1	2665:20	2514:23	2522:23	host 2406:1
2474:13	2669:2	2515:1, 2523:9	2522:24	hosted 2652:15
2474:18	2669:12	2523:24	2536:15	hosts 2652:8
2475:1	2669:25	2524:1	2536:16	hot 2651:24
2475:12	2679:2, 2679:3	2524:11	2588:9	2736:12
2475:23	2680:6	2524:12	2588:10	hour 2327:15
2476:19	2680:14	2524:18	2632:13	2350:18
2476:24	2690:20	2528:13	2632:14	2481:2, 2566:3
2477:11	2692:22	2529:6	2706:2, 2706:3	2567:8
2477:15	2692:24	2529:10	2706:20	2569:22
2477:19	2693:4	2529:14	2707:1	2646:8, 2646:9
2478:4	2693:14	2531:9	2707:10	2681:18
2478:12	2693:15	2531:11	2707:12	2723:17
2478:16	2693:21	2531:14	2707:21	2771:10
2480:14	2707:25	2531:24	2740:24	hourly 2723:17
2481:24	2708:1, 2708:6	2532:5	2773:19	hours 2422:5
2483:8, 2483:9	2709:24	2532:16	honor 2483:15	2548:23
2484:6	2711:7, 2711:9	2533:3	2501:4	2567:16
2484:22	2711:25	2533:15	hope 2452:5	2567:21
2485:4	2712:1	2534:6	2587:7	2567:25
2485:11	2712:11	2535:10	2635:16	2568:4, 2569:5
2485:23	2713:2, 2713:3	2536:19	2648:14	2569:17
2486:16	2714:6	2536:23	2660:1	2569:25
2486:17	2715:10	2556:22	hopefully	2570:5
2487:1, 2487:4	2715:13	2556:23	2416:19	2574:17
2487:18	2715:16	Holderman's	2542:1	2581:11
2487:20	2715:17	2524:9	2711:13	2604:22
2487:25	Hiser's 2364:6	2528:17	hoping 2586:3	2619:16
2511:19	Hispanic 2502:1	holding 2363:8	horizontal	house 2367:9

Volume 8
9/29/2021

EIB Ozone Hearing

2657:22	2633:6, 2633:8	2530:19	2410:23	2760:6
2658:5	2633:10	2555:1	2493:18	2765:25
2660:14	2633:14	2555:11	2497:12	2767:6, 2775:5
household	2634:9	identifies	2497:21	impairing
2772:24	2634:13	2430:7	2501:13	2758:6
Houston 2332:11	2634:18	2436:18	2501:16	impedes 2720:7
huge 2498:9	2635:1, 2635:3	2437:5	2501:17	implement
2509:11	2745:3	2439:22	2509:11	2498:12
2662:9	2749:15	2745:3	2509:18	2498:24
Hull 2336:17	2762:22	identify 2374:7	2584:23	2526:8
2339:16	Hull's 2356:24	2383:7, 2386:4	2584:24	implementation
2340:22	2357:19	2386:12	2611:5, 2615:9	2429:15
2357:23	2610:16	2430:6	2617:11	2551:2
2537:6	2749:7	2430:14	2617:12	2751:22
2590:18	2749:11	2430:22	2620:22	implemented
2590:20	2749:14	2510:13	2628:18	2368:16
2590:23	human 2458:16	2533:23	2648:10	2456:8, 2503:1
2590:24	2499:10	2535:18	2662:9	2599:23
2591:3, 2591:5	2722:1	2535:24	2674:16	2629:13
2591:14	2722:17	2613:3	2724:4	implementing
2591:19	2724:24	2778:10	impacted 2409:4	2602:10
2591:21	2731:11	identifying	2501:20	2604:19
2593:13	2740:3, 2740:7	2481:2	2501:25	2607:9
2595:6, 2595:9	2769:11	2575:13	2623:2, 2623:5	2733:11
2612:4, 2613:6	2772:19	2589:11	2623:7, 2623:9	2733:15
2613:8	humans 2660:12	II 2717:15	2623:14	2757:23
2613:10	2718:22	2741:5	2623:21	2757:24
2613:17	2720:22	III 2340:23	impactful	implements
2613:17	2721:5	2591:16	2648:12	2768:18
2613:21	2728:25	2591:18	impacting	implication
2614:9	2730:19	illustrate	2412:3	2612:5
2614:19	hundred 2631:16	2673:23	2493:12	2612:10
2614:20	hundreds	2678:5	impacts 2369:8	implications
2615:4	2505:10	image 2545:14	2382:11	2581:5, 2581:7
2616:18	hydrocarbon	images 2545:15	2411:9	2728:16
2617:9, 2620:8	2547:13	imagine 2355:4	2411:20	2775:19
2620:14	hydrocarbons	2406:3, 2523:2	2501:22	imply 2574:22
2621:19	2430:4	2628:4	2501:23	2579:1
2621:22	2546:21	2651:23	2502:3, 2502:5	2607:20
2622:3, 2624:5	2585:19	2725:24	2502:9, 2621:6	import 2360:15
2624:10	2622:17	imaging 2430:1	2621:7, 2621:9	2361:1
2625:11	hydrogen 2495:5	2430:11	2629:11	important
2626:8	2702:10	2430:16	2642:8	2348:1
2626:22	hypothetical	2435:25	2662:25	2367:16
2626:24	2459:16	2541:2	2663:22	2371:20
2627:1		2542:23	2678:5, 2685:1	2384:23
2627:12	I	2546:20	2720:4, 2720:4	2392:14
2627:19		2583:23	2722:11	2393:17
2627:22	IAPNM's 2347:4	immediate	2722:18	2395:17
2628:4	idea 2407:17	2501:22	2724:20	2397:14
2628:12	2439:8, 2762:2	2711:10	2730:11	2397:22
2628:21	ideal 2534:17	immediately	2730:15	2431:10
2629:8	ideally 2449:8	2501:24	2730:21	2434:19
2629:17	identification	immigrant	2730:24	2437:4
2629:18	2527:13	2747:6	2731:1	2458:11
2629:22	identified	2753:22	2732:15	2491:14
2630:1, 2630:8	2434:20	imminent	2732:16	2494:2, 2501:2
2630:25	2435:7	2458:15	2739:6	2506:24
2631:21	2440:20	immune 2727:9	2749:12	2517:20
2632:1, 2632:5	2485:21	impact 2360:15	2750:5, 2754:9	2521:2, 2521:4
2632:10	2530:13	2409:4	2754:13	2547:20

Volume 8
9/29/2021

EIB Ozone Hearing

2562:22	inadequate	2618:4, 2618:8	2662:19	2597:18
2593:22	2690:15	2676:9, 2678:3	2681:19	2606:23
2641:15	inappropriate	2678:5	2682:12	2644:21
2642:5	2349:23	2686:17	2720:2	2720:3
2647:22	2353:5, 2579:7	2747:13	2745:14	2725:17
2662:8, 2663:3	inappropriately	2768:23	2746:24	2726:14
2664:7	2363:2	includes	2747:1	2726:22
2671:18	inaudible	2360:13	2747:25	2727:6
2672:24	2347:3	2510:15	2748:8	2740:11
2727:4, 2751:8	2348:17	2556:7	2749:18	2750:4
2752:5	2370:19	2587:10	2749:22	2763:11
Importantly	2370:22	2592:16	2752:10	2775:1
2593:24	2382:5	2602:11	2752:17	increases
2595:4	2454:21	2619:18	2753:12	2597:15
impose 2767:17	2528:12	2626:20	2754:15	2598:4, 2598:6
Imposing 2642:5	2529:1	2646:11	2757:24	2598:23
impression	2530:23	2650:24	2758:17	2608:11
2426:18	2534:22	2752:9	2761:14	2655:12
improper	2536:4	2752:12	2761:16	2686:4, 2691:2
2353:14	2562:12	including	2762:5	increasing
2589:7	2573:22	2355:15	2762:23	2465:12
improperly	2614:9	2364:25	2763:4	2647:13
2589:15	2717:13	2369:7	inclusion	2647:16
improve 2409:25	inception	2391:12	2481:17	2718:12
2409:25	2356:16	2393:10	inclusive	incremental
2410:4	inclined 2365:3	2428:21	2421:20	2381:8
2411:14	include 2429:1	2458:7	income 2612:17	2454:10
2515:23	2429:8	2470:14	2751:21	2535:19
2534:3, 2535:5	2429:15	2493:17	2760:1	2648:1, 2648:2
improved	2429:21	2526:8	incomplete	2648:6, 2688:2
2534:15	2434:10	2540:18	2580:15	2688:3
Improvement	2470:17	2545:6, 2546:1	inconsistent	2688:14
2327:1, 2328:4	2525:4	2546:14	2352:5	2688:25
2367:19	2525:14	2546:21	2447:22	2690:2, 2690:4
2374:19	2563:20	2547:1	incorporate	2690:10
2374:21	2571:6	2548:10	2517:13	2691:7
2488:7, 2493:4	2586:14	2549:4	2527:19	2691:20
2501:1, 2510:9	2596:25	2554:20	2642:14	2692:3, 2692:4
2651:2, 2754:8	2614:12	2556:8	2682:11	2739:24
2754:12	2675:21	2559:13	incorporated	2778:18
improvements	2756:9	2559:18	2334:4	2778:20
2369:15	2762:19	2575:23	2542:24	incrementally
2494:12	2768:2	2579:24	2546:24	2690:8
2663:3	2768:25	2580:7	2596:3	incumbent
in-house	included	2580:18	incorporating	2359:18
2602:10	2346:22	2581:1	2747:3	incurred 2454:3
2607:7	2359:6	2583:22	incorrect	independent
inaccessible	2367:25	2585:19	2351:24	2332:2, 2746:9
2437:7	2377:16	2586:11	increase	2766:22
inaccurate	2399:25	2589:12	2497:22	Index 2602:23
2552:14	2451:11	2596:21	2595:14	indicate
2553:12	2467:4	2598:20	2607:5	2458:17
inactive 2453:4	2481:16	2604:22	2655:22	2555:20
2525:15	2526:23	2604:24	2673:2, 2673:7	2565:13
2557:3	2528:6	2611:6	2690:24	2571:15
2557:21	2528:22	2617:22	2691:7, 2704:9	2573:13
2557:23	2549:21	2617:25	2725:9	2604:17
2557:25	2552:1, 2565:1	2624:13	2728:25	2604:20
2558:2	2572:8	2624:17	2749:4, 2749:8	2610:1, 2690:4
inadequacy	2614:15	2641:2	2750:21	2704:16
2568:19	2616:10	2646:14	increased	indicated

Volume 8
9/29/2021

EIB Ozone Hearing

2424:5	2368:6	2752:19	2681:6	2600:18
2428:17	2368:13	informal	2683:15	2600:20
2430:12	2368:14	2758:23	2684:8, 2694:9	2610:22
2435:13	2372:21	information	2694:19	2653:13
2566:11	2384:18	2344:22	2695:11	inspected
2566:25	2391:8	2345:21	2765:7	2435:10
2604:11	2432:20	2346:17	2776:24	2452:3
2614:17	2452:20	2346:23	2777:15	2547:21
2704:17	2454:3, 2459:9	2361:5, 2365:4	infrared 2430:4	2548:25
2716:15	2460:9	2377:16	2430:13	2555:23
2735:9	2460:17	2382:15	infrastructure	2557:1, 2557:1
2754:16	2461:2	2384:10	2750:14	inspecting
2760:3, 2761:5	2468:10	2384:18	infrequently	2518:3
indicates	2471:2	2385:9	2557:2	2703:25
2467:17	2480:17	2385:11	inhale 2728:25	inspection
2603:14	2490:12	2385:17	inheriting	2368:16
2606:1, 2613:1	2490:20	2386:13	2372:8	2431:22
2675:8	2490:24	2392:18	initial 2578:21	2432:22
2681:14	2491:5, 2491:6	2393:22	2698:18	2435:5
2700:22	2491:16	2401:18	initially	2435:10
indicating	2505:11	2415:17	2451:18	2435:12
2462:11	2505:17	2421:16	2675:11	2435:14
2547:13	2505:20	2440:21	2737:19	2435:15
indication	2505:24	2447:23	initiative	2435:23
2758:25	2506:1, 2506:4	2449:15	2410:16	2436:20
indigenous	2506:9	2450:12	2410:18	2440:19
2502:1, 2747:5	2506:15	2451:17	initiatives	2442:7, 2452:5
2752:23	2506:17	2453:16	2409:13	2457:5, 2457:7
indirectly	2506:24	2454:13	2411:24	2473:4, 2474:3
2505:16	2507:10	2454:17	injection	2525:14
individual	2507:14	2458:11	2525:10	2525:24
2430:20	2510:5	2461:20	2525:21	2526:3, 2526:9
2437:19	2559:17	2461:21	2557:14	2527:14
2438:2	2604:24	2461:23	2557:18	2534:20
2528:11	2652:12	2463:22	injury 2756:3	2535:2
2701:19	2690:11	2466:9	2756:6, 2756:8	2540:11
2703:13	2700:17	2466:20	2756:20	2558:11
2703:13	2708:10	2468:17	2757:1	2559:22
2726:16	2775:8	2470:18	injustice	2575:6
2726:21	2778:16	2475:21	2753:1	2578:21
2766:4	industry's	2476:17	inlets 2570:7	2586:19
2772:23	2369:11	2481:4	input 2415:10	2586:21
2773:1	2459:9	2485:22	2614:3	2586:23
individuals	2493:22	2485:25	2755:12	2598:17
2749:20	inefficiencies	2487:3	inquired	2599:18
2758:3	2589:19	2534:10	2625:12	2600:6
indulge 2708:3	inefficient	2560:19	inquiry 2418:9	2600:25
indulgence	2580:17	2589:16	2578:13	2601:8
2459:16	inevitably	2599:16	inside 2663:24	2601:16
industrial	2655:22	2602:7, 2604:8	insofar 2347:21	2602:8
2753:24	infants 2651:9	2604:16	2376:17	2603:18
2760:13	infections	2604:23	inspect 2370:4	2603:20
industries	2728:1, 2728:2	2614:14	2429:19	2604:21
2509:24	infinite	2615:16	2430:13	2605:25
2676:9	2618:10	2619:1	2503:13	2606:1
industry 2339:5	inflated	2667:24	2518:20	2606:21
2340:10	2594:13	2669:9	2533:21	2609:9
2340:24	inflates 2607:8	2669:13	2539:21	2610:25
2355:2	inflation	2676:21	2539:25	2623:15
2355:20	2602:22	2678:11	2557:22	2640:17
2368:1, 2368:4	influence	2678:14	2600:14	2641:13

Volume 8
9/29/2021

EIB Ozone Hearing

2641:13	2599:4, 2599:6	2551:9	intermittent	2568:21
2641:16	2599:9	2552:21	2546:9	2570:2
2719:14	2599:20	2553:6	2548:23	2571:19
2776:17	2599:23	2557:15	2579:11	2571:24
inspections	2600:8, 2601:9	2558:9, 2559:5	Intermountain	2572:22
2369:19	2601:12	2559:9, 2561:2	2330:19	2572:23
2373:7	2601:18	2562:17	2391:3, 2391:4	2589:23
2429:22	2602:18	2563:4	internal	2592:17
2429:22	2603:9	2575:23	2464:18	2596:3, 2596:6
2430:5	2603:16	2596:9	2534:3	2596:10
2431:15	2603:23	2603:23	international	2611:15
2431:18	2604:2, 2604:4	2610:2, 2613:2	2572:25	2611:16
2436:21	2605:1, 2606:3	instrumental	2592:15	2611:17
2437:6	2607:12	2456:15	Internet 2744:2	2612:22
2450:21	2607:14	instruments	interpret	2615:16
2458:10	2610:2, 2613:2	2541:1	2739:6	2615:19
2494:17	2625:22	intend 2424:11	2739:12	2615:20
2502:21	2626:2, 2629:5	2425:5	2739:15	2633:3
2502:22	2632:2, 2653:3	intended 2641:7	interpretation	2633:17
2502:25	2663:4, 2691:1	2760:22	2446:8	2633:21
2510:16	2718:13	intends 2388:22	interpretations	2633:21
2519:24	2719:11	intensive	2461:1	inventory's
2526:16	2720:15	2519:5	interrupt	2550:1
2527:8	2748:17	intent 2385:14	2442:20	2551:17
2530:20	2748:19	2385:15	2528:14	inventory-based
2530:22	2749:4, 2749:9	2425:11	2538:11	2555:17
2539:6, 2540:4	2750:18	2461:4	2539:13	invest 2698:21
2541:1, 2545:1	2750:21	2776:10	2649:2	investigate
2546:11	2762:21	intentional	2670:17	2356:3
2546:25	2763:2	2635:7	intersection	investigates
2547:2, 2551:6	2772:25	intentions	2371:24	2634:2
2551:9	2776:5, 2776:7	2423:19	2747:12	investigation
2552:21	2776:14	interchangeably	intro 2613:19	2448:19
2552:24	install 2498:11	2583:15	introduce	2456:12
2553:6, 2557:5	installation	2721:1	2391:2, 2516:9	2631:6
2558:1	2401:3, 2403:6	interest	2736:1	investing
2558:13	2403:9	2354:16	introduced	2491:17
2559:5, 2561:1	installed	2382:8, 2386:3	2355:14	2507:16
2561:3	2395:24	2400:13	introduction	2507:17
2562:16	2397:16	2457:11	2425:21	investment
2562:16	2401:3	2457:12	2666:11	2507:11
2562:17	2401:10	2521:9	2668:2, 2739:4	2648:8
2563:5	2403:10	2709:16	intuitive	invisible
2575:23	instance 2570:8	2762:7	2359:15	2546:21
2581:6	instances	interested	intuitively	invite 2364:23
2581:15	2458:13	2459:11	2704:1	2374:14
2582:16	instigated	2459:19	inventories	2482:4
2585:24	2675:13	2657:21	2339:8	2576:16
2586:5, 2587:6	Institute	2752:16	2550:11	2770:17
2589:17	2463:20	2783:14	2596:13	involve 2468:5
2593:11	2497:19	interesting	2633:5	involved 2548:1
2594:10	2578:16	2544:22	2633:19	2759:23
2594:14	2606:18	2631:9	inventory	involvement
2594:18	instrument	interests	2339:22	2751:20
2594:23	2429:24	2769:3	2544:19	2752:15
2595:14	2430:7	interference	2549:3	2759:25
2596:9	2430:19	2756:3	2549:13	involving
2597:22	2436:23	Interior 2399:7	2550:3	2755:15
2597:23	2473:21	2412:13	2555:15	IPA 2348:23
2597:25	2543:6	Intermittency	2556:16	IPA's 2348:21
2598:20	instrument-b...	2338:20	2556:17	IPANM 2344:10

Volume 8
9/29/2021

EIB Ozone Hearing

2348:9 2512:13 IPANM's 2348:8 IR 2607:12 2607:19 Irakulis-Loi... 2338:23 2545:19 issue 2350:10 2350:14 2350:16 2350:17 2350:23 2356:2, 2356:6 2356:15 2359:3, 2360:5 2361:16 2361:24 2362:12 2362:15 2362:18 2378:6, 2389:4 2403:5, 2412:2 2424:3 2424:13 2426:10 2449:19 2473:8 2510:10 2512:1 2512:16 2517:7, 2521:2 2521:12 2548:22 2571:25 2585:2, 2592:2 2662:8, 2678:2 2712:4 2713:19 2772:8, 2778:2 2781:19 issued 2652:11 2663:2 issues 2345:14 2379:21 2379:25 2381:7 2387:16 2390:18 2391:6 2391:11 2394:19 2396:8 2410:20 2410:23 2411:12 2411:15 2411:21 2467:20 2478:5 2487:16	2501:13 2501:15 2509:10 2509:15 2547:12 2576:20 2580:21 2585:25 2586:11 2639:22 2639:23 2642:16 2643:1 2713:23 2714:1 2717:22 2755:2 2769:14 issuing 2499:21 item 2710:21 items 2484:9 J J-E-S-S-E 2508:12 J-O-N-A-T-H-A-N 2504:13 J-R 2492:12 Jack 2479:16 Jacob 2339:10 Janoe 2332:10 2336:11 2512:23 2513:9 2514:22 2514:25 2515:5, 2523:7 2523:9 2523:10 2523:15 2523:19 2523:23 2524:17 2528:17 2529:6 2536:18 2536:20 2536:24 January 2343:23 2362:23 2526:18 2526:19 2526:20 2558:14 2558:15 2558:15 2559:19 2560:7 2560:24 Jaynes 2330:8	2336:20 2624:1, 2624:2 2624:4, 2624:6 2626:22 2626:25 jaynesda@law... 2330:14 jeff.holmste... 2332:19 Jeffrey 2332:15 2339:6 Jennine 2330:4 Jesse 2336:6 2488:22 2508:6 2508:18 2508:25 Jet 2545:6 Jim 2559:18 2560:4 JJ 2717:15 JJJ 2340:22 2519:22 2521:6 2591:16 2591:18 2593:5 job 2497:25 2586:25 jobs 2340:23 2347:19 2490:14 2491:17 2506:5 2506:10 2506:16 2506:20 2507:10 John 2331:3 2337:4 2462:24 2637:12 2637:20 2665:1 2669:10 2670:2 2671:16 2672:22 2674:5, 2686:9 2687:7 2687:21 john_vimont@... 2331:6 johnsoke@law... 2330:15 JOHNSON 2330:9 join 2352:24 2418:1 2461:15 2492:4 2653:16	2662:5 joined 2361:25 joining 2354:25 2358:18 joint 2354:7 2442:11 2445:2, 2446:8 2517:10 2517:14 2517:16 2518:1, 2519:2 2519:10 2520:12 2520:25 2524:6 2557:20 2558:19 2610:22 jointly 2556:24 2557:6 2610:25 joke 2698:20 Jonathan 2336:4 2488:21 2504:5, 2504:5 2504:12 2504:19 2505:4 Jones 2328:9 2374:6 2444:20 2488:12 Jordan 2329:4 Journal 2549:17 journals 2541:16 2652:18 Joy 2329:4 JR 2492:18 Juan 2329:12 2339:23 2461:22 2497:3 2646:25 2651:5 2653:18 2668:10 2681:2, 2681:3 2681:8, 2684:3 2686:23 2687:1, 2687:2 2690:5, 2698:1 2699:4, 2699:9 2699:11 2699:19 judges 2748:4 July 2359:23 2359:23 2375:19 2481:11 2605:9	jump 2389:23 2658:25 2687:19 jumping 2392:2 Junction 2407:8 2409:3 juncture 2482:21 June 2338:22 2338:24 2362:23 2605:9 Junior 2492:12 2492:25 jurisdictions 2358:10 2599:1 2600:10 justice 2371:25 2746:10 2747:4 2747:13 2747:17 2747:20 2747:23 2747:25 2748:3 2750:25 2751:15 2751:19 2752:6 2754:18 2754:23 2755:21 2757:7, 2759:5 2759:17 2759:21 2760:21 2761:20 2761:24 2762:1, 2762:3 2762:4, 2762:9 2763:1 2763:15 2767:23 2767:25 2769:4 2771:19 2772:15 K KAREN 2328:6 KARI 2332:3 KARL 2328:7 KARLA 2328:10 Katz 2328:16 2335:14 2337:25 2352:11 2352:12
---	---	--	--	--

Volume 8
9/29/2021

EIB Ozone Hearing

2352:22	2714:9	2370:9	2528:22	2490:16
2357:14	2714:24	2630:20	2610:21	2491:3, 2491:5
2358:25	2714:25	2651:15	2610:23	2491:9
2359:1	2715:11	2652:23	2610:24	2491:13
2363:13	2774:6	2660:7	kinds 2655:11	2501:17
2363:24	2774:11	kilograms	KNIGHT 2328:20	2501:19
2363:25	2774:15	2566:3, 2567:7	know 2343:22	2502:8
2364:4, 2364:5	2774:17	kind 2346:20	2357:16	2503:19
2378:24	2774:23	2358:20	2358:3, 2359:9	2522:6
2381:15	2774:24	2368:23	2359:18	2530:25
2381:20	2775:10	2389:14	2359:21	2534:10
2381:21	2775:23	2389:17	2363:11	2534:13
2382:15	2776:22	2393:19	2364:2	2534:14
2383:3	2777:7	2394:11	2364:13	2534:25
2415:24	2777:10	2407:11	2367:16	2535:1, 2535:4
2416:4, 2416:6	2777:14	2432:24	2375:9	2535:15
2416:7	2777:19	2453:15	2376:12	2535:20
2416:23	2778:1, 2778:5	2532:7	2378:1, 2379:3	2559:13
2417:1	2778:17	2534:24	2379:15	2559:25
2417:15	2778:22	2535:6	2382:25	2559:25
2417:21	2778:25	2548:19	2386:11	2562:8, 2571:5
2417:22	2779:19	2559:11	2386:23	2575:20
2422:1, 2422:2	2780:13	2571:9	2387:17	2582:11
2426:6, 2426:7	2780:24	2581:16	2389:2	2616:9
2427:17	2781:13	2584:11	2393:15	2616:10
2428:6, 2428:7	keep 2367:14	2584:12	2393:16	2622:11
2429:12	2377:17	2584:25	2393:18	2622:19
2431:6	2395:4	2585:4, 2585:7	2393:21	2622:23
2432:16	2400:15	2585:14	2394:1, 2394:3	2623:4
2433:23	2457:21	2589:18	2394:6, 2394:9	2627:24
2438:16	2505:22	2611:9	2394:17	2628:1, 2628:8
2438:18	2714:1	2627:13	2395:14	2629:2
2440:23	keeping 2400:13	2630:19	2396:5	2629:10
2441:9	2400:13	2651:13	2397:13	2630:12
2441:12	2483:24	2696:13	2397:18	2631:2, 2631:3
2443:7	2497:25	2699:17	2397:24	2631:13
2443:10	2714:3	2699:18	2397:25	2632:7
2443:14	2762:25	2700:1, 2705:8	2400:25	2632:10
2451:10	2763:15	2724:10	2402:18	2633:14
2451:16	keeps 2387:17	2771:12	2404:3, 2410:1	2634:2, 2640:3
2457:16	KEIFER 2330:9	2772:11	2410:1	2649:8, 2654:9
2460:14	KENNA 2337:8	Kinder 2333:2	2410:22	2655:25
2460:18	2649:25	2442:11	2411:10	2659:2, 2659:5
2460:19	2650:6	2443:3	2411:13	2659:5, 2659:7
2460:20	2650:12	2444:15	2412:1, 2412:7	2659:12
2461:7, 2465:4	2650:14	2445:2	2416:3, 2418:1	2659:14
2465:16	2650:20	2445:10	2421:7	2659:15
2465:20	Kennedy 2329:8	2445:22	2421:17	2665:14
2466:15	Kenney 2651:16	2447:19	2422:25	2671:2, 2673:6
2467:4, 2467:9	2653:17	2448:10	2424:13	2695:4
2472:1, 2475:9	key 2396:4	2455:8, 2516:3	2426:1, 2426:1	2695:13
2475:13	2518:16	2516:5	2427:5	2698:5
2475:15	2519:2, 2719:5	2516:11	2439:11	2698:25
2477:12	2719:20	2516:24	2443:10	2699:18
2478:7, 2478:9	keyboard	2517:6	2449:7, 2456:7	2700:2
2480:3, 2480:4	2640:22	2517:10	2459:18	2700:17
2483:6, 2483:7	kids 2367:11	2519:11	2460:12	2701:4
2485:12	2367:24	2520:3	2465:20	2702:13
2485:17	2367:24	2520:11	2475:3, 2475:5	2706:6, 2706:8
2485:19	2368:2	2521:1, 2521:4	2480:21	2706:23
2511:20	2368:10	2522:7	2483:24	2710:7

Volume 8
9/29/2021

EIB Ozone Hearing

2717:21	2461:5	2522:9	2498:23	2761:14
2717:22	2461:19	2525:23	2509:10	2761:25
2718:21	2463:17	2528:23	2545:20	2762:3, 2762:6
2719:21	2464:18	2640:12	2567:24	2764:15
2720:6, 2720:8	2464:21	2710:6, 2710:8	2681:15	2766:16
2724:3	2464:24	2711:22	2704:12	2767:16
2724:16	2466:1	2712:3, 2712:7	largest 2338:13	laws 2746:23
2727:1	2466:17	2729:24	2370:2	2751:23
2730:12	2469:22	2756:18	2490:17	lawyer 2352:17
2732:18	2472:10	2767:22	2503:10	2734:2
2733:1	2472:21	2768:3	2546:17	2734:13
2734:20	2474:9	Lara 2328:16	2548:11	lawyers 2351:20
2735:9, 2739:3	2474:14	2460:11	2653:12	2399:5
2740:1, 2740:4	2474:21	lara.katz@st...	2659:18	2781:12
2740:5, 2740:8	2475:10	2328:19	2659:20	2782:20
2740:18	2475:11	large 2338:20	Las 2329:20	laying 2662:18
2768:9	2475:12	2344:18	lastly 2610:6	LDAR 2354:8
2769:20	2477:19	2409:1	lasts 2567:20	2355:1
2769:23	2478:14	2414:25	late 2349:2	2355:12
2770:10	2480:7	2428:20	2363:15	2356:6, 2356:7
2781:7, 2782:7	2774:10	2430:17	2378:5, 2481:5	2356:10
knowledge	2774:12	2470:15	2541:17	2356:22
2563:2	2774:12	2470:17	2542:12	2356:24
2570:25	2774:24	2491:17	2638:2	2357:3
2590:2, 2590:6	2778:24	2498:25	2713:16	2357:25
2626:12	2779:7	2499:1	2771:10	2362:22
2734:2	2780:24	2501:19	lateral 2703:14	2364:9
2734:22	Kuehn's 2640:16	2532:22	laterals	2375:19
2735:6, 2753:1		2534:21	2703:10	2376:10
knowledgeable	L	2545:3, 2545:9	latest 2642:2	2378:9
2375:2		2545:11	Latino 2506:6	2378:11
known 2747:12	L-I-Z 2366:18	2545:22	2753:22	2384:4
2753:6	L-O-N-G 2489:14	2546:12	Latinx 2502:1	2415:25
2753:15	L-O-R-I 2496:13	2554:12	latitudinarian	2427:16
2754:19	labeled 2640:2	2555:16	2484:8	2429:17
knows 2685:5	labor 2570:1	2557:8	law 2329:15	2430:25
2686:4	laboratory	2559:10	2329:15	2431:23
2734:16	2544:7, 2545:7	2571:6	2329:19	2432:8
kolson@monta...	2738:18	2571:11	2330:3, 2330:8	2432:22
2332:7	lack 2369:10	2574:14	2330:9	2432:23
ksoloria@nma...	2493:20	2575:9	2330:10	2432:25
2328:13	2586:1	2575:11	2330:12	2433:11
Kuehn 2428:12	lacks 2666:2	2575:13	2331:17	2433:20
2428:14	laid 2616:6	2575:15	2331:19	2435:25
2429:12	landfill 2755:1	2575:25	2577:12	2436:11
2431:6	2755:4	2580:10	2577:20	2448:21
2433:23	lands 2368:9	2580:13	2578:9	2455:22
2438:16	2625:3, 2625:8	2581:3	2621:24	2456:6, 2456:8
2440:25	2625:9	2612:24	2624:7, 2736:3	2456:16
2441:12	lane 2559:25	2646:12	2746:2, 2746:2	2457:12
2441:13	language 2396:4	2646:14	2746:5, 2746:6	2457:17
2441:20	2402:17	2656:2	2746:7	2458:10
2446:18	2402:19	2672:25	2746:19	2463:1, 2474:3
2446:19	2408:3	2681:19	2747:8	2476:22
2447:3	2442:11	2682:12	2747:11	2512:17
2447:25	2443:5	2690:2	2747:11	2512:19
2448:3	2443:25	2690:25	2747:14	2518:9
2457:24	2444:25	2691:6, 2770:9	2747:19	2518:10
2459:2	2445:2	2772:1	2747:21	2518:19
2460:21	2445:23	larger 2411:19	2748:2	2518:21
2460:25	2457:23	2467:18	2754:15	2531:2, 2532:9

Volume 8
9/29/2021

EIB Ozone Hearing

2532:14	2608:14	2705:20	2542:8, 2652:3	2595:14
2532:22	2608:16	2706:8	2736:20	2605:20
2533:1, 2533:7	2608:17	2706:13	2740:10	2607:12
2533:20	2608:21	2706:21	leads 2761:22	2611:6
2534:8, 2535:1	2609:3, 2609:5	2707:6, 2707:7	League 2351:18	2625:22
2535:3	2609:7	2707:7	leak 2428:18	2626:1
2535:13	2609:16	2707:15	2429:16	2639:13
2535:16	2610:7, 2610:9	2707:17	2429:21	2640:7, 2646:2
2535:22	2615:6, 2615:7	2709:1, 2709:9	2430:12	2646:3, 2646:6
2536:1, 2539:5	2615:9	2709:11	2431:2	2646:7, 2646:8
2540:5	2616:21	2714:21	2436:18	2646:15
2550:23	2618:16	2715:5	2436:19	2646:16
2551:3, 2551:5	2618:21	2715:18	2437:1, 2437:4	2646:18
2552:6, 2557:1	2619:15	2716:3	2437:16	2646:19
2557:11	2622:4	2716:13	2437:17	2646:19
2557:16	2622:15	2718:7	2437:18	2647:8
2557:21	2622:19	2718:25	2438:9, 2439:2	2647:14
2559:22	2622:20	2745:2, 2745:9	2439:3	2647:18
2561:14	2622:23	2748:18	2439:25	2647:18
2562:17	2623:18	2749:4, 2749:8	2440:6	2667:6
2562:25	2634:2	2749:9	2440:20	2668:25
2575:13	2639:11	2749:11	2440:22	2670:16
2577:17	2639:14	2771:17	2440:22	2674:25
2578:15	2641:3, 2641:8	2775:13	2441:21	2675:4, 2675:5
2579:1, 2579:8	2642:3, 2644:2	2775:17	2445:17	2675:7
2581:6, 2581:8	2644:6, 2644:7	2775:21	2446:1	2675:12
2587:14	2644:11	2777:10	2446:13	2675:18
2589:9, 2593:3	2644:13	2778:8, 2778:8	2449:17	2675:20
2593:17	2644:14	2778:19	2450:12	2675:24
2594:6, 2594:8	2644:17	LDARs 2689:5	2451:4	2676:8
2595:4, 2596:8	2644:21	2690:12	2452:25	2676:11
2596:17	2644:25	Lea 2490:9	2459:22	2676:13
2597:16	2645:8, 2647:7	2490:13	2459:25	2676:22
2598:3	2647:10	2490:19	2465:24	2676:23
2598:13	2647:11	2490:22	2466:9	2676:24
2598:16	2647:14	2491:2	2470:14	2676:25
2598:23	2647:21	2491:12	2476:8	2677:14
2601:3, 2601:7	2647:23	2505:6	2476:12	2679:1
2601:24	2647:24	2505:15	2516:16	2681:18
2602:1, 2602:5	2648:1	2506:12	2516:24	2682:6
2602:9	2648:17	2651:5	2517:7	2684:11
2602:10	2648:21	2653:18	2517:10	2684:21
2602:11	2672:12	lead 2494:1	2518:21	2684:22
2603:3	2672:13	2494:7	2519:4, 2519:6	2686:7
2603:13	2672:25	2586:12	2520:4	2697:15
2603:16	2673:15	2644:18	2520:19	2697:16
2604:4, 2604:9	2675:13	2644:19	2523:25	2697:18
2604:13	2675:14	2719:3, 2720:2	2525:2, 2525:5	2698:7, 2698:9
2604:18	2676:2, 2678:6	2747:19	2525:9, 2527:2	2698:11
2604:19	2684:13	leader 2662:15	2535:23	2748:16
2604:21	2687:25	leaders 2656:4	2542:24	2762:21
2604:25	2688:4, 2688:5	2656:5	2546:23	2763:6
2605:18	2688:11	2659:10	2551:9, 2551:9	2771:17
2605:25	2688:17	2659:11	2552:4, 2558:2	2775:1
2606:7, 2607:3	2689:2	2748:4	2558:3, 2558:9	leakage 2433:1
2607:7, 2607:9	2689:25	leadership	2559:24	2433:20
2607:16	2690:14	2503:22	2561:6, 2561:8	2452:2, 2555:2
2607:18	2704:17	2505:2, 2508:1	2562:18	leaked 2609:21
2608:5, 2608:6	2704:18	2656:7	2578:22	2609:25
2608:8, 2608:9	2705:3	leading 2493:23	2586:8, 2589:5	2626:3
2608:12	2705:16	2507:18	2589:7	leaking 2429:20

Volume 8
9/29/2021

EIB Ozone Hearing

2430:6	2605:3	2353:3, 2353:5	2584:24	2474:1
2430:14	2639:19	2353:12	2584:25	2578:13
2430:14	2645:24	2374:18	2595:2	2712:3
2431:15	2646:4	2374:22	2662:20	linked 2721:5
2439:20	2646:14	2374:22	2688:15	links 2340:20
2458:15	2653:4	2418:16	2721:13	2704:24
2533:23	2653:14	2418:23	2735:22	2722:16
2613:4	2663:5	2627:14	2736:9, 2750:5	lips 2485:4
2676:25	2675:11	2745:15	2771:15	Lisa 2330:18
2676:25	2675:17	2754:8	2777:24	2335:8, 2387:5
2718:14	2685:3	2754:22	Lewis 2746:2	2390:16
2776:18	2685:25	2754:22	license 2391:17	2391:2
leaks 2358:7	2686:2, 2686:5	2757:6, 2757:8	2783:18	lisa_devore@...
2369:9	2689:4, 2704:5	2759:2, 2759:3	life 2372:5	2330:21
2369:20	2704:9	2761:3	2651:14	list 2373:24
2370:4, 2373:7	2704:11	2761:17	2726:1	2404:17
2428:8	2704:19	legitimate	2753:25	2420:10
2428:24	2705:7	2460:17	lifetime 2604:1	2440:16
2429:1, 2429:4	2705:14	lengthening	2723:18	2487:3
2430:7, 2431:3	2748:7	2425:8	2726:14	listed 2348:8
2438:11	2748:10	Leslie 2334:3	light 2344:22	2429:11
2439:18	2748:23	2336:8	2462:16	2702:9
2439:22	2750:18	2515:15	2462:20	2720:24
2439:24	2776:18	2516:10	2484:14	listen 2370:7
2440:2, 2440:8	lean-burn	Lessons 2339:4	2717:1	2377:24
2440:19	2394:8	Lett 2338:21	liked 2719:24	literally
2452:6	2396:16	letting 2636:22	likelihood	2505:10
2453:12	2396:17	leukemia	2604:10	2523:19
2457:1, 2457:8	2403:18	2726:15	2729:1	2703:15
2457:13	lean-burns	2726:23	limit 2397:4	literature
2457:25	2394:23	2727:7	2422:20	2470:24
2458:17	leap 2415:25	level 2353:9	2458:20	2739:15
2493:20	2482:4	2353:15	2507:15	little 2347:7
2494:17	2482:17	2360:18	2565:21	2350:25
2494:25	learned 2339:4	2368:20	2565:25	2354:21
2495:7	2542:15	2382:8	2566:2, 2566:9	2359:14
2502:22	2572:1	2459:12	2566:15	2392:25
2503:13	2572:13	2472:24	2566:21	2395:22
2516:4	leases 2415:7	2473:11	2725:6	2408:22
2525:11	2415:7	2493:24	limited 2366:5	2421:25
2525:17	leave 2368:13	2494:4, 2506:2	2424:4, 2425:9	2445:6
2533:23	2378:2, 2422:2	2573:15	2488:25	2463:16
2534:1	2499:17	2573:17	2494:7, 2498:5	2480:21
2534:16	2665:14	2633:19	2549:8	2481:2
2538:3	Lee 2626:9	2699:23	2570:19	2483:12
2555:12	2716:3	2700:1	2570:20	2486:12
2563:4	2749:23	2721:16	2649:22	2486:19
2578:20	2763:8	2721:20	limits 2394:9	2491:12
2579:1, 2579:6	left 2350:25	2722:8, 2725:1	2395:13	2525:16
2579:10	2375:24	2725:6, 2731:9	2739:9	2553:2, 2564:8
2579:12	2545:13	2731:11	2739:13	2564:19
2579:17	2608:24	2731:12	Lincoln 2333:18	2571:13
2579:20	leg 2705:13	2731:15	line 2353:21	2572:20
2580:6	legal 2351:15	2738:15	2393:15	2574:19
2580:17	2351:17	2759:22	2438:13	2574:21
2585:25	2351:25	2760:2, 2760:4	2446:9	2579:19
2586:2	2352:14	2760:11	2486:23	2582:15
2586:10	2352:16	levels 2397:6	2771:13	2582:17
2589:11	2352:17	2398:2, 2414:6	linear 2722:2	2583:12
2589:18	2352:19	2414:9	lines 2345:2	2585:4, 2592:2
2597:21	2353:1, 2353:2	2544:16	2429:2, 2429:9	2595:8, 2607:1

Volume 8
9/29/2021

EIB Ozone Hearing

2634:11	living 2367:21	location 2407:3	2404:7	2585:6
2634:13	2369:18	2407:18	2404:17	2585:18
2643:16	2372:20	2440:18	2411:17	2586:10
2643:19	2493:11	2509:23	2435:11	2586:10
2649:5	2494:16	2727:2	2435:22	2586:15
2657:23	2502:20	locations	2468:21	2589:11
2660:16	2596:20	2525:12	2485:13	2617:5
2663:25	2596:23	2527:7	2504:3	2617:10
2666:10	2624:17	2722:18	2506:21	2617:12
2666:24	2624:19	2730:25	2507:1	2618:11
2671:24	2626:13	2731:7	2533:13	2625:7, 2634:3
2673:22	2626:18	log 2342:11	2548:20	2674:20
2684:18	2653:2	2342:20	2569:15	2688:2, 2704:2
2689:5, 2701:5	2663:23	logistical	2569:22	2706:5
2708:17	2663:25	2349:2	2612:20	2714:13
2708:20	2722:18	2349:21	2615:12	2714:17
2716:23	2723:15	2390:19	2629:11	2725:9
2721:22	2728:20	long 2335:16	2629:23	2759:19
2726:5	2728:22	2374:21	2630:7, 2634:3	2759:21
2736:13	2749:21	2403:2, 2417:9	2645:17	looks 2473:17
2737:2	2750:3	2441:2	2658:20	2560:20
2738:15	2763:10	2449:11	2689:9	2729:18
2745:19	Liz 2335:4	2488:20	2689:16	2732:21
2765:7	2365:23	2489:4, 2489:5	2690:7	2732:24
2765:15	2366:8	2489:7	2690:10	loop 2417:14
live 2368:13	2366:18	2489:14	2698:10	loose 2423:18
2369:6	2367:1, 2367:8	2489:18	2736:5	Lori 2335:20
2491:14	2427:21	2490:1, 2490:7	2738:18	2488:20
2493:16	2460:11	2490:10	2755:23	2496:5
2505:4	LLC 2327:22	2492:3, 2531:1	2760:18	2496:20
2593:16	2329:19	2531:4	2779:10	2497:2
2596:22	2333:2, 2333:3	2533:24	looked 2434:2	Los 2738:18
2624:11	2333:3, 2333:9	2537:17	2554:17	lose 2644:15
2624:22	2333:9	2622:11	2579:23	losing 2457:12
2625:2, 2625:6	2333:10	2657:21	2617:18	lost 2347:19
2625:8, 2625:9	2333:21	2700:23	2630:24	2347:19
2651:6	LLP 2332:10	2731:24	2635:9, 2675:2	lot 2346:16
2651:12	2332:16	2731:25	2676:11	2351:14
2652:24	2333:5	2745:19	2677:6, 2679:6	2354:10
2655:15	2333:12	long-standing	2723:22	2374:17
2657:19	local 2499:20	2502:24	2723:22	2377:9, 2393:8
2657:25	2499:21	long-term	2724:21	2393:22
2658:12	2505:5	2501:23	2724:22	2393:23
2660:9	2548:10	2663:21	2726:17	2394:5
2722:12	2584:25	longer 2639:16	2726:20	2394:25
2745:5	2642:9	2639:17	2726:24	2395:8
2749:17	2718:18	2723:17	2756:18	2395:13
2750:7	2719:6	2732:25	looking 2382:25	2409:6
2750:15	localized	2762:1	2393:19	2409:17
2750:23	2736:9	longer-term	2396:2	2410:2, 2411:5
2762:23	located 2497:4	2586:16	2408:10	2411:9
2763:12	2539:6	longish 2422:8	2420:20	2411:11
2772:21	2539:20	look 2359:22	2422:20	2485:9, 2535:1
liveable	2595:14	2361:7, 2366:6	2456:25	2535:1
2373:18	2600:14	2366:8	2456:25	2535:18
lived 2505:9	2600:16	2370:12	2485:17	2546:8, 2548:3
2658:10	2601:19	2373:22	2515:25	2549:19
2770:5	2626:4	2394:14	2534:4, 2547:3	2551:23
lively 2479:19	2719:15	2395:11	2563:25	2580:16
2479:19	2728:19	2395:21	2580:4	2581:10
lives 2501:11	2775:2	2402:16	2581:14	2639:21

Volume 8
9/29/2021

EIB Ozone Hearing

2659:12	2612:16	2368:11	2590:13	2406:20
2671:20	2625:18	2651:10	2590:14	2416:3
2687:25	2745:5	2652:6	2613:1	2416:25
2694:9	low-production	2655:18	2628:25	2417:17
2698:19	2555:13	2663:25	Lyon's 2538:12	2418:4, 2418:6
2701:12	2555:20	2719:24	2558:22	2419:23
2703:16	Lowe 2340:23	luxury 2663:23	2632:24	2421:11
2706:6	Lowe-Skillern	2664:1		2421:14
2707:22	2340:23	Lyon 2336:13	M	2423:21
2714:15	lower 2392:24	2338:6		2424:4
2723:6	2394:9	2338:18	M-A-double-N...	2424:10
lots 2351:20	2394:14	2339:9, 2451:3	2500:12	2425:19
2685:15	2398:1, 2404:1	2451:18	M-C-capital-...	2427:3
2685:15	2408:4, 2408:6	2451:22	2650:8	2427:17
2687:23	2442:1, 2442:1	2537:5, 2537:9	M-I-M-I 2661:14	2427:19
LOUIS 2332:3	2455:5, 2455:9	2537:10	M-O-O-R-E	2441:16
Louisiana	2498:14	2537:19	2661:10	2442:23
2332:11	2544:23	2537:22	M.J 2604:12	2446:23
love 2656:13	2594:10	2538:1, 2539:3	2604:20	2447:13
2656:14	2602:13	2539:12	ma'am 2489:8	2447:17
Lovells 2333:5	2603:12	2539:16	2496:18	2474:18
2516:2	2671:3, 2671:7	2541:4	2504:12	2478:13
low 2397:7	2671:15	2541:13	2504:17	2478:25
2518:7	2674:16	2541:23	2654:13	2479:1, 2480:5
2518:23	2674:19	2542:4	2702:2	2480:14
2544:16	2675:4, 2679:1	2547:23	2705:25	2482:6
2551:22	2680:1	2550:7	machine 2783:8	2482:12
2553:16	2680:12	2552:19	madam 2344:17	2483:9, 2487:8
2554:21	2681:9	2555:25	2345:10	2487:25
2554:21	2681:10	2558:17	2345:18	2512:14
2612:25	2685:2	2559:1, 2560:1	2347:13	2512:23
2673:25	2688:12	2561:24	2348:13	2513:5
2674:21	2689:5, 2689:6	2562:4, 2562:7	2349:1, 2350:8	2513:14
2677:19	2691:14	2562:12	2350:22	2514:20
2678:7	2705:21	2562:14	2352:12	2515:21
2680:10	2731:23	2563:1, 2563:1	2354:3	2517:2, 2517:2
2689:13	2731:25	2563:10	2355:10	2522:1, 2522:3
2724:10	2732:4	2563:13	2357:15	2523:10
2737:19	lowered 2737:15	2563:14	2359:1	2523:23
2750:19	LP 2333:9	2564:14	2360:10	2523:23
2762:20	2333:17	2576:2, 2576:5	2362:6, 2363:5	2531:23
2776:15	lrose@montan...	2576:9, 2577:6	2363:25	2531:25
2776:16	2332:7	2577:10	2375:8	2536:20
low-emitting	Luisa 2331:19	2577:19	2375:16	2537:2
2524:2, 2525:4	Lujan 2367:17	2578:7	2377:8	2537:21
2525:8, 2526:7	2493:7	2578:14	2377:22	2562:5
2556:25	2502:14	2581:22	2378:24	2564:13
2625:18	2651:16	2582:6, 2582:9	2379:9, 2380:3	2577:3, 2578:4
2775:20	2662:15	2582:19	2380:21	2582:5, 2582:7
low-income	lunch 2350:18	2583:8, 2583:9	2380:23	2583:2, 2588:3
2662:13	2427:1	2583:12	2382:5	2591:13
2745:13	2480:22	2583:19	2382:24	2613:12
2747:6	2486:16	2584:8	2383:11	2621:17
2752:22	2488:4	2584:20	2384:1	2624:2
2756:11	lung 2509:25	2584:23	2384:15	2626:23
2760:6, 2766:1	2655:9	2585:9, 2586:6	2385:6, 2386:1	2627:9
low-producing	2719:25	2587:5	2398:13	2627:10
2540:22	2754:3	2587:19	2399:17	2632:19
2541:3	lungs 2367:11	2588:18	2404:10	2632:20
2556:24	2367:16	2589:21	2406:6	2634:19
2603:11	2367:24	2590:11	2406:18	2634:24

Volume 8
9/29/2021

EIB Ozone Hearing

2635:3, 2636:2	maintained	2493:20	marginalized	2727:6
2636:11	2547:21	malfunctioning	2625:2, 2745:4	2727:23
2637:4, 2639:9	2581:1	2547:17	2749:16	MC 2337:8
2642:19	2587:13	2705:6	2750:13	2649:25
2643:13	2751:17	2718:14	2762:14	2650:6
2668:13	2752:1	malfunctions	2762:17	2650:12
2670:1, 2679:3	maintaining	2540:24	MARIA 2333:4	2650:14
2690:21	2525:15	MAN-LEV 2500:18	mark 2712:17	2650:20
2693:4, 2696:4	2677:14	manage 2391:5	2740:10	McCabe 2355:24
2703:18	2705:11	2519:5	markedly	2358:17
2708:3	maintains	management	2687:20	Mcf 2683:25
2709:15	2439:15	2351:16	Marshall 2331:9	2684:1
2710:11	maintenance	2398:24	mass 2542:18	McKenna 2649:17
2711:7	2369:10	2399:3	2568:25	2649:23
2711:18	2451:4	2399:11	2684:5	2650:7, 2650:7
2712:1	2493:21	2592:21	2684:10	2650:22
2712:11	2555:2, 2555:4	manager 2334:3	master 2391:15	2653:22
2712:22	2574:9	2516:11	master's 2592:8	2655:3
2713:3, 2713:7	2574:13	managing	match 2396:22	McKenna's
2715:14	2574:14	2592:14	2396:23	2655:16
2716:1	2586:1, 2586:2	mandates 2498:1	2396:24	McNally 2648:9
2729:11	2586:5	2498:19	matches 2396:25	mean 2345:21
2730:4, 2733:8	2586:11	2499:2, 2499:4	material	2355:6, 2363:3
2735:7	2586:24	2499:16	2377:14	2380:13
2735:14	2587:10	mandatory	materials	2388:23
2738:9	2587:17	2468:7	2638:15	2414:3
2738:11	2589:1, 2589:8	manifest 2728:1	2682:23	2422:22
2740:13	2589:13	manipulated	2682:24	2446:12
2741:3	2589:14	2462:12	2712:18	2486:17
2741:20	2677:17	Mann-Lev	2750:10	2530:18
2742:2	2705:10	2335:22	math 2360:18	2535:14
2742:23	major 2369:17	2488:21	2360:20	2535:15
2743:13	2494:13	2500:4, 2500:6	2360:21	2552:23
2745:21	2497:12	2500:7	mathematical	2569:25
2751:2	2502:17	2500:11	2638:8	2571:9
2763:17	2507:7	2500:16	matter 2327:4	2579:12
2764:5	2662:10	2500:24	2327:13	2582:19
2770:14	2666:11	2501:3, 2504:2	2342:5, 2345:7	2586:6, 2587:2
2771:3, 2771:5	2678:24	manner 2423:7	2352:6, 2368:4	2629:8
2771:21	2683:7, 2683:9	2458:21	2384:23	2640:15
2773:4	2683:12	manufacture	2398:22	2646:4
2773:11	2683:17	2498:4	2433:18	2652:24
2774:3, 2779:4	2685:5	manufacturers	2548:19	2672:5
2779:25	makeup 2626:12	2498:9	2637:21	2681:24
2780:9	making 2352:8	mapped 2724:15	2644:17	2702:16
2780:10	2353:5	Mapper 2542:19	2678:7	2702:16
2781:4	2401:24	2545:8	2744:20	2709:3
2781:15	2427:5, 2443:2	2545:25	2751:10	2728:17
magnitude	2459:20	2580:8	2767:13	2731:10
2476:13	2476:1, 2501:2	maps 2631:9	2767:16	2735:3
2579:9	2507:13	2725:13	matters 2365:15	2737:18
magnitudes	2530:1, 2581:1	March 2543:15	MATTHEW 2331:9	2772:18
2594:14	2584:17	Marcy 2340:23	MATTHIAS	meaning 2704:2
main 2329:20	2668:14	marginal	2333:17	2722:3
2360:5	2685:13	2339:11	matthias.say...	2736:25
2367:14	2686:1	2553:15	2333:20	meaningful
2497:3	2705:10	2553:20	maturity 2534:7	2751:20
2647:11	2760:12	2553:21	max 2725:23	2752:15
2688:1	2768:7	2553:24	maximum 2724:22	2759:25
maintain	malfunction	2554:12	2726:18	means 2356:1
2458:19	2369:10	2555:3	2726:20	2362:15

Volume 8
9/29/2021

EIB Ozone Hearing

2395:25	2565:20	2389:10	2707:13	2409:11
2431:3	2565:22	2389:14	2707:21	2414:8, 2417:5
2628:17	2566:6	2395:9	2709:25	2417:11
2671:17	2566:12	2412:24	2710:4, 2710:5	2418:6, 2462:2
2751:19	2566:23	2412:25	2710:13	2510:12
2752:16	2567:12	2413:1, 2413:8	2711:23	2528:15
2752:21	2568:6	2413:11	2714:10	2556:1
2756:6	2569:12	2413:12	2714:11	2556:23
meant 2438:21	2570:6	2413:23	2740:18	2568:25
2559:22	2570:10	2414:1	2740:20	2595:21
2620:18	2570:12	2414:10	2740:21	2632:1
2623:4	2570:14	2414:12	2740:24	2667:12
2750:24	2570:16	2414:13	2773:13	2672:9
2751:15	2570:22	2414:21	2773:14	2684:15
measure 2340:23	2570:25	2420:24	2773:17	2688:6
2430:9, 2528:1	2573:7, 2573:9	2444:9	2773:19	2688:13
2533:23	2573:13	2479:13	2780:18	2737:7, 2739:1
2566:18	2574:6	2479:14	2780:21	2739:4
2583:24	2574:12	2479:15	2780:22	2739:20
2732:21	2574:24	2479:22	members 2365:12	2739:25
measured	2575:18	2479:23	2365:16	2756:14
2338:15	2580:1	2479:25	2374:11	2761:6
2550:10	2583:21	2480:1, 2509:4	2377:6	2764:20
2553:25	2588:20	2522:18	2377:19	2772:13
2564:22	2588:22	2522:19	2377:21	mentioning
2565:24	2589:24	2522:20	2378:2, 2418:5	2633:15
2566:5	2682:10	2522:21	2420:2	merely 2349:14
2580:12	2682:12	2522:23	2420:20	2358:17
2596:10	measures 2355:1	2522:24	2427:19	2360:20
2722:21	2733:10	2536:10	2444:21	2383:13
2722:22	measuring	2536:11	2501:9, 2505:1	2485:2
2722:23	2542:13	2536:13	2505:22	2532:23
2723:9	2570:8, 2570:9	2536:14	2507:6	2761:24
2771:24	mechanical	2536:15	2509:19	merits 2782:9
2772:1	2429:7	2536:16	2514:2	Mesa 2407:13
measurement	median 2726:22	2588:1, 2588:2	2514:15	2409:4
2542:10	medical 2509:15	2588:5, 2588:6	2517:3	messages
2542:16	2769:14	2588:9	2523:24	2375:13
2544:1	medicine 2509:1	2588:10	2639:9, 2662:2	met 2449:12
2555:17	meet 2373:3	2630:3, 2630:4	2662:7	2733:13
2567:5	2419:5, 2448:7	2630:9, 2631:7	2709:17	2768:20
2567:19	2533:8	2631:23	2752:16	meta-analysis
2569:2, 2569:6	2641:21	2631:24	2752:17	2433:5
2569:18	2767:18	2632:9	2753:12	2471:11
2571:1, 2596:4	meeting 2377:25	2632:11	2762:5	2549:18
2721:11	2448:22	2632:13	2777:15	2554:10
2771:25	meetings	2632:14	memory 2381:16	meteorological
measurement-...	2327:15	2702:4, 2702:5	2468:25	2723:6
2551:10	2464:20	2702:13	2474:7	meteorology
2552:15	meets 2448:20	2702:19	2615:12	2724:3
measurements	2587:17	2702:21	mention 2348:10	meters 2555:11
2339:10	2640:17	2702:24	2348:21	methane 2338:9
2544:4, 2544:8	2643:5	2703:17	2358:22	2338:11
2544:9	megawatts	2703:21	2408:20	2338:12
2544:11	2490:25	2703:22	2414:23	2338:15
2549:8	2491:1	2705:22	2502:19	2338:18
2549:15	member 2355:20	2706:2, 2706:3	2624:10	2338:21
2553:19	2375:8	2706:20	2714:16	2338:23
2565:14	2388:13	2707:1	mentioned	2339:4, 2339:8
2565:18	2388:17	2707:10	2402:23	2339:11
2565:19	2389:1, 2389:8	2707:12	2407:21	2339:13

Volume 8
9/29/2021

EIB Ozone Hearing

2339:18	2565:6	2430:7	2624:11	2450:6, 2450:8
2339:19	2566:17	2430:11	2651:4	2450:10
2340:24	2566:19	2430:19	2655:15	2456:11
2342:25	2571:15	2435:25	2664:5	2471:14
2343:23	2574:4	2436:17	2749:15	2490:17
2344:4	2579:23	2440:18	2750:23	2491:25
2344:23	2580:12	2473:21	2762:7	2493:9, 2494:7
2344:24	2583:14	2527:8, 2527:9	2767:22	2497:4
2345:22	2583:17	2544:5	Mexico 2327:1	2497:18
2345:24	2583:20	2561:14	2327:21	2497:21
2345:24	2583:22	2565:1, 2565:2	2327:23	2498:2, 2499:7
2346:3, 2346:7	2584:2, 2584:3	2565:6	2328:12	2499:23
2346:15	2584:6	2574:23	2328:15	2501:5, 2501:6
2346:16	2584:21	2575:17	2328:17	2501:8
2346:17	2584:22	2575:20	2328:18	2501:17
2346:23	2584:23	2606:3	2328:22	2502:14
2346:24	2585:12	2619:23	2328:23	2503:11
2347:11	2585:13	2672:19	2329:2, 2329:9	2503:12
2368:21	2585:17	methodologies	2329:12	2503:17
2370:3	2585:19	2568:20	2329:13	2505:5, 2505:7
2371:20	2589:23	2569:7	2329:17	2505:9
2372:15	2589:24	methodology	2329:20	2505:10
2372:16	2590:3	2358:4, 2358:7	2330:12	2505:15
2426:19	2593:22	2359:25	2330:13	2506:13
2454:24	2595:1	2448:20	2331:14	2508:2, 2509:3
2455:1, 2455:4	2595:25	2597:5	2331:17	2509:8
2455:12	2596:3	2597:11	2331:19	2509:14
2469:24	2599:24	2608:25	2331:20	2510:1, 2510:9
2470:2	2604:24	2609:18	2332:2, 2332:6	2528:8
2493:25	2605:7	2616:20	2332:23	2529:17
2494:5, 2495:7	2605:14	2778:11	2333:19	2540:8
2497:10	2605:16	methods 2429:21	2338:15	2540:19
2498:2, 2498:7	2608:24	2431:24	2341:3	2541:7, 2542:7
2501:16	2609:21	2448:12	2345:11	2544:14
2502:8, 2502:9	2609:25	2457:2, 2525:5	2348:23	2546:1, 2551:4
2503:11	2610:14	2527:4, 2559:9	2367:13	2551:8
2507:15	2611:15	2573:18	2367:20	2551:19
2520:8, 2542:5	2611:16	2605:2, 2605:5	2368:18	2552:4, 2552:9
2542:8	2633:2, 2633:3	2606:1, 2758:2	2370:3	2556:16
2542:17	2633:15	metric 2468:9	2371:22	2559:2, 2560:6
2543:3, 2543:7	2633:19	2543:8	2372:14	2561:5
2543:14	2633:21	2549:23	2372:22	2564:22
2544:17	2633:24	2601:2	2373:17	2568:9
2546:2	2634:4, 2641:2	2601:15	2392:13	2568:11
2546:22	2651:21	2655:21	2392:13	2568:13
2547:6	2651:25	metrics 2534:3	2393:16	2577:12
2549:20	2652:4	2599:18	2393:22	2577:20
2549:23	2652:20	Mexican 2505:8	2394:13	2593:15
2551:15	2653:12	2510:5	2395:1, 2395:4	2596:6
2553:19	2655:17	Mexican's	2395:11	2596:11
2554:2, 2554:7	2655:22	2370:9	2395:15	2599:25
2554:14	2662:20	Mexicans	2396:11	2604:4
2554:17	2777:3	2368:22	2398:4, 2400:4	2611:10
2554:25	methane-only	2369:1, 2369:6	2400:23	2611:14
2555:2	2346:1	2493:16	2403:20	2611:21
2555:13	methane-spec...	2494:6	2407:15	2624:7
2555:21	2556:16	2501:12	2408:13	2624:19
2556:1, 2556:3	methane-to-VOC	2501:19	2413:20	2624:23
2556:6, 2556:9	2599:25	2503:19	2413:23	2630:16
2556:11	2633:20	2510:7	2433:3	2644:5
2564:23	method 2429:25	2593:25	2449:19	2644:12

Volume 8
9/29/2021

EIB Ozone Hearing

2645:19	2776:25	2376:6, 2475:4	mirrored 2629:9	2382:17
2650:23	2783:1	2586:18	2629:13	2461:20
2651:3	Mexico's 2404:5	2639:3, 2714:2	mirrors 2600:23	2462:2, 2462:4
2653:13	2404:14	2714:3	2601:17	2462:12
2656:1	2490:16	mine 2576:23	2622:7	2471:18
2656:14	2494:1	Mineral 2748:2	mischaracter...	2485:15
2657:1	2655:14	mini 2418:15	2460:20	2485:25
2657:19	2733:2	minimal 2525:11	mischaracter...	2486:2
2658:2	Mexico-specific	minimally	2478:10	2486:11
2658:19	2589:23	2685:2	misleading	2486:13
2658:21	2596:2	minimize 2502:5	2614:5	2499:5, 2552:5
2659:11	2633:22	minimum 2565:7	misplaced	2552:5
2662:16	2634:8, 2645:4	2610:25	2637:25	2552:11
2662:20	2645:6, 2647:4	2641:3	missed 2613:18	2552:13
2662:23	2777:4	2641:25	missing 2343:7	2573:5
2668:7	Meyer 2511:25	2724:22	mission 2501:5	2645:11
2675:25	2511:25	2726:17	misspoke	2645:12
2676:4, 2676:7	Meyer's 2511:23	mining 2415:7	2681:25	2645:17
2678:14	MGMT 2339:12	2754:3, 2754:6	misstated	2645:18
2678:22	Michelle	miniscule	2440:25	2645:21
2684:7, 2685:9	2367:17	2368:10	2612:9	2646:1
2686:25	2493:7	minority	misunderstand	2646:17
2687:5	mid- '80s	2628:19	2474:24	2646:20
2687:10	2351:13	minority-owned	mitigate 2541:2	2646:21
2698:4	mid- '90s	2507:4	mitigated	2646:23
2699:10	2699:22	minute 2343:17	2551:8	2647:1, 2647:3
2699:12	2701:4	2483:23	mitigating	2647:6, 2647:8
2699:14	mid-portion	2513:11	2550:6	2666:9, 2667:5
2699:15	2407:12	2649:13	2662:24	2667:11
2718:16	middle 2360:4	2672:23	mitigation	2667:13
2718:17	2407:9, 2433:8	minutes 2364:20	2340:24	2667:22
2718:18	2433:12	2366:5, 2367:6	2385:3, 2542:9	2667:24
2720:10	2453:13	2371:17	2550:16	2668:1, 2668:6
2720:14	2453:15	2388:4	2604:24	2668:9
2721:12	2453:15	2480:10	2605:7	2668:17
2721:13	2475:19	2489:1, 2490:6	mix 2565:6	2668:22
2732:4, 2734:3	2498:14	2492:23	2575:16	2669:22
2734:20	2668:21	2496:25	2575:18	2670:5
2736:2, 2736:7	Midland 2658:22	2500:23	2575:21	2670:19
2745:14	midstream	2504:24	2575:22	2670:21
2745:15	2333:9, 2333:9	2508:23	mixed 2737:2	2671:6
2746:1, 2746:6	2473:15	2515:3	mixing 2565:7	2672:14
2746:14	mile 2369:7	2548:24	MJB&A 2340:14	2673:13
2747:15	2493:16	2565:10	mnykiel@wild...	2673:19
2747:16	2655:15	2566:13	2331:11	2674:12
2751:18	2708:17	2566:13	Mobile 2544:7	2674:14
2751:24	2708:18	2566:16	model 2355:16	2678:19
2753:2	miles 2607:22	2566:18	2359:3	2678:23
2754:21	million 2372:15	2567:1, 2567:3	2359:16	2679:8
2754:24	2490:20	2567:6	2372:18	2679:12
2755:6, 2755:7	2490:21	2567:13	2380:25	2679:18
2756:19	2543:8	2567:16	2381:7, 2381:9	2679:23
2757:13	2549:23	2567:20	2381:13	2680:3, 2680:4
2759:15	2630:22	2649:5	2381:17	2683:3
2759:16	2655:21	2649:22	2381:22	2683:23
2759:20	2725:3, 2725:9	2650:19	2381:22	2689:11
2760:22	2726:15	2654:25	2381:23	2694:18
2764:14	2727:3, 2727:7	2657:14	2381:24	2696:14
2764:25	Mimi 2661:13	2661:25	2381:24	2697:10
2769:5	2662:4	2693:7, 2714:8	2382:7	2697:12
2776:24	mind 2354:9	2742:9	2382:10	2697:13

Volume 8
9/29/2021

EIB Ozone Hearing

2699:2	2437:17	2673:4	2610:21	2453:7
2700:24	2437:18	2684:17	morning 2342:7	2453:21
2706:7, 2723:3	2437:20	2687:11	2342:13	2478:9
2723:4, 2727:1	2437:23	2687:15	2342:23	2485:10
2739:5	2438:2, 2438:7	2687:17	2348:20	2487:10
2739:11	2438:9	2687:18	2349:20	2496:2
modeling	2438:14	2689:25	2364:21	2506:19
2397:24	2438:23	2690:7, 2690:8	2365:21	2514:19
2537:8	2439:2, 2439:3	2691:20	2371:19	2514:25
2722:20	2439:7, 2439:9	2692:1	2409:18	2518:12
2739:13	2439:13	2703:25	2418:4, 2423:2	2519:18
models 2694:7	2440:18	2709:11	2423:17	2531:3
2725:2	2473:21	2719:15	2426:2	2538:19
moderate	2477:23	2776:5, 2776:7	2427:19	2606:25
2700:13	2513:21	months 2673:6	2428:16	2616:17
modest 2513:20	2517:19	2673:6, 2673:7	2489:7	2617:8
2648:10	2518:24	2673:8, 2705:5	2576:24	2642:20
modifications	2524:4, 2524:5	2777:17	2635:16	2643:5, 2654:3
2528:9	2525:5	Monument	2712:6, 2716:8	2665:21
modified	2526:25	2408:24	2774:8, 2781:2	2671:16
2525:14	2527:2	2409:2	2781:6	2672:22
2525:14	2527:16	monuments	mother 2367:23	2677:3
2676:1	2567:11	2408:21	2391:14	2678:17
Modrall 2332:22	2581:16	2408:22	2663:15	2724:7
MOELLENBERG	2605:20	Moore 2337:14	motion 2343:1	2741:18
2329:8	2772:25	2479:15	2343:4, 2344:7	2741:25
moment 2342:12	2775:1	2510:23	2348:4	2741:25
2364:23	monoxide	2511:3, 2511:8	2349:12	2742:19
2453:3, 2513:2	2396:20	2511:11	2349:13	2743:15
2514:11	Montana 2391:5	2661:1, 2661:4	2349:20	2754:17
2537:18	Monte 2723:8	2661:9, 2661:9	2351:1, 2351:5	moved 2383:1
2590:16	2725:12	2661:13	2351:9	2396:1, 2396:7
2613:9, 2636:6	Montgomery	2661:18	2352:25	2442:2, 2475:5
2666:21	2332:4	2661:20	2354:7, 2354:8	2478:4
2742:5	month 2372:8	2662:1, 2662:3	2354:19	moves 2688:14
momentarily	2662:17	2663:14	2374:16	moving 2400:14
2763:23	2761:18	2664:10	2375:6	2400:15
moms 2651:8	monthly 2431:21	moral 2372:4	2376:17	2454:3
Monday 2386:25	2432:10	Morgan 2333:2	2380:8, 2390:9	2454:10
2392:3	2435:18	2442:12	2419:3, 2419:7	2459:20
2395:10	2450:23	2443:3	2423:9	2651:17
money 2689:2	2450:25	2444:15	motivated	2660:17
monitor 2435:1	2452:11	2445:3	2355:4	2662:22
2437:7	2518:19	2445:10	Mountain 2407:5	2669:10
2437:10	2518:24	2445:23	2408:19	2687:10
monitored	2519:25	2447:20	2411:5	2775:11
2566:16	2520:6	2448:10	2411:15	2775:24
monitoring	2520:19	2455:8, 2516:3	2748:1	multi-pollutant
2429:24	2540:4, 2561:1	2516:11	mountains	2634:1
2430:1, 2431:2	2597:22	2517:7	2506:12	multiple
2431:3	2597:23	2517:10	move 2350:6	2340:19
2431:12	2598:17	2519:11	2351:1, 2354:2	2391:12
2431:13	2599:6, 2600:5	2520:3	2354:2	2411:12
2431:14	2600:8	2520:11	2370:24	2444:17
2432:12	2600:18	2521:1, 2521:4	2385:7	2449:12
2434:15	2601:1	2522:7	2395:20	2542:10
2434:24	2601:16	2528:22	2397:20	2546:5, 2547:3
2435:2	2604:1, 2609:7	2610:23	2420:1, 2421:5	2605:3
2437:13	2609:10	2610:24	2426:8	2701:20
2437:14	2623:14	Morgan's 2516:5	2443:21	2703:7
2437:16	2672:17	2516:24	2447:24	2703:10

Volume 8
9/29/2021

EIB Ozone Hearing

2706:21 2706:22 2753:23 2753:23 2765:19 multiplied 2679:11 2683:16 2683:20 2683:25 2684:12 multiply 2567:6 2567:8 2670:12 2670:19 2697:15 Municipal 2351:18 mute 2464:24 2712:22 MZ:SP3-Q 2334:5	2500:10 2501:3 2504:11 2505:4 2508:11 2508:25 2516:10 2577:11 2578:8 2590:21 2619:14 2621:23 2635:6 2637:19 2645:11 2649:20 2650:4 2650:22 2654:12 2654:14 2657:6, 2661:7 2661:9 2742:18 2742:21 2742:24 2742:24 2744:5, 2744:6 2764:13 names 2511:5 narrative 2354:19 NASA's 2545:6 nation 2411:6 2494:2, 2494:8 2502:4, 2625:4 2625:12 2625:13 2625:15 2651:20 2658:4, 2659:6 nation-leading 2367:18 2373:4, 2493:7 national 2330:17 2331:2 2339:14 2371:23 2372:16 2386:19 2390:20 2391:3 2398:20 2399:3 2406:24 2406:25 2407:6 2407:10 2407:20 2407:21 2407:24	2408:16 2408:19 2408:21 2408:24 2409:2 2409:10 2409:13 2409:19 2409:19 2409:21 2410:15 2410:16 2410:19 2410:21 2411:2, 2411:5 2411:15 2412:12 2413:19 2415:1, 2415:4 2415:6 2415:21 2543:10 2543:11 2544:19 2718:19 2733:3 2733:12 2734:15 2736:7 2737:14 2751:21 2757:19 2758:4, 2769:7 2769:18 2769:24 2771:23 2771:23 2772:5, 2772:6 2772:9 2772:22 nationally 2553:23 2555:21 2753:20 native 2505:8 2596:21 2624:13 2624:17 2624:21 2625:24 2626:6 2626:14 2626:17 2627:24 2628:3 2628:10 2628:19 2749:22 2752:10 2754:4 2762:23	natural 2329:12 2330:12 2333:2, 2333:3 2339:4, 2339:5 2339:7 2339:14 2339:20 2340:4, 2340:4 2340:10 2346:4 2346:18 2428:22 2441:25 2455:2 2491:10 2497:20 2507:7, 2543:9 2549:24 2554:16 2554:21 2554:23 2556:4, 2556:4 2556:7 2592:15 2689:13 2776:15 naturally 2631:5 nature 2388:23 2457:14 NAVA 2330:7 2341:5, 2341:6 2341:7, 2343:1 2351:1, 2351:6 2527:19 2528:5, 2539:9 2539:18 2624:8, 2715:3 2743:20 2744:10 2744:15 2748:20 2748:22 2748:25 2749:3 2750:20 2752:17 2763:5 Nava's 2375:4 2526:22 Navajo 2625:4 2625:12 2625:13 2625:15 2632:1, 2632:9 2651:20 navigate 2384:4 2421:19 navigating 2353:21 near 2415:9	2539:6 2601:19 2708:25 2720:16 2722:12 2722:19 2723:15 2728:19 2728:20 2750:8, 2775:2 nearby 2559:14 nearly 2554:24 2605:7 2605:12 2691:16 2700:13 2746:22 necessarily 2379:15 2400:6, 2425:9 2452:1, 2480:9 2484:7 2502:23 2532:10 2698:4, 2700:5 2731:10 necessary 2360:17 2440:12 2510:4, 2541:2 2585:24 2607:13 2657:24 2690:25 2767:18 2778:1 2779:18 necessitating 2481:19 necessity 2748:16 need 2343:7 2350:7, 2351:8 2365:11 2377:17 2377:17 2383:19 2387:12 2389:15 2389:16 2390:22 2391:23 2392:19 2393:1, 2397:4 2398:1 2398:14 2404:3, 2410:2 2417:10 2421:6, 2426:2 2433:18 2437:24
N				
NAAQS 2620:21 2621:1, 2719:8 2730:17 2730:24 2731:6 2731:18 2733:15 2737:4 2737:14 2768:20 2769:21 2770:4, 2770:8 2770:12 2771:14 2771:15 2772:18 2779:24 name 2365:16 2366:17 2370:13 2371:4 2371:22 2374:8 2376:19 2390:13 2399:20 2488:6 2489:12 2490:10 2492:9 2492:11 2492:25 2495:22 2495:24 2496:12 2496:13 2497:2, 2500:7				

Volume 8
9/29/2021

EIB Ozone Hearing

2440:2	2501:13	2376:8	2509:5, 2509:8	2658:2
2469:11	neglect 2414:23	2376:11	2509:14	2658:19
2471:2, 2471:3	negligible	2376:24	2510:1, 2510:4	2658:20
2480:15	2554:7	2384:10	2510:7, 2510:8	2659:11
2497:14	negotiate	2384:24	2517:19	2662:16
2502:24	2433:12	2393:16	2528:8	2662:20
2503:12	negotiating	2393:22	2529:16	2662:23
2510:14	2376:14	2394:13	2540:7	2664:4
2523:2	neighbor	2395:1, 2395:4	2540:19	2667:14
2534:10	2652:14	2395:11	2541:7, 2542:7	2668:7
2534:14	neighborhoods	2395:15	2543:21	2668:22
2535:25	2754:1	2396:11	2544:14	2669:22
2536:3	neither 2783:10	2398:3, 2400:4	2546:1, 2551:4	2675:25
2537:21	NEUMANN 2333:11	2400:23	2551:8	2676:1, 2676:4
2546:11	neumannc@gtl...	2403:19	2551:19	2676:6
2559:4, 2561:2	2333:15	2404:5	2552:3, 2552:9	2678:14
2576:6	neurotoxic	2404:14	2556:16	2678:22
2576:22	2728:4	2407:15	2559:2, 2560:6	2684:6, 2685:9
2576:25	never 2345:23	2408:13	2561:5	2686:25
2610:1, 2613:2	new 2327:1	2433:3	2564:22	2687:5
2615:12	2327:4	2438:10	2568:9	2687:10
2636:4, 2641:4	2327:21	2449:19	2568:11	2698:4
2649:5	2327:23	2449:25	2568:13	2699:10
2655:25	2328:12	2449:25	2577:12	2699:12
2656:4, 2656:5	2328:15	2450:5, 2450:8	2577:20	2699:14
2656:6	2328:17	2450:10	2589:23	2699:14
2656:14	2328:18	2456:10	2593:15	2705:19
2657:5	2328:22	2471:13	2593:25	2718:16
2658:25	2328:23	2471:14	2596:2, 2596:6	2718:17
2659:9	2329:2, 2329:9	2473:2, 2473:5	2596:10	2718:18
2659:10	2329:12	2485:2	2599:25	2720:10
2659:24	2329:13	2485:21	2604:4	2720:14
2660:16	2329:17	2490:16	2604:23	2721:12
2664:3	2329:20	2490:17	2611:10	2721:13
2705:20	2330:12	2491:17	2611:14	2732:4, 2733:1
2711:10	2330:13	2491:25	2611:21	2734:3
2714:18	2331:14	2493:9	2622:15	2734:20
2714:19	2331:17	2493:15	2622:19	2736:2, 2736:6
2716:14	2331:19	2494:1, 2494:6	2622:20	2745:14
2728:17	2331:20	2494:7, 2497:4	2622:23	2745:15
needed 2350:4	2332:2, 2332:6	2497:18	2624:7	2746:1, 2746:6
2405:22	2332:23	2497:21	2624:11	2746:14
2515:2	2333:19	2498:1, 2499:7	2624:18	2747:15
needing 2353:9	2338:15	2499:23	2624:23	2747:16
2440:20	2340:5	2501:5, 2501:6	2625:17	2749:15
2480:10	2340:12	2501:8	2630:15	2750:22
needs 2353:12	2341:3	2501:12	2633:22	2751:10
2373:2	2345:11	2501:17	2634:8, 2644:5	2751:17
2397:16	2346:12	2501:19	2644:12	2751:24
2410:1	2348:23	2502:14	2645:3	2753:2
2484:13	2354:20	2503:11	2645:19	2754:21
2503:3	2367:13	2503:12	2647:4	2754:24
2563:19	2367:20	2503:17	2650:23	2755:6, 2755:7
2731:25	2368:18	2503:18	2651:3, 2651:4	2756:18
negative	2368:22	2505:5, 2505:7	2653:12	2757:13
2347:18	2369:1, 2369:6	2505:8, 2505:9	2655:14	2759:15
2621:6, 2642:8	2370:3, 2370:9	2505:10	2655:14	2759:16
2722:4, 2729:2	2371:22	2505:15	2656:1	2759:20
2731:13	2372:14	2506:13	2656:13	2760:22
negatively	2372:22	2507:17	2657:1	2762:7
2493:12	2373:17	2508:2, 2509:2	2657:19	2764:14

Volume 8
9/29/2021

EIB Ozone Hearing

2764:25	2477:22	2777:10	2395:14	2678:13
2767:21	2477:23	2777:20	2415:22	2679:6
2769:5	2481:3, 2487:2	2778:10	2418:12	2680:20
2776:24	2494:10	2778:12	2418:18	2681:12
2776:25	2513:23	NMED's 2338:7	2421:2, 2423:8	2681:24
2777:4, 2783:1	2513:24	2354:6, 2359:2	2447:23	2681:25
newer 2430:11	2514:7	2445:14	2450:12	2682:3, 2682:8
2449:24	2517:12	2539:23	2452:14	2682:14
2450:7	2518:18	2551:2, 2552:6	2454:22	2682:21
2450:10	2540:11	2552:17	2457:23	2682:22
2450:13	2547:1, 2549:4	2552:20	2462:2, 2462:2	2683:1, 2683:7
2450:13	2550:21	2552:23	2462:6, 2462:9	2683:9
2450:15	2593:10	2594:7	2462:23	2683:11
2676:6	2593:21	2594:14	2465:23	2683:16
newest 2343:5	2594:6, 2595:4	2594:21	2466:6	2683:19
newly 2403:10	2598:13	2598:3, 2598:6	2466:14	2683:24
news 2372:16	2601:2, 2601:4	2601:23	2470:13	2684:20
NGL 2333:9	2601:8	2601:25	2478:5	2685:1, 2688:4
2333:17	2601:11	2603:15	2481:11	2688:17
NGO 2432:21	2602:6	2603:19	2482:14	2689:10
NGOs 2528:24	2603:14	2604:7	2484:11	2690:16
2775:1	2603:19	2605:18	2485:25	2697:23
nice 2630:10	2604:3, 2604:6	2606:1, 2606:7	2486:1, 2486:3	2708:12
Nicholson	2608:5	2606:23	2520:3, 2552:3	2712:17
2479:16	2608:13	2608:12	2552:7	2713:4
night 2361:9	2609:3	2609:5, 2610:6	2552:16	2715:10
2774:4, 2774:5	2614:16	2610:9, 2611:5	2574:22	2715:13
2781:18	2614:17	2616:22	2594:6	2715:17
2782:22	2639:12	2642:2	2607:25	2744:24
nine 2342:14	2640:5	2644:21	2608:4, 2609:2	2748:15
2364:20	2640:13	2744:23	2613:23	2748:17
2544:18	2641:12	2748:7	2613:25	2762:19
2546:2	2641:21	2748:22	2614:2	2776:23
2571:15	2641:22	2749:1	2614:23	2777:14
2572:4	2648:18	2750:19	2615:5, 2615:5	NMOGA's 2342:25
2572:11	2653:13	NMOCD 2611:19	2615:8	2343:4, 2347:3
2574:3, 2693:7	2666:1, 2666:3	NMOGA 2341:4	2615:11	2348:24
nitrogen	2667:10	2344:10	2625:23	2351:1, 2351:9
2411:16	2675:23	2347:17	2638:13	2352:24
2411:17	2678:1	2348:7, 2352:6	2639:11	2354:7, 2356:7
2641:4	2678:13	2352:14	2639:11	2358:22
2768:15	2681:17	2354:18	2640:24	2362:25
NM 2333:21	2681:22	2354:23	2644:2	2375:6, 2378:9
2470:13	2682:1	2355:4	2644:10	2381:23
2608:20	2682:24	2355:11	2645:2	2381:24
NMAC 2327:4	2684:20	2357:9	2645:18	2382:17
2338:8	2684:24	2358:14	2646:21	2386:5, 2419:8
NMED 2347:4	2685:1	2359:3, 2359:3	2646:23	2474:5
2357:5	2688:21	2363:2	2648:16	2482:22
2360:24	2689:23	2363:11	2648:19	2486:2
2364:6	2690:13	2363:16	2667:12	2540:10
2369:13	2690:17	2365:7	2667:12	2553:3
2370:3	2697:23	2375:18	2667:20	2560:25
2392:24	2709:8, 2748:3	2376:18	2667:24	2573:3, 2573:5
2417:8, 2428:9	2748:14	2380:4	2668:14	2594:12
2428:10	2748:19	2380:24	2668:16	2594:13
2448:5	2754:25	2381:2	2672:25	2594:17
2456:12	2757:16	2381:18	2676:16	2594:22
2464:12	2758:16	2381:18	2677:6, 2678:3	2606:6, 2606:9
2470:23	2758:20	2385:12	2678:8	2606:13
2474:2, 2477:3	2775:18	2388:22	2678:13	2606:16

Volume 8
9/29/2021

EIB Ozone Hearing

2608:6	2702:9	2730:9, 2734:1	2445:24	2670:2, 2670:7
2608:21	nonlinear	2734:10	2446:2	2671:2, 2671:9
2608:22	2736:16	2741:4	2446:10	2671:10
2609:9	nonlow-produ...	2745:11	2446:11	2671:12
2609:16	2603:10	2749:25	2446:13	2671:25
2609:19	nonproffered	2775:4	2449:19	2679:8
2609:23	2712:14	noted 2456:10	2517:23	2683:17
2614:10	nonprofit	2525:17	2603:7, 2640:9	2685:18
2614:21	2371:23	2527:15	2644:13	2685:25
2616:23	2763:4	2551:12	2690:15	2686:4
2648:20	nonrepresent...	2552:12	NSR 2734:24	2686:25
2666:2, 2668:9	2684:8	2598:8	nuance 2344:16	2690:24
2673:24	nontechnical	2599:12	number 2345:4	2696:25
2678:23	2565:5	2605:12	2345:5	2697:3
2679:15	nontribal	2627:16	2349:15	2697:14
2682:1	2625:8	2750:2	2355:13	2698:8, 2701:8
2682:18	nonzero 2565:24	notes 2395:19	2358:3, 2358:5	2701:10
2683:22	nope 2461:9	2395:23	2358:6	2701:14
2687:10	normal 2437:2	2721:23	2369:24	2704:18
2691:3, 2691:9	2665:12	2760:3	2370:14	2706:18
2692:7	normally	notice 2390:21	2370:15	2708:7
2692:15	2546:21	2401:19	2396:19	2723:10
2748:6	2696:21	2444:15	2428:20	2737:13
2748:13	north 2329:20	2558:19	2444:9	2745:3
2750:17	2393:22	2581:17	2444:13	2747:24
2775:24	2407:4, 2753:6	2713:13	2449:18	2750:12
NO2 2737:3	2753:14	2713:22	2452:14	2758:16
nodding 2375:16	Northeast	2714:1, 2733:9	2477:8, 2484:9	2760:8
2781:13	2327:22	2733:17	2486:7, 2486:7	2769:23
Nods 2412:14	2328:22	2748:13	2486:8, 2486:9	2781:8
2412:17	2330:13	2748:25	2486:10	2783:18
2467:9	2367:9	2749:11	2494:18	numbered 2715:1
Nolting 2336:8	northwest	2749:15	2528:18	numbers 2358:11
2514:24	2407:6	2768:2, 2768:3	2528:19	2359:10
2515:1, 2515:7	2408:25	2768:5	2529:20	2359:13
2515:15	2493:1	2768:10	2549:8	2359:16
2516:7	2699:12	2768:12	2554:23	2362:1, 2382:1
2516:10	2700:6	2768:13	2570:20	2396:23
2519:13	nosebleeds	2768:18	2579:6	2430:17
2519:20	2728:1	2768:21	2579:10	2430:23
2521:13	notably 2603:12	2768:23	2579:12	2463:10
2521:14	2607:3	2768:24	2602:9	2501:19
2521:16	NOTARY 2783:17	2779:14	2602:13	2522:8, 2522:8
2521:18	note 2338:3	noticed 2701:1	2605:6	2538:10
2522:2	2348:19	2748:15	2606:25	2569:25
2522:15	2352:5, 2352:9	2749:3	2607:2	2570:17
2523:6	2352:13	notify 2438:4	2613:24	2638:18
non-New 2645:6	2369:3	noting 2374:17	2614:6, 2615:7	2649:1
nonattainment	2392:15	notion 2631:3	2615:8, 2619:4	2667:15
2393:14	2394:11	NOx 2392:19	2645:13	2670:9, 2671:3
2393:17	2395:2	2397:1, 2397:3	2645:23	2671:13
2540:8, 2540:9	2417:14	2398:2	2645:25	2671:15
noncancer	2447:21	2409:25	2654:9, 2659:6	2672:20
2727:12	2453:2	2584:18	2659:6, 2668:3	2675:1, 2675:5
nongovernmental	2499:13	2641:7	2668:4, 2668:5	2676:15
2529:21	2600:2	2641:10	2668:17	2677:20
nonhealth-re...	2628:14	2648:12	2668:19	2677:22
2732:15	2636:5	NPS-Air 2330:19	2669:4	2679:25
nonhydrocarbon	2681:13	2331:4	2669:18	2680:1
2641:4, 2702:8	2684:6	NSPS 2445:7	2669:19	2680:10
nonhydrocarbons	2713:10	2445:17	2669:20	2680:11

Volume 8
9/29/2021

EIB Ozone Hearing

2680:12 2680:14 2680:18 2681:8 2686:22 2686:23 2686:24 2686:24 2687:24 2690:7 2692:11 2695:8, 2705:7 2707:1, 2707:5 numerous 2358:12 2471:9, 2471:9 NYKIEL 2331:9 NYU 2761:13	2347:3, 2347:4 2349:4, 2349:5 2349:14 2349:17 2355:14 2423:6 2423:10 2423:16 2424:1, 2424:2 2424:25 2425:20 2425:21 2448:11 2448:13 2460:14 2478:7, 2485:7 2538:20 2538:24 2561:25 2614:8 2614:10 2729:14 2733:6 2733:18 2781:9 2781:23 2781:24 objectionable 2485:1 objections 2344:10 2347:10 2348:8 2348:21 2423:2 2423:24 2424:6 2486:21 2517:15 2712:20 2712:23 2781:6 objective 2453:13 objectives 2758:7 obligated 2640:6 obligation 2368:5 2401:17 2527:17 2678:10 obligations 2519:9 2759:16 observation 2482:11 2566:24 observations 2750:9	2750:11 observed 2555:2 2571:7, 2589:1 2596:10 2596:12 2750:17 2755:10 obstructive 2597:3 obtain 2605:19 obtained 2554:13 obtaining 2685:12 2685:25 obvious 2382:20 2457:1, 2457:8 2735:4 obviously 2345:13 2349:13 2379:3, 2421:3 2421:6 2467:21 2509:13 2512:22 2530:25 2532:24 2575:14 2712:13 2730:5 OCC 2343:23 2343:25 2559:19 2562:25 2563:17 occasionally 2559:9 2657:24 occupational 2754:5 occupied 2362:10 2524:5, 2525:7 2527:18 2527:21 2528:3, 2539:6 2539:20 2539:25 2577:18 2595:15 2600:15 2600:25 2601:19 2623:20 2626:5 2690:22 2708:25 2709:7 2719:16 2720:16	2730:22 2749:5 2749:10 2763:7, 2775:2 occur 2428:24 2429:6 2452:21 2472:24 2548:9 2548:23 2548:24 occurred 2631:8 occurring 2574:13 2589:2 occurs 2395:5 2437:3 OCD 2452:10 2456:11 2561:13 2563:16 2611:14 2641:21 2641:25 2705:1, 2776:9 OCD's 2641:13 2709:1, 2776:6 Oct 2340:10 odd 2343:11 offer 2344:1 2355:5 2364:22 2365:6, 2365:8 2374:4 2375:20 2380:12 2380:13 2380:14 2384:12 2385:22 2388:15 2389:24 2480:25 2488:13 2521:8 2521:14 2576:16 2617:9 2708:22 2708:24 2730:1 offered 2345:21 2379:14 2383:20 2398:24 2481:5 2481:12 2484:3 2563:18 2564:3, 2564:3 2564:5	2639:11 2692:9, 2745:2 2778:15 offering 2363:15 2365:8 2379:13 2380:4 2744:22 offhand 2732:18 office 2328:11 2328:12 2328:17 2328:21 2330:20 2331:5, 2332:5 2332:23 2399:8 2410:21 2662:18 2717:23 officer 2327:14 2328:2, 2342:1 2342:16 2342:18 2342:21 2343:14 2344:9 2344:14 2344:17 2344:20 2345:3 2345:11 2345:16 2345:19 2346:25 2347:8 2347:14 2348:6 2348:13 2348:15 2348:25 2349:1 2349:11 2349:24 2350:8 2350:22 2350:24 2351:12 2352:10 2352:12 2352:21 2353:18 2354:3, 2354:5 2355:10 2356:18 2357:13 2357:15 2358:24 2359:1, 2360:6 2360:10
0				
O&G 2339:22 o'clock 2342:14 2364:20 2636:5 2649:15 Oa 2445:7 2445:24 2446:2 2446:11 2448:7 2448:19 2448:24 2449:4 2449:10 2449:15 2472:6, 2472:8 2472:16 2517:24 2533:7 2533:18 2533:19 2535:3, 2619:6 2640:9 2640:17 2644:13 2675:25 2676:2 oath 2366:4 2387:4 2488:24 2537:24 2649:22 object 2560:17 2781:7 objected 2347:22 objection 2342:24 2344:11 2344:16				

Volume 8
9/29/2021

EIB Ozone Hearing

2362:4, 2362:7	2398:13	2446:23	2508:22	2577:4
2363:5, 2363:8	2399:14	2447:13	2510:22	2577:25
2363:22	2399:17	2447:14	2512:2, 2512:5	2578:4
2363:25	2400:17	2447:17	2512:10	2581:20
2364:3	2402:6	2447:23	2512:14	2582:5, 2582:8
2364:19	2402:11	2460:19	2512:20	2583:2, 2583:4
2365:1	2404:10	2460:23	2512:23	2587:25
2365:17	2404:11	2474:18	2513:4, 2513:5	2588:4, 2588:8
2366:15	2405:1	2474:21	2513:8	2588:11
2366:20	2405:25	2475:7	2513:12	2590:12
2366:24	2406:5, 2406:6	2478:13	2513:15	2590:15
2367:5	2406:8	2478:15	2513:17	2590:19
2370:10	2406:18	2479:2, 2479:7	2514:9	2590:25
2370:20	2406:21	2479:12	2514:21	2591:4
2370:23	2410:9	2479:21	2514:22	2591:11
2371:3, 2371:7	2412:23	2479:24	2515:4, 2515:9	2591:14
2371:11	2413:10	2480:2, 2480:5	2515:13	2595:6
2371:16	2414:12	2480:6	2515:21	2595:10
2373:20	2414:16	2480:14	2517:2	2610:19
2375:8	2415:13	2480:20	2521:16	2613:7
2375:11	2415:18	2482:6	2522:4	2613:12
2376:2, 2377:8	2416:3, 2416:5	2482:10	2522:11	2613:13
2377:12	2416:9	2482:12	2522:17	2615:1, 2620:9
2377:23	2416:21	2482:16	2522:20	2621:14
2378:9	2417:2	2483:5, 2483:8	2522:22	2621:17
2378:15	2417:13	2483:9	2522:25	2623:25
2378:25	2417:18	2483:14	2523:5, 2523:7	2624:2
2379:2, 2379:9	2417:20	2484:2	2523:11	2626:23
2379:10	2417:24	2484:21	2523:12	2626:25
2380:1, 2380:3	2418:5, 2418:6	2486:14	2523:17	2627:9
2380:15	2418:17	2487:8	2523:21	2627:11
2380:21	2420:6, 2420:7	2487:17	2523:23	2629:19
2380:23	2420:25	2487:19	2528:13	2630:2
2381:15	2421:1	2487:25	2529:2, 2529:8	2631:22
2382:5	2421:10	2488:3, 2488:7	2531:13	2632:12
2382:14	2421:11	2489:10	2531:23	2632:15
2382:22	2421:13	2489:15	2532:2, 2536:9	2632:19
2382:24	2421:22	2489:19	2536:12	2632:21
2383:11	2422:6	2490:5, 2492:2	2536:15	2634:20
2383:12	2422:14	2492:8	2536:17	2634:21
2383:18	2423:12	2492:13	2536:21	2634:24
2384:1, 2384:3	2423:21	2492:17	2536:22	2634:25
2384:15	2424:5	2492:22	2537:3	2635:3, 2635:4
2384:21	2424:10	2495:18	2537:21	2635:17
2385:6	2425:14	2496:10	2537:23	2635:20
2385:15	2425:17	2496:15	2538:9	2635:24
2385:24	2425:19	2496:19	2538:23	2636:2, 2636:3
2386:1	2425:24	2496:24	2539:12	2636:8
2386:15	2426:5	2500:3, 2500:9	2558:25	2636:11
2387:1, 2387:3	2426:12	2500:13	2560:15	2636:14
2387:10	2427:3	2500:17	2560:21	2637:1, 2637:4
2387:14	2427:12	2500:22	2561:10	2637:5
2387:24	2427:18	2504:1	2561:22	2637:10
2388:2, 2388:5	2441:11	2504:10	2562:6	2639:9
2388:8	2441:17	2504:14	2563:11	2642:19
2388:11	2442:23	2504:18	2564:6	2642:23
2389:6	2443:6, 2444:5	2504:23	2564:11	2643:7
2389:19	2444:8	2508:4	2564:13	2643:13
2390:7	2444:12	2508:10	2576:4	2643:18
2390:10	2444:22	2508:13	2576:13	2649:2
2398:8	2446:20	2508:17	2576:22	2649:10

Volume 8
9/29/2021

EIB Ozone Hearing

2650:2, 2650:9	2715:15	2781:15	2496:6	2497:13
2650:13	2715:20	2781:16	2508:10	2497:13
2650:18	2715:25	2782:6	2523:13	2497:19
2653:21	2716:1, 2716:9	2782:14	2563:1	2497:23
2654:6	2716:18	2783:6	2566:15	2498:9
2654:10	2716:21	Officer's	2631:13	2498:15
2654:15	2717:2, 2729:7	2352:6, 2419:6	2638:10	2503:5, 2503:9
2654:19	2729:12	2420:11	2654:6	2503:11
2654:24	2730:4, 2733:9	2424:23	2657:20	2505:11
2656:18	2733:23	officers	2671:19	2505:17
2656:23	2734:6, 2735:8	2505:21	2710:4	2505:20
2657:2, 2657:5	2735:12	2506:17	2714:10	2506:4, 2506:8
2657:9	2735:15	offices 2746:16	2716:20	2506:15
2657:13	2737:23	official	2727:14	2506:17
2660:19	2738:9	2398:25	2732:19	2506:25
2661:6	2738:11	2399:12	2736:1	2507:7, 2507:9
2661:12	2740:13	2413:4	2741:23	2507:14
2661:15	2740:15	2495:13	2764:1, 2781:3	2529:17
2661:19	2740:24	2551:20	Ohio 2554:1	2540:16
2661:24	2741:3, 2741:8	2575:4, 2575:6	oil 2327:4	2541:6
2664:9	2741:12	2586:20	2329:2, 2338:8	2543:19
2664:17	2741:17	2586:24	2338:10	2549:20
2668:13	2741:20	2587:6	2338:18	2553:10
2669:1	2741:23	oftentimes	2338:18	2553:20
2669:24	2742:2, 2742:3	2411:12	2339:7, 2340:4	2553:22
2670:1, 2679:3	2742:10	2411:19	2340:4, 2340:9	2553:23
2679:17	2742:16	2412:1	2341:3	2554:4, 2559:2
2690:21	2742:18	OGI 2430:1	2346:13	2560:5, 2560:6
2692:20	2742:23	2430:21	2367:18	2561:5, 2572:3
2692:23	2743:1, 2743:5	2431:25	2368:17	2573:23
2693:5, 2693:6	2743:12	2435:24	2368:25	2574:8, 2575:3
2693:10	2743:14	2436:21	2369:7	2575:4
2693:19	2743:18	2456:16	2369:11	2592:15
2693:22	2743:22	2473:20	2369:22	2596:11
2695:16	2745:18	2546:25	2370:1, 2370:2	2611:20
2696:4, 2696:7	2745:22	2561:14	2372:21	2611:23
2702:3	2751:2, 2751:4	2574:23	2373:9	2612:2, 2612:7
2703:18	2763:17	2575:17	2373:12	2621:5
2703:20	2763:20	2575:24	2400:24	2622:16
2706:1	2763:25	2585:18	2408:18	2623:8
2707:24	2764:6, 2766:8	2602:18	2409:1, 2409:4	2626:15
2708:3	2770:14	2602:19	2410:3, 2415:6	2652:11
2709:15	2770:16	2602:19	2431:20	2653:6
2709:19	2771:3, 2771:6	2602:25	2465:24	2653:11
2710:4	2773:6	2603:1, 2603:1	2468:10	2653:12
2710:11	2773:12	2605:5, 2606:2	2490:12	2655:15
2710:18	2773:16	2619:24	2490:13	2655:20
2710:23	2773:25	2672:19	2490:14	2658:11
2711:2, 2711:7	2774:3, 2774:5	oh 2347:8	2490:15	2659:13
2711:16	2774:14	2362:5, 2363:7	2490:19	2659:15
2711:25	2774:16	2363:24	2490:24	2659:19
2712:1	2778:24	2366:15	2491:5, 2491:6	2659:24
2712:10	2779:4	2375:11	2491:7	2662:10
2712:11	2779:25	2388:2	2491:16	2668:8
2712:20	2780:1	2389:10	2493:7	2669:13
2713:3, 2713:5	2780:11	2402:8, 2406:5	2493:12	2671:6
2713:7	2780:15	2408:9	2493:16	2671:12
2713:24	2780:20	2442:23	2493:21	2671:20
2714:15	2780:23	2443:9, 2444:4	2494:20	2671:21
2715:12	2781:4	2444:12	2494:24	2671:23
2715:14	2781:11	2481:21	2495:4, 2497:6	2671:24

Volume 8
9/29/2021

EIB Ozone Hearing

2672:1, 2674:1	2405:21	2530:15	2701:23	2692:1, 2703:5
2674:19	2406:8	2531:8	2702:24	2703:6
2674:21	2408:12	2534:23	2706:20	2704:18
2676:9	2409:9, 2410:5	2537:25	2707:10	one-acre
2691:15	2410:7	2541:13	2707:21	2725:20
2691:15	2412:11	2562:4, 2562:7	2713:2	2726:2
2692:2	2412:18	2565:12	2714:14	one-hour
2699:14	2412:22	2566:10	2715:12	2727:19
2699:19	2413:9	2566:22	2716:24	2727:23
2708:9	2413:10	2567:18	2718:1	one-pager
2718:11	2416:5, 2416:9	2568:11	2732:13	2528:25
2718:15	2420:3	2572:7	2735:16	one-time 2453:5
2721:7, 2721:9	2421:10	2572:19	2737:6	2453:7
2722:12	2423:12	2576:1, 2577:5	2737:21	2525:23
2722:16	2426:12	2577:23	2739:16	2526:3
2728:18	2442:22	2582:24	2740:12	ones 2393:4
2728:20	2442:25	2584:16	2741:12	2393:7, 2487:6
2728:23	2443:16	2585:3	2741:23	2622:24
2730:23	2443:20	2585:20	2741:24	2640:3, 2669:4
2745:6	2443:25	2587:3	2744:4	2772:8
2748:17	2444:3	2587:21	2751:12	ongoing 2409:12
2750:4, 2750:8	2444:24	2610:19	2764:7, 2764:9	2542:11
2750:14	2444:25	2615:13	2765:5, 2773:2	online 2338:3
2763:10	2445:13	2615:23	2774:24	2362:23
2768:15	2445:21	2616:16	2781:11	2405:14
2776:1, 2776:6	2446:16	2617:21	2782:17	0000a 2340:6
2776:12	2449:23	2618:12	old 2396:9	2340:13
2776:16	2450:20	2618:14	2645:6, 2753:8	2340:14
2776:20	2452:8	2619:7	older 2449:19	Oops 2666:17
2778:16	2454:20	2619:12	2450:5, 2450:9	2780:1
oil-producing	2455:6, 2456:9	2619:19	2596:20	open 2427:11
2338:13	2457:10	2621:12	2647:4	2524:24
2776:15	2457:19	2628:7, 2628:7	2660:11	2644:1
okay 2345:3	2459:7	2628:16	2671:23	2710:15
2348:25	2459:14	2628:23	2671:23	2763:19
2349:11	2461:5	2629:14	2676:3, 2676:9	open-ended
2358:24	2461:18	2631:7	2704:4	2429:1, 2429:9
2362:14	2462:14	2632:11	2704:11	opening 2672:9
2363:10	2463:15	2633:9	2749:20	2687:23
2365:12	2464:16	2634:10	olfactory	operate 2499:3
2366:18	2465:9	2634:16	2429:22	2612:13
2370:23	2465:19	2635:13	2705:7	2612:13
2374:3	2466:5	2635:17	OLSON 2332:3	operating
2375:15	2466:12	2636:7	Omara 2339:13	2333:9
2375:16	2467:13	2636:16	2554:10	2333:21
2378:13	2468:2, 2470:4	2638:20	2555:9	2581:2, 2613:3
2379:10	2473:16	2643:9	omitted 2677:15	2705:11
2382:14	2475:23	2643:15	once 2449:4	2768:24
2387:17	2476:19	2654:3	2460:10	operation
2388:2	2476:24	2654:10	2471:1, 2472:1	2437:2
2388:11	2477:15	2656:25	2477:13	2473:13
2390:5	2483:5	2657:4	2494:10	operational
2390:16	2484:21	2665:16	2495:16	2589:19
2392:1, 2394:2	2485:11	2666:14	2530:19	operations
2399:8	2485:23	2667:2, 2669:2	2604:1	2372:23
2400:10	2486:14	2669:24	2645:21	2455:3
2401:22	2489:9, 2490:7	2677:4	2669:17	2458:13
2402:6	2497:1, 2512:2	2687:21	2674:9	2473:15
2403:14	2512:9, 2513:6	2694:9, 2697:8	2679:20	2495:4, 2497:4
2404:2, 2404:6	2515:25	2697:22	2681:12	2507:19
2404:16	2530:10	2699:16	2687:1, 2687:5	2528:8, 2541:6

Volume 8
9/29/2021

EIB Ozone Hearing

2580:17	2586:9, 2587:9	2375:22	2336:10	2495:7
2645:19	2587:12	2376:25	2336:13	2594:25
2655:20	2597:21	2377:24	2336:17	2595:16
2662:10	2599:17	2385:13	2337:4	2625:25
2678:16	2600:14	2481:16	2337:16	2651:6, 2718:8
2718:16	2600:18	2481:18	2337:20	2747:2
2722:17	2600:20	2482:23	2337:24	2768:15
2777:1	2601:18	2490:8, 2493:4	2350:16	Organization
operator	2604:8	2495:17	2362:20	2721:19
2401:18	2604:14	2502:16	2365:22	2721:20
2435:11	2604:18	2503:7	2392:12	organizations
2435:22	2605:19	2507:25	2413:19	2371:24
2436:4	2607:6	2508:24	2420:11	2529:21
2437:13	2607:10	2517:4	2427:10	2763:4
2437:25	2607:16	2639:25	2428:2	organizing
2438:22	2611:25	2704:9	2434:18	2651:2, 2765:9
2449:7	2612:5, 2640:6	2741:15	2458:19	2767:4
2458:18	2653:5	2752:19	2468:18	origin 2751:21
2530:25	2678:15	2782:10	2472:19	2757:19
2532:17	2703:11	oppose 2348:4	2484:14	2758:5
2559:12	2705:17	opposed 2344:23	2488:19	original
2589:20	2776:24	2379:22	2493:8	2433:16
2607:21	2777:3	2561:20	2515:16	2451:11
2611:24	opine 2713:11	2566:13	2517:21	2454:6, 2454:8
2612:15	opinion 2350:10	2625:3	2524:13	2518:18
2618:1	2396:20	2730:16	2533:25	2680:13
operators	2481:5	opposing	2537:11	2680:15
2346:18	2526:14	2432:25	2567:4, 2591:6	originally
2369:21	2540:10	2471:7	2611:15	2397:24
2373:8, 2397:5	2550:25	2475:21	2611:17	2520:4
2397:8	2562:24	2476:3	2616:21	Orozco 2417:11
2429:19	2563:2	2476:16	2631:4	2417:14
2437:6, 2437:9	2603:13	2755:1	2633:20	Ortega 2488:20
2439:11	2606:12	opposite 2378:5	2637:13	2496:2, 2496:3
2439:19	2612:4	2552:16	2662:17	Orth 2327:14
2440:17	2612:10	opposition	2665:2, 2717:7	2328:3, 2342:1
2450:22	2612:12	2659:13	2743:7, 2759:8	2342:16
2458:11	2625:23	optical 2430:1	2759:13	2342:18
2459:12	2626:14	2430:11	2759:14	2342:21
2468:16	2728:15	2430:16	2759:20	2343:14
2494:19	2731:19	2435:24	2760:11	2344:6, 2344:9
2497:13	2754:7, 2755:6	2541:2	2760:22	2344:14
2503:3	2764:21	2542:23	2760:24	2345:3
2517:17	2768:9	2546:20	2760:25	2345:16
2518:3	2768:22	2583:23	2774:19	2346:25
2526:15	2768:23	Optimally	2777:4	2347:6, 2347:8
2528:3	2769:6	2641:23	orders 2335:8	2348:6
2528:10	2769:16	optimize	2387:6	2348:15
2532:12	opinions 2539:4	2705:20	2476:13	2348:25
2532:14	2594:4	option 2389:25	2685:11	2349:11
2533:4, 2533:5	2715:11	2437:19	2759:4	2349:24
2539:10	2718:3	2517:22	2759:18	2350:24
2539:19	opportunities	2526:21	2760:15	2352:10
2539:24	2374:4	2570:24	2760:17	2352:21
2549:4, 2552:7	2411:20	options 2339:4	2760:20	2353:18
2557:22	2452:2	2429:14	2761:1, 2761:4	2354:5
2569:20	2506:18	2517:18	2761:8, 2761:9	2356:18
2570:24	2759:25	oral 2379:24	ordinarily	2357:13
2571:1, 2574:8	opportunity	orbit 2351:13	2511:22	2358:24
2578:17	2350:15	order 2335:13	Oregon 2746:3	2360:6, 2362:4
2581:17	2357:12	2336:8	organic 2430:8	2363:8

Volume 8
9/29/2021

EIB Ozone Hearing

2363:22	2416:5, 2416:9	2500:13	2587:25	2664:17
2364:3	2416:21	2500:17	2588:4, 2588:8	2669:1
2364:19	2417:2	2500:22	2588:11	2669:24
2365:17	2417:13	2504:1, 2504:8	2590:12	2679:17
2366:15	2417:20	2504:10	2590:15	2692:20
2366:20	2417:24	2504:14	2590:19	2692:23
2366:24	2420:25	2504:18	2590:25	2693:6
2367:5	2421:10	2504:23	2591:4	2693:10
2370:10	2421:13	2508:4	2591:11	2693:19
2370:20	2421:22	2508:10	2595:6	2693:22
2370:23	2422:6	2508:13	2595:10	2695:16
2371:3, 2371:7	2422:14	2508:17	2610:19	2696:4, 2696:7
2371:11	2423:12	2508:22	2613:7	2702:3
2371:16	2425:14	2510:22	2613:13	2703:20
2373:20	2425:17	2512:2, 2512:5	2615:1, 2620:9	2706:1
2375:11	2425:24	2512:10	2621:14	2707:24
2377:12	2426:5	2512:20	2623:25	2709:19
2378:9	2426:12	2513:4, 2513:8	2626:25	2710:4
2378:15	2427:12	2513:12	2627:9	2710:11
2379:2	2441:11	2513:17	2629:19	2710:23
2379:10	2443:6, 2444:5	2514:9	2630:2	2711:2
2380:1	2444:8	2514:22	2631:22	2711:16
2380:15	2444:12	2515:4, 2515:9	2632:12	2711:25
2381:15	2444:22	2515:13	2632:15	2712:10
2382:14	2446:20	2521:16	2632:19	2712:20
2382:22	2447:14	2522:11	2634:21	2713:5
2383:12	2460:19	2522:17	2634:25	2713:24
2383:18	2460:23	2522:20	2635:4	2714:15
2384:3	2474:21	2522:22	2635:17	2715:12
2384:21	2475:7	2522:25	2635:20	2715:15
2385:15	2478:15	2523:5, 2523:7	2635:24	2715:20
2385:24	2479:7	2523:12	2636:3, 2636:8	2715:25
2386:15	2479:12	2523:17	2636:14	2716:9
2387:1, 2387:3	2479:21	2523:21	2637:1, 2637:5	2716:18
2387:10	2479:24	2528:13	2637:10	2716:21
2387:14	2480:2, 2480:6	2529:2, 2529:8	2642:23	2717:2, 2729:7
2387:24	2480:20	2531:13	2643:7	2733:23
2388:2, 2388:5	2482:10	2531:23	2643:18	2734:6
2388:8	2482:16	2532:2, 2536:9	2649:2, 2649:8	2735:12
2388:11	2483:5, 2483:8	2536:12	2649:10	2737:23
2389:6	2483:14	2536:15	2650:2, 2650:9	2738:9
2389:19	2484:2, 2484:6	2536:17	2650:13	2740:15
2390:7	2484:21	2536:22	2650:18	2740:24
2390:10	2486:14	2537:23	2653:21	2741:8
2398:8	2487:17	2538:9	2654:6	2741:12
2399:14	2487:19	2538:23	2654:10	2741:17
2400:17	2488:3, 2488:6	2539:12	2654:15	2741:23
2402:6	2489:10	2558:25	2654:19	2742:3
2402:11	2489:15	2560:15	2654:24	2742:10
2404:11	2489:19	2560:21	2656:18	2742:16
2405:1	2490:5, 2492:2	2561:10	2656:23	2742:18
2405:25	2492:8	2561:22	2657:2, 2657:5	2743:1, 2743:5
2406:5, 2406:8	2492:13	2563:11	2657:9	2743:12
2406:18	2492:17	2564:6	2657:13	2743:18
2410:9	2492:22	2564:11	2660:19	2743:22
2412:23	2495:18	2576:4	2661:6	2745:18
2413:10	2496:10	2576:13	2661:12	2751:4
2414:12	2496:15	2576:22	2661:15	2763:20
2414:16	2496:19	2577:25	2661:19	2763:25
2415:13	2496:24	2581:20	2661:24	2766:8
2415:18	2500:3, 2500:9	2582:5, 2583:4	2664:9	2770:16

Volume 8
9/29/2021

EIB Ozone Hearing

				P
2771:3, 2773:6	2476:7, 2476:7	2358:18	2584:18	P-O-P-E 2492:12
2773:12	2604:10	2452:24	2584:22	p.m 2488:1
2773:16	2666:9, 2667:4	2524:7	2584:23	2488:2
2773:25	2675:2	2524:22	2584:25	2488:10
2774:5	2678:18	2525:1, 2525:2	2594:2, 2595:2	2576:11
2774:14	overestimating	2525:5	2620:21	2576:12
2774:16	2603:14	2525:13	2621:1	2636:24
2778:24	2726:7	2525:17	2622:16	2636:25
2780:1	overhaul	2526:7	2641:7	2693:8, 2693:9
2780:15	2351:16	2526:11	2648:10	2716:16
2780:20	overlap 2519:3	2526:14	2648:11	2742:14
2780:23	overly 2642:7	2526:23	2648:12	2742:15
2781:11	overnight	2526:25	2662:8	2782:23
2781:16	2377:3	2527:5	2662:20	PA 2329:8
2782:6	overpressurized	2527:16	2662:25	2332:4
2782:14	2580:22	2527:19	2663:20	2332:22
OTM 2565:2	overruled	2528:8	2664:5	Pacsi 2465:23
2565:20	2348:10	2528:18	2702:18	PACYNIAK
ought 2660:3	2425:1	2528:19	2718:9	2330:11
outcome 2752:20	overruling	2529:20	2718:18	2742:2, 2742:4
outdated 2393:5	2347:10	2530:1, 2530:2	2718:20	pacyniak@law...
2599:14	oversight	2539:9	2718:21	2330:16
2684:8	2367:13	2539:18	2718:25	pad 2338:15
outdoors	2730:3	2556:24	2719:5, 2719:6	2540:21
2723:20	overstate	2558:7	2719:7	2542:22
outlined 2439:4	2534:7	2775:14	2719:21	2554:11
outlines	overstates	2775:17	2719:21	2564:22
2435:24	2607:2	Oxy's 2354:25	2720:1, 2720:6	2703:2, 2703:8
2436:20	2675:19	2453:22	2720:12	2703:16
2437:15	2675:20	2528:11	2730:17	2725:18
2439:17	overview	2530:24	2730:24	pad's 2540:15
outset 2688:4	2428:14	2532:10	2731:2, 2731:6	2540:16
outside 2353:13	2428:19	2532:18	2731:10	pads 2544:14
2410:25	2592:12	2775:11	2731:12	2546:15
2464:22	OWL 2333:9	Oxy/EDF 2690:23	2731:12	2548:12
2598:21	owner 2401:17	ozone 2327:5	2731:17	2551:19
2600:16	2435:10	2344:21	2732:5	page 2335:2
2663:20	2435:21	2346:6	2732:18	2336:2, 2337:2
2740:4	2436:3	2347:11	2732:21	2359:14
outstanding	2437:13	2365:18	2733:2	2428:10
2538:20	2437:25	2367:21	2733:12	2428:10
outweigh	2438:22	2392:11	2733:13	2428:11
2525:11	2458:1	2396:8, 2398:2	2733:15	2445:14
oval 2630:20	2458:18	2398:4	2736:5, 2736:5	2448:4, 2448:5
overall 2356:10	owners 2429:18	2409:25	2736:8, 2736:9	2452:13
2430:25	2437:6, 2437:9	2410:4	2736:17	2453:9
2458:12	2439:10	2410:16	2736:20	2455:15
2499:12	2439:19	2410:22	2736:21	2457:22
2547:16	2440:17	2411:3	2736:23	2461:8
2571:24	2458:11	2411:10	2737:2, 2737:9	2463:16
2573:19	2507:5	2411:14	2737:15	2465:22
2597:15	2526:14	2411:21	2744:23	2470:22
2598:12	2528:2	2411:24	2767:19	2472:5
2598:12	2569:20	2412:2, 2414:5	2768:20	2473:19
2598:22	ownership	2414:6, 2488:8	2769:6	2474:1, 2477:1
2598:23	2611:10	2493:10	2770:11	2477:22
2677:1	2611:17	2495:9	2777:24	2564:9
2750:11	oxides 2411:17	2501:15	2779:23	2615:14
overestimate	2768:15	2502:8, 2510:1		2615:24
2550:22	Oxy 2332:9	2537:7, 2540:8		
overestimated	2355:6, 2355:7	2540:9		

Volume 8
9/29/2021

EIB Ozone Hearing

pages 2358:2	2488:12	2336:18	2716:10	parks 2406:24
2360:24	2488:17	2337:17	2716:12	2406:25
2381:6	PAMELA 2328:9	2345:17	2716:20	2407:3
2457:21	pandemic	2345:18	2717:4, 2717:5	2407:18
paid 2498:14	2338:19	2347:15	2717:11	2408:16
2664:2	2639:22	2355:19	2717:12	2409:8
Palace 2329:16	panel 2478:18	2356:19	2729:3, 2729:8	2410:17
Palmer 2335:12	2479:3, 2777:3	2356:20	2733:6	2410:23
2337:23	2779:2	2357:17	2733:23	2411:3, 2411:6
2427:22	panelist	2361:20	2734:1, 2741:2	2411:9
2428:1	2515:10	2380:18	2741:3	2411:10
2428:12	panelists	2380:19	2741:10	2411:19
2454:19	2342:4	2537:1, 2537:2	pardon 2425:16	2411:19
2461:12	paper 2544:11	2537:4	2667:16	2412:1
2461:13	2544:12	2537:15	2689:10	2412:10
2461:14	2545:18	2537:16	parent 2498:17	2415:1, 2415:6
2461:16	2549:17	2537:20	parishioners	2415:9
2461:17	2551:12	2537:25	2505:12	2505:19
2461:20	2572:1	2538:12	park 2330:17	2506:18
2462:5, 2462:9	2572:13	2538:25	2331:2, 2334:5	part 2340:6
2462:17	2572:14	2539:3	2386:19	2340:12
2462:22	2572:17	2541:22	2387:21	2346:4, 2346:6
2462:25	2682:16	2542:3	2390:20	2346:18
2463:2, 2463:8	2714:17	2547:23	2391:3	2352:2, 2352:3
2463:15	papers 2350:3	2559:1	2392:10	2354:19
2463:18	2585:13	2560:12	2398:19	2373:16
2463:25	2676:20	2560:21	2398:20	2379:16
2464:5	parade 2713:9	2560:22	2398:23	2382:3
2464:14	paragraph	2561:23	2398:24	2383:21
2464:19	2434:25	2562:5	2398:25	2392:5, 2400:6
2465:4, 2466:2	2435:4	2562:10	2399:3, 2399:5	2401:19
2466:4, 2466:7	2435:13	2562:13	2399:12	2408:7, 2408:8
2466:11	2435:24	2564:7	2401:1, 2407:6	2409:16
2467:25	2436:15	2564:10	2407:10	2410:3
2468:3, 2468:6	2436:17	2576:18	2407:20	2412:12
2468:15	2436:25	2576:19	2407:21	2412:16
2468:20	2437:5	2577:2	2407:24	2434:7
2469:1, 2469:3	2437:12	2588:13	2408:20	2434:13
2469:9	2437:15	2588:14	2408:23	2434:21
2469:16	2437:16	2588:17	2409:13	2436:8
2469:17	2439:4	2590:10	2409:19	2436:19
2469:20	2439:17	2590:13	2409:20	2448:7
2469:22	2439:18	2590:17	2409:21	2448:21
2470:20	2439:24	2591:10	2410:19	2448:22
2473:17	2440:8	2591:12	2410:20	2449:1, 2449:5
2473:23	2440:14	2591:13	2411:2, 2411:5	2449:8, 2449:9
2473:24	2440:25	2591:19	2411:7	2450:17
2474:8	2441:1, 2441:6	2591:25	2411:15	2451:2, 2459:1
2474:16	2457:23	2595:12	2412:3	2466:13
2474:25	2458:9	2610:15	2412:12	2468:14
2475:8	2759:21	2610:20	2413:5	2474:9, 2485:3
2478:14	2760:3	2613:5, 2614:8	2414:22	2507:7
2480:7, 2487:2	2760:18	2614:10	2415:21	2517:24
2774:12	2779:21	2616:17	2416:13	2526:17
2774:18	paragraphs	2616:24	2416:16	2557:1
2778:6	2441:7	2632:17	2416:18	2558:19
2778:12	parameter	2634:22	Park's 2409:11	2560:13
2778:21	2625:7	2634:24	park-specific	2562:8
2778:25	Paranhos 2330:3	2635:14	2410:15	2562:22
2780:24	2336:14	2635:18	2410:16	2566:7
Pam 2374:6	2336:16	2635:22	parking 2565:8	2571:17

Volume 8
9/29/2021

EIB Ozone Hearing

2584:14	2770:3	2531:14	Paso 2333:2	2559:16
2606:17	particularly	2578:9	pass 2533:13	2569:25
2631:1	2343:2, 2344:5	2581:21	2534:3	2593:15
2640:18	2357:8	2621:24	2551:25	2596:20
2641:6	2361:25	2642:25	pass/fail	2596:21
2641:15	2376:7	2693:17	2533:21	2624:13
2646:18	2376:12	2709:18	passed 2660:1	2624:16
2665:25	2376:23	2737:25	passes 2660:2	2624:21
2682:22	2457:8, 2467:8	2758:13	pastor 2505:5	2625:23
2685:17	2541:16	2766:16	path 2534:18	2626:5
2686:9	2548:12	2766:21	patients	2626:14
2686:16	2559:10	2779:1, 2780:2	2509:11	2626:17
2696:19	2579:8	2783:11	Patricia	2652:24
2700:7	2580:20	2783:14	2488:21	2658:8
2702:17	2593:25	partly 2365:1	2504:3, 2504:4	2663:25
2732:6	2641:10	2365:2	pattern 2458:18	2722:11
2732:11	2685:4	2615:20	2631:14	2723:15
2734:24	2685:19	partnered	patterns 2548:6	2728:19
participants	2720:4	2543:12	2723:20	2728:20
2385:1	2750:13	2544:6	pause 2514:11	2730:22
participate	2762:14	2546:23	2675:23	2731:12
2412:3	2782:3	partners 2333:9	pays 2505:17	2745:4
2414:23	particulars	2333:17	2505:19	2745:13
2421:8	2490:18	2339:4	2505:20	2749:21
participated	2632:6	2491:23	PC 2333:22	2750:7
2407:25	parties 2347:21	2491:24	PDF 2541:24	2750:12
2541:7	2348:11	Partnership	PDFs 2541:20	2751:20
participates	2356:17	2339:23	peer 2572:24	2752:8, 2752:9
2414:22	2375:21	2633:17	peer-reviewed	2752:9
participating	2376:23	parts 2354:7	2433:19	2752:10
2411:1	2406:10	2429:23	2471:12	2752:11
2411:23	2408:9	2440:10	2541:16	2752:12
2412:6	2414:19	2440:13	2572:13	2752:12
participation	2415:20	2484:16	2572:14	2752:12
2757:20	2418:13	2506:13	2572:17	2752:22
particular	2419:1	2639:23	Penn 2543:13	2752:23
2354:22	2419:14	2640:1, 2685:6	Pennsylvania	2753:12
2356:21	2419:20	2685:12	2393:11	2753:20
2357:4, 2386:9	2420:6	2685:24	2542:21	2759:25
2386:10	2423:16	2685:25	Pennsylvania's	2762:5
2400:6, 2414:3	2432:18	2737:15	2394:4	2762:22
2463:13	2432:21	party 2357:3	people 2361:5	2763:12
2463:20	2433:7	2398:9, 2408:2	2368:12	2763:13
2474:2, 2487:4	2433:18	2437:21	2372:9	2766:2
2502:9	2441:13	2438:20	2372:12	2767:23
2503:18	2442:12	2480:17	2372:18	2767:24
2516:25	2442:25	2514:11	2372:20	2769:4, 2769:8
2518:5	2444:18	2574:22	2373:13	2769:24
2550:12	2459:19	2574:25	2373:17	2770:5
2558:19	2465:12	2627:1	2460:11	2772:21
2564:20	2466:20	2695:18	2490:13	people's
2573:10	2471:22	2709:21	2502:2	2487:15
2612:16	2472:2, 2477:7	2712:21	2502:12	Peralta 2329:9
2628:19	2477:9	2712:23	2505:15	2332:5
2702:17	2477:24	2764:1	2506:1, 2506:7	2332:22
2710:7	2478:17	2770:17	2506:14	percent 2369:11
2710:21	2481:16	party's 2517:9	2507:5, 2507:6	2372:10
2710:21	2514:2	2517:9	2509:13	2372:11
2713:20	2517:15	Paseo 2329:9	2509:22	2493:21
2725:18	2521:18	2332:5	2532:6, 2536:4	2497:20
2765:8, 2767:1	2522:6, 2529:9	2332:22	2547:1	2497:21

Volume 8
9/29/2021

EIB Ozone Hearing

2526:18	2674:21	permanently	2580:16	2558:10
2526:19	2674:22	2612:15	permitting	phased 2557:10
2526:20	2674:23	Permian 2338:11	2374:25	phased-in
2543:9	2680:10	2338:15	2401:19	2526:9
2543:17	2680:15	2338:21	2415:2	phases 2571:7
2543:20	2681:9, 2681:9	2338:24	2516:11	phasing 2526:5
2543:24	2684:15	2339:23	2756:21	2544:25
2546:17	2684:15	2461:22	2758:21	Phoebe 2328:5
2547:11	2684:15	2540:19	2767:9	2419:23
2547:12	2684:17	2542:5, 2542:7	Persistent	Phoenix 2329:5
2547:17	2686:21	2542:11	2339:7	phone 2512:25
2547:18	2687:3, 2687:3	2542:13	person 2371:25	2663:18
2547:19	2753:12	2543:3, 2543:7	2531:3, 2532:6	photo 2631:10
2548:17	2753:20	2544:14	2565:5	photochemical
2549:11	2779:24	2545:22	2582:20	2537:8
2549:12	percentage	2546:1, 2547:3	2658:1	photos 2631:11
2549:24	2568:14	2547:9, 2548:2	2726:22	2631:12
2549:25	2624:16	2548:4, 2548:5	2757:18	phrase 2756:6
2554:4, 2554:4	2624:21	2550:10	personal	phrasing 2378:1
2554:6	2673:23	2551:14	2499:13	PHYS 2338:19
2554:23	2674:20	2551:19	2700:6, 2700:7	physically
2558:14	percentages	2555:22	2708:15	2338:3
2558:14	2641:10	2564:22	personally	physician
2558:15	2682:7	2568:1, 2568:7	2586:6	2509:1
2568:16	perfect 2537:25	2568:10	2663:15	physics 2736:18
2570:25	2562:23	2569:8	2783:8	pick 2343:17
2571:18	2649:9	2569:21	personnel	picking 2707:12
2571:22	2716:20	2580:9	2499:2	picture 2389:2
2571:23	perfectly	2580:21	2677:16	pie 2410:3
2572:2	2353:7, 2382:9	2646:25	2685:7	piece 2573:22
2580:12	perform 2458:1	2668:11	2685:12	2619:1
2584:10	2574:9, 2640:7	2680:20	persons 2597:6	2683:11
2584:12	2640:16	2681:5, 2681:9	2718:10	pieces 2486:9
2594:10	2644:13	2684:4	2759:11	2552:9, 2679:8
2594:19	2673:15	2686:24	perspective	2708:8
2594:20	2673:15	2687:3, 2698:2	2407:22	pipeline 2333:3
2594:20	2673:17	2699:6	2497:9	2756:22
2598:7	2690:11	2699:13	2627:25	2761:17
2602:13	performance	2699:20	2713:22	2761:19
2606:16	2340:5	2700:12	2739:22	pipelines
2611:21	2340:12	PermianMAP	pertains 2428:8	2546:15
2611:23	2346:12	2541:17	petition	2580:22
2611:23	2517:20	2543:12	2364:18	pipng 2555:10
2612:1, 2612:2	2534:5	2547:24	2451:11	place 2330:4
2612:7, 2612:7	performed	PermianMAP.org	2451:19	2351:22
2612:25	2544:4, 2547:8	2543:1	2777:12	2394:5
2614:7	2589:14	permission	2782:9	2439:19
2614:23	2648:21	2541:10	petitioner	2503:3
2625:8, 2625:8	performing	permissions	2354:11	2527:22
2641:2	2687:25	2515:22	2354:13	2527:23
2644:11	2688:10	permit 2419:11	2365:5	2541:7
2652:2	period 2430:17	2507:9	2376:11	2574:23
2655:22	2487:15	2580:14	2376:13	2615:4, 2622:7
2672:14	2565:8	2640:8	2385:1	2658:12
2672:16	2732:25	2734:24	Petroleum	2704:18
2672:17	periodic 2456:2	2767:5	2332:2	2724:8
2672:17	periodically	permits 2652:11	2463:20	placed 2356:15
2673:7, 2673:8	2666:25	2765:21	2578:16	2362:12
2673:9	periods 2706:21	2765:23	2606:18	2403:13
2673:25	Perkins 2649:18	2766:5	phase-in	places 2358:6
2674:1, 2674:2	2660:22	permitted	2525:25	2396:1

Volume 8
9/29/2021

EIB Ozone Hearing

2477:21	2645:18	2700:24	2488:15	2738:5
2529:23	2645:22	2732:24	2488:17	2742:21
2539:6	2646:1	platform	2489:12	2744:5, 2744:7
2539:20	2646:17	2342:13	2492:9	2745:23
2539:25	2646:20	2364:22	2495:24	2746:11
2595:15	2647:3, 2647:8	2365:13	2496:12	2747:7, 2751:6
2601:19	2648:25	2365:25	2500:10	2751:13
2619:9	2666:9, 2667:5	2389:21	2504:11	2770:22
2627:21	2668:1, 2668:6	2406:14	2508:11	pleased 2662:22
2701:5	2668:9	2478:23	2511:16	plot 2725:21
2705:19	2668:17	2488:13	2514:15	2726:2
2745:13	2668:22	2492:5, 2496:3	2515:22	plug 2497:14
Places:Local	2669:23	2511:6	2516:8	2612:15
2340:18	2670:5	2511:13	2516:23	plugged 2642:10
plan 2437:16	2670:19	2521:24	2521:19	plume 2545:14
2437:17	2670:21	2531:19	2521:24	2551:25
2437:20	2671:6	2582:1, 2627:5	2524:18	2630:23
2437:21	2673:19	2649:14	2529:10	2725:24
2438:2, 2438:7	2674:12	2649:19	2531:15	2753:6, 2753:8
2438:9	2674:14	2695:25	2531:19	plumes 2546:3
2438:23	2678:19	2716:19	2539:3	2546:4
2439:2	2678:23	2738:5	2541:10	2631:12
2705:18	2679:8	2740:19	2541:12	2722:23
2760:24	2679:12	2740:25	2550:24	2723:9, 2723:9
planet 2372:5	2679:19	2770:22	2558:7	plus 2361:7
2658:12	2679:23	2780:7	2558:25	2361:13
2663:16	2680:3, 2680:4	play 2505:20	2564:8	2634:4
planner 2391:13	2683:3	2722:12	2576:10	PM 2534:16
planning 2347:2	2689:10	2728:19	2576:14	pneumatic
2685:12	2689:11	playground	2576:24	2339:5
plans 2395:3	2694:7	2663:19	2579:19	2339:21
2404:4, 2412:8	2694:18	playgrounds	2582:1	2369:25
2437:18	2696:14	2539:7	2590:22	2370:6
2439:3, 2439:4	2697:10	2539:21	2591:23	2373:11
2439:7, 2439:9	2697:13	playing 2382:8	2593:14	2437:3
2517:13	2697:13	2459:12	2594:4, 2595:8	2494:23
2527:2	2699:2, 2706:7	2503:4	2602:3	2503:9
2605:20	2720:7	2718:10	2606:11	2503:15
2605:21	plant's 2672:14	PLC 2329:4	2611:12	2510:19
2759:10	plants 2381:22	please 2343:7	2613:9, 2615:3	2653:10
plant 2359:3	2381:22	2355:3, 2364:4	2627:5, 2637:2	2663:10
2359:16	2381:23	2366:2	2637:18	pneumatics
2380:25	2381:24	2366:17	2643:10	2356:12
2381:7, 2381:9	2381:24	2371:4, 2374:6	2644:15	2370:4, 2456:5
2381:13	2432:7, 2442:3	2378:21	2649:4	2503:13
2381:17	2462:2, 2462:4	2387:10	2649:20	point 2344:8
2382:7	2462:12	2390:14	2650:4, 2654:1	2347:16
2382:10	2474:5	2398:10	2654:12	2355:25
2382:18	2546:15	2404:25	2657:6, 2661:7	2359:6
2461:20	2552:11	2406:15	2664:18	2359:22
2461:22	2552:13	2422:15	2665:7, 2666:6	2360:11
2485:15	2573:5	2433:24	2672:8	2361:6
2485:25	2646:21	2441:14	2687:22	2364:24
2486:2	2646:23	2460:24	2693:11	2374:13
2486:11	2647:1, 2647:6	2462:17	2696:1	2376:22
2547:5, 2552:5	2667:12	2475:11	2703:23	2377:3
2602:23	2667:14	2478:18	2717:21	2394:17
2644:4	2667:22	2478:23	2718:2	2394:25
2645:12	2667:25	2480:24	2718:24	2396:4
2645:12	2673:13	2482:17	2734:8	2396:14
2645:17	2689:20	2488:4	2736:14	2397:23

Volume 8
9/29/2021

EIB Ozone Hearing

2405:11	2751:23	2510:6	2756:21	2413:4, 2423:4
2418:21	policing	polluted 2770:7	2756:24	2432:17
2418:25	2512:24	polluting	2761:7	2465:2
2425:20	policy 2330:7	2651:7	2765:19	2465:11
2437:4	2341:5	pollution	2765:20	2471:8
2447:24	2391:10	2367:18	2765:21	2471:10
2449:21	2391:13	2368:25	2769:10	2471:20
2465:16	2415:4, 2539:9	2369:9	2771:25	2475:2, 2476:5
2467:6, 2469:4	2539:18	2369:17	poor 2509:16	2480:10
2469:6, 2475:5	2592:14	2369:22	2553:8, 2555:1	2775:12
2479:11	2592:19	2369:25	2555:4	2779:16
2482:23	2624:8	2371:21	2752:14	positions
2483:19	2728:16	2373:4, 2373:8	poorly 2429:4	2391:12
2485:5	2744:10	2373:10	pop 2537:17	2476:11
2511:23	2744:15	2391:8	Pope 2335:18	possibility
2518:16	2748:20	2409:24	2488:19	2376:21
2530:20	2748:21	2411:12	2489:2, 2489:3	2473:5
2534:16	politician	2431:5, 2493:8	2492:4, 2492:6	2676:12
2541:8	2655:2	2493:12	2492:7	possible
2546:13	politicness	2493:19	2492:11	2347:11
2559:20	2453:19	2493:25	2492:11	2376:6, 2377:2
2560:11	pollutant	2494:14	2492:16	2393:20
2560:17	2573:19	2494:19	2492:18	2394:24
2561:4	2593:23	2494:23	2492:24	2398:15
2561:23	2595:25	2495:9	2492:25	2566:20
2564:7, 2572:9	2598:5, 2598:7	2501:15	2510:12	2708:22
2583:2	2659:17	2502:18	population	2742:8
2583:16	2662:10	2503:4, 2503:8	2628:3	Post 2328:12
2585:4, 2587:5	2707:4	2503:20	2726:25	2330:20
2630:16	2718:21	2510:1	populations	2331:5, 2332:5
2635:11	2719:23	2510:19	2596:16	2332:23
2638:20	2734:24	2550:22	2620:24	postdated
2649:4, 2649:9	2735:22	2551:7, 2573:7	2625:2, 2625:5	2469:24
2656:14	2736:24	2573:9	2626:12	posthearing
2657:25	pollutants	2573:21	2628:18	2348:12
2668:13	2327:5, 2338:8	2594:2	2629:12	2349:5
2679:16	2398:1, 2457:5	2594:15	2678:21	2349:18
2686:7	2542:17	2595:2	2720:5	2353:8
2693:16	2556:8	2596:25	2722:18	2388:13
2704:6	2556:10	2603:17	2727:18	2388:18
2710:20	2556:13	2608:19	2762:14	2388:21
2716:11	2620:23	2609:14	2762:17	2388:24
2725:19	2621:5	2626:15	portable 2430:7	2419:2
2725:21	2623:11	2626:20	portion 2377:15	2419:21
2769:13	2663:20	2653:6	2407:15	2423:11
2770:3	2718:10	2653:10	2546:1	2424:3
pointed 2363:13	2720:25	2662:16	2562:22	2424:16
2588:25	2721:3	2662:25	2568:9	2735:11
pointing	2721:10	2663:7	2568:11	2781:20
2381:18	2724:7	2663:10	2612:24	2781:25
2436:21	2724:10	2663:17	Portland 2746:3	postpone 2487:9
2677:19	2726:10	2664:5	posed 2615:2	potential
points 2429:5	2730:13	2720:25	2757:3	2519:22
2521:8, 2620:6	2736:19	2722:16	position	2525:16
2672:24	2736:25	2739:5, 2745:6	2348:24	2525:24
2677:22	2737:3, 2737:4	2746:23	2356:7	2527:9
2704:21	2747:1	2750:5	2361:14	2527:12
2723:23	2769:21	2753:24	2398:25	2540:1, 2540:3
police 2505:21	2772:7	2754:9	2399:12	2540:12
2506:16	2772:20	2754:13	2400:8	2540:15
policies 2501:7	pollute 2509:24	2756:16	2409:11	2540:23

Volume 8
9/29/2021

EIB Ozone Hearing

2552:4	2374:16	preschool	2680:15	2445:15
2552:10	precursor	2505:18	2691:11	2485:22
2553:9	2327:5, 2338:8	prescribe	2692:12	2613:1
2553:16	2346:7	2431:12	presenter	2625:11
2579:13	2367:21	prescribed	2537:17	2637:22
2601:4, 2611:5	2493:10	2431:23	2631:11	price 2338:18
2628:18	2648:12	presence 2430:8	presenting	2498:13
2656:3, 2656:4	2702:18	2470:15	2444:16	2543:19
2656:10	2744:23	2681:19	2696:11	2664:3
2656:11	precursors	present 2349:22	presents 2669:9	prices 2498:15
2670:16	2344:21	2350:18	2669:13	primarily
2679:1, 2682:6	2365:18	2363:21	Preserve	2498:14
2683:4	2488:8	2376:18	2407:10	2540:16
2684:11	2584:18	2418:8	preserving	2553:10
2698:12	2622:16	2418:14	2425:9	2554:14
2722:17	2641:7	2419:21	president	2583:20
2723:14	2733:13	2458:3	2501:4, 2662:3	2776:14
2726:4, 2728:3	predict 2704:14	2458:15	2759:7	primary 2509:3
2728:24	2704:15	2462:13	pressure	2509:5, 2509:7
2739:6	predominantly	2466:20	2428:24	2556:6
2739:12	2626:5	2501:20	2429:6, 2429:9	2575:12
2750:19	preexisting	2512:6, 2513:7	2580:21	2732:5, 2732:5
2762:13	2752:13	2519:21	2580:23	2733:2, 2736:8
2762:20	prefer 2417:18	2529:6	2581:2	2736:25
potentially	2418:2	2638:16	presumably	2737:3, 2737:5
2418:10	2526:11	2639:1	2348:11	2737:15
2498:25	preferable	2741:21	2355:6	principal
2531:3	2421:24	2752:4	presumed 2607:6	2361:22
2574:14	preference	2778:18	pretty 2356:7	principally
2691:16	2469:7	presentation	2357:23	2674:6
2715:7	prefiled	2341:4, 2386:8	2360:14	principles
2730:12	2513:19	2387:11	2409:2	2755:22
pound 2614:22	2610:17	2392:4, 2413:4	2413:24	2761:18
2614:22	2616:19	2416:7	2474:19	2762:10
2684:1	prejudice	2418:15	2497:25	2763:1
poverty 2506:19	2381:11	2427:16	2543:17	2763:15
2596:20	2713:16	2441:8	2617:9, 2645:8	printed 2457:20
2749:21	prejudiced	2441:21	2674:4	printout 2462:9
power 2656:7	2481:17	2466:17	prevailing	prior 2352:6
PowerPoint	prejudicial	2482:24	2630:15	2352:7, 2356:4
2341:4	2357:8	2483:25	prevalent	2420:18
2541:25	premature	2583:13	2470:10	2436:14
practicable	2720:3	2613:22	prevent 2745:16	2436:16
2418:25	prematurely	2632:25	preventing	2437:12
2419:18	2497:14	2665:13	2731:8, 2772:7	2447:22
practical	2642:10	2694:7, 2706:5	Prevention	2448:11
2418:24	premium 2427:14	2748:1	2340:19	2452:25
practice 2346:9	preparation	presentations	2414:24	2459:9
2361:9, 2501:7	2602:4	2444:16	previous	2465:13
2535:2, 2535:3	prepare 2342:1	2747:25	2367:12	2477:6
practices	2596:2	2748:2	2435:5	2524:21
2502:24	2638:23	presented	2435:13	2526:7
2507:18	prepared	2357:23	2436:12	2592:20
practitioners	2349:19	2376:9	2477:13	2687:8
2501:10	2454:5, 2521:7	2382:20	2525:17	2746:11
preapproved	2533:24	2384:8, 2392:3	2627:14	2746:13
2439:4, 2439:9	2596:6	2392:18	2631:11	priorities
precious 2372:5	2651:24	2436:12	2680:22	2415:12
precisely	2732:1	2516:8	previously	2517:9
2614:18	Presbyterian	2614:21	2385:12	2662:18
preclude	2655:11	2617:2	2434:2	priority

Volume 8
9/29/2021

EIB Ozone Hearing

2410:23 2518:1 private 2760:23 privately 2389:25 privilege 2501:4 privileges 2402:13 2591:23 privy 2632:6 prize 2426:24 pro 2662:3 2713:13 proactively 2507:14 probably 2404:7 2411:23 2417:22 2417:23 2423:6, 2444:4 2457:24 2461:15 2466:25 2470:11 2483:19 2572:1, 2572:4 2631:4 2634:11 2639:15 2639:20 2657:25 2658:11 2675:9 2699:25 2701:3 2711:10 2726:5 probe 2430:19 2565:9 probity 2563:25 problem 2382:17 2412:22 2498:8, 2618:6 2716:3, 2753:2 problematic 2363:14 problems 2349:2 2349:21 2405:3, 2495:1 2536:3, 2547:4 2581:14 2581:18 2586:11 2586:16 2655:9, 2704:5 2712:2 procedural 2365:15 2376:16 procedurally	2779:9 procedures 2364:25 2376:1 2498:13 2568:22 proceed 2387:10 2390:14 2418:17 2423:14 2481:24 2487:22 2558:24 2561:23 2649:6, 2665:7 2672:8 proceeding 2346:21 2353:16 2385:2, 2400:5 2456:1, 2462:8 2462:21 2465:14 2514:2, 2559:2 2563:18 2578:11 2590:4, 2608:2 2622:1, 2632:3 2632:5, 2730:1 2752:4 2752:20 2767:1, 2768:2 2768:10 2768:12 2768:14 2769:19 2772:4 2779:17 2779:18 2783:12 proceedings 2327:10 2348:20 2388:7, 2418:8 2422:12 2488:1 2576:11 2636:24 2693:8 2742:14 2782:23 2783:7, 2783:8 2783:10 process 2339:20 2385:18 2407:25 2425:9 2427:11 2437:11 2438:5, 2439:6 2439:13	2440:5 2454:23 2466:23 2472:4, 2505:3 2527:25 2587:14 2589:10 2615:10 2632:8, 2671:8 2710:15 2777:3 processes 2415:2 2415:10 2722:22 2722:24 processing 2428:22 2432:7, 2474:5 2546:15 2547:5, 2623:7 2644:4 2648:24 2768:16 produce 2346:24 2466:6 2671:20 2671:21 produced 2455:2 2554:5, 2616:1 2671:23 producers 2493:23 2506:25 2507:3 2507:16 2507:17 2659:18 2659:20 produces 2655:17 producing 2553:21 2554:22 2558:3 production 2339:12 2339:14 2339:20 2370:1 2373:12 2428:22 2431:16 2431:19 2431:20 2435:6 2435:16 2451:1 2451:25 2469:24 2470:6	2490:15 2494:24 2497:19 2497:19 2497:20 2503:10 2507:2, 2507:7 2540:17 2540:21 2543:10 2543:17 2543:20 2543:21 2549:24 2553:8 2553:10 2553:11 2554:5, 2554:8 2554:16 2554:18 2554:20 2554:21 2570:13 2584:9, 2599:5 2603:24 2611:22 2611:23 2611:24 2611:24 2612:2, 2612:3 2612:7, 2612:8 2612:25 2623:7 2626:16 2653:11 2721:9 2722:17 2723:1 2726:11 2726:14 2768:16 2776:15 2776:16 Production-S... 2339:8 products 2498:5 professional 2391:17 2503:16 2747:24 professor 2343:3, 2351:3 2353:24 2374:16 2375:1, 2742:1 2742:6 2742:16 2743:16 2745:18 2746:5 2746:13	2746:18 2747:9 2763:18 2763:21 2763:23 2764:2 2764:12 2766:6 2766:15 2770:18 2771:4, 2771:7 2773:3, 2774:1 proffer 2418:18 2421:7 2482:15 2482:21 2482:24 2482:25 2483:10 2483:20 2483:24 2484:17 2485:3 2485:17 2485:20 2485:23 2564:8, 2643:2 2643:4 2668:14 2669:5 2669:25 2679:4 2679:15 2690:21 2691:3 2691:10 2691:17 2691:22 2692:7 2692:15 2692:22 proffered 2386:5 2418:12 2419:9 2419:20 2420:9 2420:10 2712:18 proffers 2487:14 2710:22 profile 2518:15 2518:23 2554:18 2589:12 profit 2368:8 2368:9 2373:16 profound 2372:4 program 2334:3
---	--	--	--	--

Volume 8
9/29/2021

EIB Ozone Hearing

2346:19	2669:19	2588:12	2453:14	2605:18
2355:17	2681:4	2632:16	2454:7, 2454:8	2606:23
2429:16	2681:16	2707:25	2455:16	2608:6
2429:17	2704:18	2773:21	2456:11	2608:13
2430:25	2734:24	promulgated	2474:5	2608:21
2433:11	2757:11	2346:12	2475:20	2608:22
2442:8	2757:14	2599:14	2477:13	2609:5, 2609:9
2445:18	2757:16	2600:13	2494:11	2609:17
2448:13	2758:2, 2758:7	2757:25	2517:10	2609:19
2455:23	programs 2334:4	promulgating	2517:14	2609:23
2456:6, 2456:8	2429:17	2754:9	2517:16	2610:22
2457:13	2445:17	2754:13	2518:1	2614:16
2462:10	2448:11	promulgation	2518:18	2615:6
2467:24	2456:21	2755:15	2519:2	2616:22
2468:4, 2468:7	2472:12	2755:18	2519:10	2617:11
2468:7	2519:4, 2519:6	proof 2355:21	2520:12	2620:17
2468:11	2535:1, 2535:2	2365:6	2521:1, 2524:2	2621:10
2468:14	2589:6	2380:13	2524:7	2622:8
2468:19	2598:18	2380:14	2526:12	2622:25
2486:11	2604:20	2385:23	2526:13	2629:4, 2632:6
2518:10	2640:10	propane 2651:23	2526:24	2690:24
2518:11	2690:15	2657:23	2527:1, 2528:7	2712:24
2519:9, 2524:1	2735:5	proper 2365:2	2529:25	2713:9
2531:2, 2531:5	2759:10	2365:9, 2376:2	2539:5	2713:11
2532:9	progressing	2423:1	2539:23	2713:14
2532:14	2535:4	2484:13	2540:5, 2540:6	2713:16
2532:22	prohibit	2581:2	2540:10	2715:2
2532:24	2757:25	2582:20	2540:14	2715:22
2533:2, 2533:8	project 2330:7	2730:8	2552:6	2718:4, 2718:5
2533:12	2338:11	2761:20	2557:20	2719:1, 2719:3
2533:16	2339:22	properly 2397:5	2558:8	2732:7
2533:20	2341:5	2397:9	2558:19	2732:11
2534:5, 2534:8	2464:10	2547:14	2575:16	2748:14
2534:16	2464:15	2580:18	2577:17	2749:1, 2749:8
2544:21	2469:21	2587:13	2577:21	2749:12
2549:5, 2552:8	2539:10	2639:4, 2639:6	2582:15	2749:13
2559:24	2539:19	2665:11	2593:17	2750:17
2561:14	2541:16	proportion	2593:18	2750:20
2569:11	2541:17	2686:5	2593:21	2750:21
2570:13	2542:6, 2542:6	proportional	2594:22	2752:19
2572:3, 2572:5	2542:10	2624:18	2595:13	2768:7
2586:13	2566:19	proposal	2595:17	2770:10
2598:3	2567:25	2356:22	2595:19	2772:3, 2775:1
2598:13	2592:21	2356:25	2595:22	2775:4, 2775:9
2601:3, 2601:7	2624:8	2357:3	2595:24	2776:4
2602:10	2744:11	2357:25	2596:17	proposals
2603:18	2744:16	2358:8, 2358:9	2597:7	2465:11
2603:19	2748:20	2358:18	2597:10	2526:7
2603:25	2749:3	2358:21	2597:13	2526:22
2606:7, 2607:7	2750:20	2358:23	2597:17	2594:6
2607:9	2752:18	2362:10	2598:2, 2598:4	2688:16
2607:16	2761:19	2369:15	2598:6, 2598:8	2745:2, 2745:9
2608:5, 2609:3	2763:5, 2765:9	2373:2, 2379:4	2598:17	2748:14
2615:19	Project's	2380:24	2598:23	2748:19
2615:22	2748:22	2416:17	2600:4, 2600:9	2749:1, 2749:2
2618:16	2767:4	2416:19	2600:23	2762:12
2625:17	prolong 2386:2	2433:16	2601:4	2762:16
2632:2	promote 2501:6	2444:15	2601:14	2762:18
2640:18	promotes	2445:23	2602:1	2762:20
2646:24	2491:18	2446:8, 2447:6	2603:20	2763:2, 2763:2
2667:21	prompt 2536:19	2450:1	2604:5	2763:3

Volume 8
9/29/2021

EIB Ozone Hearing

2768:11	2622:20	2373:3	2472:23	2755:13
2768:25	2623:13	2493:11	2475:19	2757:17
2771:16	2625:16	2493:25	2486:19	2758:25
2772:12	2625:23	2494:6, 2494:8	2486:23	2759:16
2772:14	2632:2, 2632:4	2494:13	2487:3, 2493:4	2775:21
2779:7	2632:7	2495:14	2497:8	providing
2779:18	2644:21	2502:6	2503:22	2360:20
propose 2459:21	2653:1	2502:20	2506:15	2375:2
2494:11	2711:22	2540:6	2507:11	2382:18
2517:10	2715:2	2593:24	2525:3	2476:4
2526:14	2717:15	2653:2	2592:11	2491:16
2539:10	2718:6	2656:15	2607:25	2509:3
2539:19	2718:14	2656:15	2611:12	2562:24
2556:23	2732:9	2664:3	2616:22	provision
2557:13	2744:23	2720:12	2616:25	2452:5
2557:17	2748:6, 2748:8	2720:13	2667:20	2474:15
2557:22	2748:11	2720:17	2667:24	2513:24
2557:25	2748:22	2745:12	2676:17	2757:15
2558:10	2748:24	2762:16	2676:20	2760:24
2608:4, 2609:2	2749:3	2767:21	2682:15	2768:19
2712:3, 2732:4	2751:10	2767:24	2752:18	2779:20
2777:10	2755:1	protected	2757:25	2779:20
proposed 2327:4	2756:10	2596:17	2759:24	provisions
2338:7, 2338:8	2756:22	2597:6, 2664:5	2765:7	2355:12
2340:5	2757:4	2772:24	2775:17	2375:19
2340:12	2761:19	protecting	provided 2359:7	2384:19
2354:7, 2364:8	2770:5	2510:15	2360:1, 2360:8	2401:20
2367:21	2771:18	2766:3, 2769:4	2382:3	2433:24
2392:20	2775:14	2772:19	2385:17	2441:10
2393:7	2776:2	protection	2421:4	2447:5, 2448:3
2393:24	2779:14	2415:4	2432:18	2449:25
2396:23	proposes	2510:17	2433:5, 2433:7	2472:10
2403:20	2601:11	2746:16	2438:20	2473:23
2431:7	2608:13	2752:1	2440:11	2524:3, 2524:4
2432:15	2748:18	2769:25	2450:12	2748:7
2437:21	proposing	protections	2453:17	2748:23
2438:21	2361:25	2494:15	2458:6	2759:19
2442:11	2445:10	2747:5	2461:24	2763:14
2442:11	2449:3	protective	2462:9	2775:6, 2778:8
2443:4, 2445:2	2451:18	2608:4, 2609:2	2475:22	proximities
2452:15	2472:18	2620:17	2477:24	2625:6
2454:22	2474:2	2620:19	2485:25	proximity
2457:23	2477:22	2631:4, 2740:2	2486:3, 2491:7	2340:8
2458:22	2574:25	2740:7	2524:7	2354:25
2493:10	2610:25	2779:15	2560:24	2356:22
2513:20	2622:25	protocols	2588:18	2356:25
2518:18	2623:18	2641:16	2616:19	2357:3
2520:3	2710:6, 2710:8	prove 2373:13	2777:15	2358:21
2525:13	2735:4	provide 2358:20	providers	2358:22
2525:18	2771:22	2375:23	2509:7, 2607:8	2540:5
2528:23	propriety	2401:18	provides 2437:8	2593:17
2540:11	2418:16	2428:18	2445:25	2596:17
2551:3, 2551:5	2730:6	2432:24	2471:17	2596:23
2557:6, 2558:7	Propulsion	2433:8	2490:14	2597:14
2561:3, 2594:8	2545:6	2433:19	2490:20	2597:19
2595:5, 2598:3	protect 2367:21	2438:9, 2439:9	2490:21	2598:17
2598:21	2368:10	2453:13	2505:11	2598:21
2603:19	2368:22	2458:10	2505:13	2600:4
2606:7, 2610:7	2369:16	2462:6, 2466:8	2505:13	2616:21
2611:5	2369:18	2466:14	2505:14	2622:8
2622:15	2370:8, 2372:5	2471:2	2506:5, 2506:9	2622:25

Volume 8
9/29/2021

EIB Ozone Hearing

2623:9, 2625:3 2651:22 2718:4, 2718:5 2745:2, 2745:5 2745:7, 2749:8 2750:3 2750:15 2750:22 2752:11 2762:24 2763:10 2763:13 2769:10 2772:13 2772:14 2775:5 proximity-based 2600:9, 2718:7 2718:25 prudent 2648:8 PSE 2749:24 PTE 2432:2 2432:3, 2432:5 2432:9 2432:10 2434:14 2434:17 2518:17 2553:4, 2553:9 2601:12 2617:16 2618:2, 2618:5 2618:6 2618:10 2688:18 2775:22 PTes 2615:17 public 2335:5 2335:7 2335:17 2335:19 2335:21 2335:23 2336:5, 2336:7 2337:9 2337:11 2337:13 2337:15 2342:14 2344:5 2364:21 2364:22 2365:11 2365:16 2365:19 2365:21 2366:4, 2367:3 2367:4, 2368:9 2371:14 2371:15 2371:20	2374:5 2378:12 2386:18 2391:10 2439:10 2487:22 2488:10 2488:13 2488:23 2490:3, 2490:4 2491:8 2492:20 2492:21 2496:22 2496:23 2500:20 2500:21 2501:5, 2501:6 2501:7, 2501:9 2503:16 2504:21 2504:22 2507:12 2508:20 2508:21 2511:14 2560:24 2572:24 2599:3, 2636:5 2636:6, 2649:6 2649:14 2649:15 2650:16 2650:17 2651:2 2654:22 2654:23 2657:17 2657:18 2661:22 2661:23 2664:12 2719:22 2722:14 2741:11 2747:8 2752:17 2752:18 2755:1, 2755:2 2755:2 2755:12 2755:16 2755:21 2759:24 2760:6, 2760:9 2762:7, 2770:1 2779:14 2779:15 2783:17 publicly 2360:15	2368:8 2542:25 2667:23 published 2541:15 2544:11 2549:17 2747:22 2761:12 2778:14 Pueblo 2407:11 2753:13 pull 2390:22 2393:1, 2560:3 2628:25 pulled 2396:13 2404:22 2405:12 2405:13 2586:22 2611:14 2629:11 pulmonary 2597:3 pumps 2428:21 2428:24 2429:10 purchase 2498:25 2607:12 purport 2711:12 purportedly 2352:16 purpose 2438:8 2472:22 2518:1 2615:19 2645:3 2723:13 2744:19 2776:17 purposes 2448:23 2449:4, 2449:6 2449:13 2521:3 2556:17 2601:3 2615:17 2642:20 2744:21 pursuant 2593:16 2755:18 2760:25 pursue 2759:17 push 2460:9 2487:14 2658:5, 2715:5 2715:18 pushing 2659:7	put 2345:4 2348:7 2351:22 2352:14 2352:19 2354:18 2359:4 2359:10 2359:17 2362:21 2362:23 2362:23 2369:14 2369:14 2373:1, 2384:3 2389:11 2405:23 2417:6 2420:14 2426:24 2467:1, 2467:2 2472:2, 2480:9 2480:10 2481:23 2486:18 2497:13 2531:5, 2622:7 2633:18 2647:18 2658:5, 2674:9 2692:12 2701:14 2703:16 2704:18 2716:7, 2716:8 2721:23 2731:5 2740:16 2745:10 2771:16 2774:12 2775:4, 2781:9 2781:19 2782:16 puts 2361:15 putting 2349:9 2353:1 2359:20 2448:9 2494:11 2507:3, 2535:2 2662:11 2700:11 2700:24 2742:6, 2742:7	Quad 2395:16 2445:7 2445:24 2446:2 2446:11 2448:6, 2448:7 2448:19 2448:19 2448:24 2448:24 2449:4 2449:10 2449:15 2449:15 2472:5, 2472:6 2472:7, 2472:8 2472:16 2472:16 2517:24 2533:6 2533:18 2533:19 2535:3, 2619:5 2640:9, 2640:9 2640:17 2640:17 2644:13 2644:13 2675:25 2676:2 qualifications 2516:7 quality 2330:18 2340:7 2347:23 2391:4, 2391:6 2391:8 2392:10 2392:12 2408:17 2409:22 2410:20 2410:23 2413:18 2413:20 2415:12 2459:1, 2464:2 2509:13 2509:16 2509:24 2510:6, 2600:7 2600:13 2622:14 2623:17 2663:17 2664:2 2718:19 2720:9 2720:13 2720:17 2732:5
--	---	---	---	--

Volume 8
9/29/2021

EIB Ozone Hearing

2733:12	2602:17	2474:19	questions	2564:4
2734:4, 2736:7	2602:19	2474:25	2352:1	2564:14
2736:10	2603:1, 2604:1	2475:1, 2475:8	2354:23	2564:21
2737:14	2608:9	2475:9	2374:15	2576:2
2752:14	2608:17	2475:11	2377:6, 2377:9	2576:17
2754:10	2609:5	2476:25	2377:20	2581:21
2754:14	2609:10	2477:11	2377:21	2581:24
2755:9	2609:12	2478:23	2378:3	2582:2, 2582:6
2755:11	2610:25	2481:14	2378:16	2583:3, 2583:7
2755:13	2623:14	2485:16	2390:25	2587:4
2755:19	2672:16	2487:7	2398:5, 2398:9	2587:24
2755:24	2673:4	2514:16	2399:13	2588:6
2757:5	2673:18	2521:24	2400:11	2588:10
2759:24	2675:14	2531:19	2402:4, 2402:8	2588:15
2764:22	2687:15	2532:7, 2550:9	2402:12	2588:19
2765:2	2687:17	2563:15	2406:12	2590:11
2765:10	2687:18	2563:20	2406:19	2600:12
2765:13	2688:20	2563:23	2410:12	2610:18
2767:19	2688:24	2564:3	2412:21	2613:6
2769:7	2689:15	2565:23	2414:15	2613:14
2769:18	2689:17	2573:4, 2573:8	2414:18	2620:5
2771:24	2689:23	2577:15	2419:22	2620:14
quantification	2689:24	2582:10	2441:13	2621:8
2339:17	2690:3, 2690:6	2588:2, 2615:3	2441:23	2621:13
2465:24	2690:6, 2690:8	2624:24	2446:17	2621:18
quantified	2692:1	2628:25	2472:15	2623:23
2544:14	2703:25	2631:25	2478:13	2624:9
quantify	2706:9	2632:22	2478:17	2626:24
2542:17	2706:16	2681:1, 2694:5	2478:20	2627:1, 2627:3
2543:6, 2545:9	2707:7, 2709:9	2695:25	2478:25	2627:4, 2627:6
2545:20	2719:10	2696:15	2479:6	2629:24
2567:5	Questa 2753:14	2699:17	2479:10	2632:14
Quantifying	2753:16	2700:4	2479:18	2693:18
2338:12	2753:19	2701:24	2479:23	2695:19
quantitatively	question	2703:23	2480:1, 2484:5	2695:23
2628:13	2344:16	2708:1, 2708:4	2486:1	2696:5
quantities	2356:13	2709:22	2486:24	2696:10
2498:25	2360:23	2709:25	2487:4, 2514:3	2706:4
quarterly	2361:6	2710:13	2514:12	2709:17
2432:4, 2432:8	2363:19	2710:17	2518:13	2714:4, 2729:5
2445:9, 2446:3	2385:7	2711:19	2521:11	2735:21
2446:13	2388:12	2711:24	2521:15	2737:22
2450:25	2389:10	2714:11	2521:18	2737:25
2517:18	2389:14	2727:10	2521:22	2738:3
2517:25	2389:22	2730:6, 2732:3	2522:1, 2522:5	2738:12
2520:4, 2520:6	2405:5	2734:8, 2738:5	2522:14	2740:17
2520:18	2406:14	2738:10	2522:19	2740:21
2520:20	2414:22	2751:13	2522:22	2764:16
2534:20	2446:6	2764:2	2522:24	2766:7
2540:1	2446:24	2765:24	2529:9	2766:11
2597:22	2447:12	2770:17	2531:14	2770:15
2597:25	2448:15	2770:22	2531:17	2770:20
2598:17	2450:3	2771:20	2531:24	2771:4, 2773:9
2598:20	2451:20	2772:17	2532:1, 2535:8	2773:14
2599:4, 2599:8	2453:25	2779:4, 2780:7	2536:8	2779:1, 2780:2
2599:20	2457:22	2780:9	2536:11	2780:5
2599:22	2459:15	2782:15	2536:14	2780:14
2600:5, 2600:8	2460:25	questioning	2536:16	2780:19
2600:20	2461:14	2536:18	2563:9	2780:22
2601:1	2473:7	2692:25	2563:13	quick 2361:21
2601:16	2473:18	2771:13	2563:14	2392:8

Volume 8
9/29/2021

EIB Ozone Hearing

2560:10 2577:14 2658:6, 2702:6 2714:11 2764:16 quickly 2383:6 2426:8, 2431:4 2518:13 2519:18 2543:22 2581:18 2675:18 2718:13 quite 2345:13 2374:12 2401:1, 2414:1 2551:22 2553:17 2560:20 2568:18 2570:15 2606:3 2671:21 2680:19 2700:9 2700:23 2705:15 2735:22 2736:5 2736:10 quo 2535:6 quote 2355:21 2374:18 2446:11 2681:13 2755:19 2755:25 2756:2, 2758:1 quoting 2560:2	2492:14 2496:16 2500:14 2504:15 2508:14 2591:1 2634:22 2650:10 2654:16 2657:10 2661:16 2741:1, 2743:2 2781:25 raised 2364:1 2388:18 2388:24 2453:22 2455:9 2465:13 2505:7 2729:14 ramp 2438:9 range 2415:6 2487:12 2618:13 2691:8 2691:21 2723:14 2723:23 2724:19 2724:20 ranged 2691:8 ranges 2372:21 ranging 2692:4 rank 2548:15 2548:16 ranked 2753:20 rapid 2527:13 2565:6 2605:16 rate 2435:16 2436:18 2451:1 2533:13 2534:4 2535:13 2535:23 2536:1 2567:21 2646:2, 2646:3 2646:7, 2646:8 2646:16 2646:19 2646:20 2647:14 2675:20 2697:16 2697:18 2777:7 rates 2433:1 2433:20	2435:7 2470:14 2476:8 2476:13 2646:15 2647:8 2676:18 2676:22 2676:25 2681:18 2723:12 ratio 2565:7 2599:25 2634:5, 2634:7 2634:11 2669:15 2669:16 2671:19 2689:7 rationale 2455:11 2455:19 2458:5 2474:14 2475:5 ratios 2633:20 2633:24 re-emphasize 2397:13 re-entertaining 2465:14 reach 2366:2 2374:6, 2376:4 2376:21 2390:2 2406:15 2478:24 2488:14 2488:15 2488:17 2521:24 2531:19 2582:1, 2627:5 2649:16 2649:20 2696:1, 2738:5 2770:22 2780:7 reached 2355:7 2355:8 2365:22 2447:20 2488:10 2488:12 2510:23 2642:25 2664:11 2755:9 2761:23 reaches 2643:3 2753:17	react 2532:20 2584:22 reactive 2509:20 2719:24 reacts 2719:25 read 2353:9 2354:8 2375:25 2376:16 2406:2 2434:21 2453:2 2460:21 2595:11 2626:8, 2662:6 2667:17 2712:15 2734:13 2768:12 2768:17 readily 2498:24 2617:7 reading 2616:25 ready 2366:14 2482:24 2512:6, 2515:8 2523:10 2692:25 2742:5 real 2361:12 2392:8 2509:18 2560:10 2599:18 2676:12 2702:6 2725:25 2753:2 reality 2493:9 realize 2699:24 really 2345:1 2345:5 2345:20 2352:2, 2353:2 2353:14 2360:3, 2361:4 2361:18 2362:20 2363:14 2363:17 2365:3 2375:22 2376:10 2376:14 2378:6, 2394:4 2394:21 2396:4, 2396:6 2396:12 2397:2 2397:13	2397:14 2397:22 2403:2 2413:16 2446:12 2459:10 2471:22 2491:11 2495:9, 2498:8 2535:24 2536:6 2543:25 2545:22 2546:11 2547:20 2548:4, 2548:8 2548:11 2548:25 2549:14 2550:2, 2550:4 2553:8 2553:11 2553:15 2554:7 2555:19 2555:22 2579:9 2580:24 2581:13 2585:18 2586:14 2587:13 2589:10 2589:11 2589:18 2621:4 2628:12 2636:22 2641:14 2645:8, 2659:4 2659:4 2671:19 2686:8 2686:10 2686:15 2698:21 2700:5 2706:21 2708:15 2709:5 2709:10 2709:10 2709:11 2733:6 2739:20 2769:2 2771:24 realms 2397:6 reason 2346:22 2360:7, 2417:8 2652:25
R				
R-E-B-E-C-C-A 2489:14 race 2751:21 2757:19 2758:4, 2760:1 radically 2476:7 2476:11 radius 2600:16 2600:24 Railroad 2753:6 rain 2713:8 raise 2366:21 2371:7 2388:22 2423:6 2423:10 2424:11 2489:16				

Volume 8
9/29/2021

EIB Ozone Hearing

2681:2	2451:15	2560:18	2590:2	2587:18
2687:16	2452:14	2758:1	2688:17	2587:20
reasonable	2453:6, 2453:8	received 2471:5	2768:1	2602:12
2385:10	2453:12	receives	reconsider	records 2677:15
2442:6, 2460:8	2455:16	2757:14	2419:6	recreate
2482:23	2465:3	2757:16	reconsideration	2728:20
2519:12	2473:19	receiving	2340:12	red 2725:7
2520:17	2474:9	2757:11	2419:3, 2603:8	red-line 2363:1
2557:9, 2688:5	2474:13	recess 2388:7	2619:3	2463:3, 2463:6
2750:2	2475:2, 2475:4	2422:12	2619:10	2463:11
2762:16	2476:20	2488:1	reconsidered	2463:12
2763:9	2477:2, 2486:1	2576:11	2397:15	2463:12
reasons 2555:16	2513:25	2636:24	reconstruction	2517:14
2667:4	2514:7	2693:8	2401:11	2614:15
2701:12	2516:15	2742:14	record 2348:7	2642:2, 2642:3
2701:12	2519:15	rechecked	2352:4, 2352:9	2717:15
reassert 2395:1	2519:21	2511:5	2365:2, 2365:9	redevelop
reassess	2524:19	reciprocating	2376:2, 2381:8	2369:23
2463:19	2525:22	2570:21	2381:9, 2382:7	2494:20
Rebecca 2335:16	2527:15	recognize	2382:16	2503:6, 2653:7
2488:20	2528:19	2441:24	2384:6	redeveloping
2490:1	2528:19	2491:20	2389:12	2510:18
2490:10	2538:1	2507:21	2389:23	redevelopment
rebounded	2538:13	2642:1	2404:13	2373:9, 2456:3
2543:23	2550:21	2676:12	2404:19	redirect
rebut 2354:24	2558:23	2698:6	2405:6, 2405:6	2336:16
2358:14	2561:17	2708:20	2405:11	2480:3, 2523:2
2481:18	2573:4, 2593:2	recognized	2418:18	2588:12
2561:15	2593:6, 2593:8	2720:22	2418:20	2588:16
rebuttal 2338:6	2594:5	2721:3, 2723:4	2419:12	2634:22
2340:22	2597:12	recognizes	2426:17	2707:25
2341:6, 2343:2	2602:5, 2609:1	2718:22	2426:25	2708:2, 2741:1
2351:2	2609:19	2748:15	2440:18	2741:4
2354:24	2610:17	recollect	2440:24	2773:21
2355:25	2616:18	2638:7	2461:3	reduce 2398:1
2356:3, 2357:4	2626:9	recollection	2481:18	2410:16
2357:12	2637:24	2447:7	2481:19	2411:3, 2411:9
2358:16	2642:18	recommend	2484:12	2411:20
2358:22	2675:24	2540:4	2484:13	2411:24
2359:12	2729:19	2762:11	2485:8	2429:18
2360:2	2729:20	2762:15	2492:10	2472:19
2361:17	2729:22	2762:25	2514:6, 2516:9	2491:22
2375:5, 2379:5	2730:8	2763:14	2521:3	2502:17
2387:20	2743:16	2778:19	2560:11	2507:23
2390:20	2744:8, 2744:9	recommendation	2561:13	2540:11
2390:22	2744:12	2426:14	2561:16	2555:24
2390:23	2744:22	2426:22	2574:21	2559:4, 2561:2
2392:5	2756:14	2477:25	2586:21	2586:13
2392:20	2763:8	2689:21	2586:24	2589:6
2392:24	2763:16	2739:19	2637:19	2589:18
2394:12	2778:9	recommendations	2729:25	2605:17
2415:21	rebutted	2737:20	2730:10	2641:7, 2647:8
2416:12	2356:23	2762:8, 2782:8	2764:13	2663:10
2416:14	2357:4	2782:11	2782:16	2684:2, 2698:8
2416:16	rebutting	recommended	2783:9	2705:21
2416:17	2357:9	2399:25	recorded 2783:8	2718:7, 2718:9
2416:24	2358:21	2648:19	recordkeeping	2718:15
2417:8	recall 2443:17	2737:13	2440:15	2718:17
2428:11	2638:6, 2737:9	recommending	2440:24	2719:6, 2722:4
2432:19	receive 2441:6	2400:6	2441:4, 2587:8	2737:8, 2740:8
2448:4, 2448:5	2506:8	2473:22	2587:14	2748:18

Volume 8
9/29/2021

EIB Ozone Hearing

2750:18	2707:18	2614:16	reflects 2485:2	2648:13
2776:11	2718:17	2619:9	2529:19	register 2426:7
reduced 2398:3	reductions	reference	refreshes	regrets 2662:5
2454:2	2345:25	2429:25	2474:6	Regs 2406:3
2518:25	2346:15	2430:6	reg 2405:16	regular 2464:19
2551:6	2357:2, 2358:1	2430:18	2405:18	2518:4
2552:21	2358:15	2435:25	2405:19	regularly
2597:14	2362:22	2436:17	2405:20	2663:18
2597:16	2392:19	2443:18	2472:23	2664:2
2597:18	2397:25	2445:16	2474:4	regulate
2597:23	2409:24	2621:4, 2680:8	regard 2362:10	2345:24
2597:24	2411:13	referenced	2451:21	regulated
2598:22	2454:6	2363:3	2507:22	2702:16
2598:24	2459:20	2363:12	regarding	2702:16
2598:25	2477:4	2383:3	2352:13	2702:20
2599:6, 2599:7	2550:22	2582:13	2359:2	2752:25
2599:10	2551:2, 2552:6	2629:3	2407:22	regulates
2599:11	2552:23	references	2418:10	2428:15
2600:1	2593:10	2426:19	2433:19	regulating
2680:19	2593:20	2435:19	2458:11	2346:14
2682:20	2595:20	2755:12	2474:5	2702:8
2704:8, 2715:2	2596:1, 2596:8	referencing	2516:16	2733:13
2763:2	2598:5, 2598:7	2474:22	2516:24	regulation
2775:21	2598:11	2532:20	2521:11	2327:4
reduces 2346:6	2602:5	referred	2525:8, 2539:5	2405:15
reducing 2339:4	2617:12	2405:17	2588:19	2491:15
2491:23	2634:3	2409:18	2594:5, 2602:7	2498:12
2506:22	2644:21	2429:17	2605:24	2592:19
2550:18	2644:25	2463:2, 2470:6	2610:21	2751:10
2593:22	2645:7	2564:20	2611:4	2756:10
2719:5	2647:19	2565:1	2611:10	2762:12
reduction	2648:7	2565:20	2682:15	2762:19
2455:10	2648:10	2638:11	2684:25	2775:7, 2776:6
2527:12	2666:8, 2667:4	2694:6	2718:3	regulations
2610:14	2667:9	2720:24	2744:20	2351:16
2642:4	2667:15	2769:24	2747:1	2368:24
2642:13	2673:12	referring	2755:21	2405:13
2644:19	2673:19	2387:20	2775:12	2473:1
2647:9	2673:20	2390:19	2777:19	2493:24
2647:15	2678:6, 2680:5	2404:20	2777:22	2494:1, 2494:7
2648:2	2683:5, 2683:6	2405:9	2778:8	2497:10
2668:25	2684:14	2443:18	regardless	2497:15
2672:11	2684:16	2465:20	2355:5, 2401:9	2498:6
2672:14	2684:23	2473:24	2424:23	2498:24
2672:16	2686:20	2528:16	2426:16	2499:22
2673:8, 2673:9	2689:5	2620:20	2686:14	2502:17
2673:16	2689:11	2741:6	2751:20	2506:3, 2510:4
2673:18	2691:20	refers 2405:8	2760:1	2510:13
2673:23	2692:3, 2694:8	2484:10	region 2330:19	2510:14
2673:25	2694:23	reflect 2383:7	2339:18	2625:12
2674:1, 2674:3	2707:14	2386:6	2391:5	2652:14
2674:13	2719:4	2386:13	2618:23	2734:14
2674:14	2719:14	2477:4, 2481:3	2648:11	2751:23
2677:8, 2682:7	reevaluation	2481:11	2748:3	2754:10
2682:17	2456:3	2596:14	Region's 2391:4	2754:14
2684:12	refer 2393:5	2599:17	regional	2755:15
2684:17	2521:10	2619:4	2339:23	2755:19
2685:4	2540:4	reflected	2412:5, 2412:9	2757:23
2688:12	2561:24	2464:8, 2521:5	2542:20	2757:23
2689:6, 2706:6	2565:21	reflections	2633:17	2757:24
2707:4	2573:6	2553:12	regions 2391:6	2758:8

Volume 8
9/29/2021

EIB Ozone Hearing

2758:13	2515:16	2429:9	2719:17	2691:5
2758:18	2516:4	2580:23	removed 2396:13	2707:17
2762:9	2524:13	religion 2760:1	2401:3, 2598:9	repeatedly
2779:22	2537:11	relitigate	2641:3	2380:25
regulator	2591:6	2465:8	removes 2473:5	2534:12
2346:6	2637:13	relocation	reopen 2419:11	repeats 2751:25
regulators	2665:2, 2717:7	2396:7	reopened 2356:2	rephrase
2346:10	2743:7	rely 2345:24	reopening	2409:15
2555:10	2774:19	2346:1	2481:19	2451:21
2586:9	relation 2655:3	2362:16	repair 2429:16	2460:24
2587:11	relationship	2362:17	2429:20	2615:3
2600:7	2540:20	2430:5, 2549:6	2430:12	replace 2704:23
2745:11	2553:8, 2584:6	2573:6	2439:17	replete 2755:12
regulatory	2633:4	2605:21	2439:22	reply 2351:5
2458:24	2721:24	relying 2451:17	2440:7	2419:14
2491:20	2721:25	2466:19	2440:10	report 2345:4
2507:20	2739:8	2467:21	2440:21	2347:22
2592:16	2766:21	2590:6	2449:17	2348:11
2625:17	relative	2591:14	2525:2	2399:2
2713:15	2339:11	2779:19	2559:23	2468:22
rehash 2465:8	2356:14	remain 2365:9	2559:24	2605:6, 2605:8
Reid 2694:20	2470:15	2520:25	2561:6, 2561:9	2611:25
2695:1	2648:18	2719:7	2562:18	2675:25
reiterating	2681:19	remaining	2586:8, 2589:6	2679:7, 2679:7
2632:24	2686:24	2473:14	2602:12	2699:1, 2699:5
reject 2762:11	2783:13	remains 2394:16	2611:6	2699:6, 2740:6
2763:1	relatively	2537:23	2639:13	reported
rejected 2607:3	2469:5, 2673:5	remember 2392:9	2639:18	2327:21
rejection	release 2495:7	2392:15	2639:25	2555:9, 2567:7
2767:5, 2767:6	2594:24	2415:20	2640:1, 2640:2	2570:18
rejoin 2511:15	2655:21	2447:9	2640:7, 2686:1	2571:16
2511:16	released 2520:7	2457:24	2688:8, 2689:4	reporter 2342:9
2511:21	2520:9	2466:1	2704:22	2347:6
rejuggle	2520:23	2474:21	2748:16	2387:15
2480:16	relevance	2698:17	2763:6	2387:22
relate 2342:25	2729:15	REMEMBERED	repaired 2431:4	2388:1, 2388:3
2642:8	relevant	2327:12	2439:21	2388:6
2691:13	2424:16	remind 2421:8	2440:1, 2440:1	2388:10
related 2384:9	2449:24	2671:17	2440:4, 2440:9	2404:24
2432:22	2450:13	2729:13	2440:10	2405:2, 2422:3
2432:23	2450:14	reminded	2440:22	2422:4
2519:22	2471:22	2355:19	repairing	2541:11
2520:13	2685:4, 2686:8	2423:15	2718:13	2636:13
2525:7, 2564:4	2745:24	reminder	repairs 2458:2	2643:14
2610:13	2746:11	2344:20	2677:14	2643:19
2620:25	2746:20	2345:2, 2641:6	2685:11	2643:23
2708:9	2747:7	2674:5	2685:12	2665:19
2710:22	2754:15	2745:21	2685:13	2665:21
2731:2	2760:4	reminding	2685:14	2716:25
2732:19	reliable 2563:4	2638:10	2685:14	2751:5
2739:1, 2748:9	2667:8	remonitored	2686:1, 2686:2	reporting
2749:8	reliably	2439:25	2686:6	2327:22
2749:11	2575:15	remote 2542:18	2686:16	2355:17
2768:19	2639:18	2545:9, 2685:8	repeat 2347:7	2360:12
2769:2	relied 2346:17	removal 2395:20	2385:12	2441:5
2783:11	2471:16	2395:24	2510:11	2461:22
relates 2448:13	2565:14	2396:3	2715:15	2462:10
2516:5	2602:15	2593:19	2751:13	2467:19
2749:12	2614:11	remove 2376:5	repeated	2467:24
relating 2387:6	2614:14	2595:17	2458:17	2468:4, 2468:6
2428:2	relief 2428:25	2610:12	2613:23	2468:7

Volume 8
9/29/2021

EIB Ozone Hearing

2468:11	2645:19	2539:10	2369:24	2690:18
2468:14	2646:13	2539:19	2369:25	2755:3
2469:8, 2469:9	2651:19	2558:10	2373:8	2767:17
2469:10	2667:22	2561:6, 2584:7	2373:10	2769:17
2486:4	2675:25	2586:16	2395:16	2771:18
2486:11	2676:3, 2676:7	2593:11	2431:7	2775:13
2497:16	2678:15	2601:20	2431:11	2775:17
2499:2	2678:21	2601:21	2431:12	2775:25
2544:21	2684:7, 2691:7	2622:23	2431:14	2776:2
2549:5, 2552:8	2699:12	2653:13	2432:14	2777:21
2559:23	2699:14	2663:4, 2663:7	2434:7	2777:22
2568:20	2724:3	2686:2	2434:13	2777:23
2569:11	2724:17	2759:18	2434:15	2779:8
2570:12	2776:25	2760:11	2434:16	requires
2570:17	representati...	2763:5	2434:24	2430:19
2571:3	2433:2, 2462:1	2767:17	2435:2	2430:19
2571:19	2667:11	required 2432:1	2436:20	2435:5
2572:3, 2572:5	represented	2435:17	2436:24	2436:15
2572:22	2400:3	2436:1	2438:3, 2438:4	2436:22
2602:12	2555:14	2437:10	2439:17	2437:12
2615:18	2624:23	2440:17	2440:6	2439:19
2615:22	representing	2449:1	2440:15	2439:24
2646:24	2493:1	2452:10	2440:24	2440:2, 2539:5
2667:20	2529:16	2452:16	2441:4, 2441:5	2561:7
2668:10	2577:12	2453:5, 2458:2	2448:7	2561:13
2669:18	2624:7	2460:6	2448:22	2599:20
2671:4, 2674:7	2723:10	2468:17	2449:12	2600:13
2681:4	2723:10	2472:19	2472:18	2600:17
2681:15	2725:17	2498:11	2473:2, 2473:3	2601:9
2698:19	2725:19	2539:22	2494:18	2603:20
2699:3	2746:7	2539:24	2494:22	2608:6, 2609:5
reports 2340:14	2764:14	2570:12	2497:17	2640:8, 2776:5
2468:18	2766:16	2644:6, 2644:9	2503:3, 2503:8	2776:7
2552:7, 2552:9	2766:23	2644:12	2510:19	requiring
2599:17	represents	2705:12	2513:21	2369:19
2604:12	2575:18	2709:1	2519:7, 2525:2	2429:18
2604:17	2602:9	2736:17	2525:14	2450:22
2604:20	2684:11	2756:19	2526:4	2494:16
2619:5	request 2384:16	2759:9	2533:18	2502:21
2698:25	2436:3, 2444:8	2779:12	2551:5	2510:16
represent	2444:10	requirement	2558:11	2518:19
2367:9	2516:25	2394:4, 2432:8	2559:4	2601:17
2398:25	2694:11	2434:19	2562:25	2653:3, 2705:1
2400:23	2711:3	2434:25	2587:7, 2587:8	2719:10
2468:24	requested	2435:15	2587:20	2759:4
2572:9, 2578:9	2527:18	2436:3, 2451:7	2590:3, 2600:6	rescinded
2621:24	requesting	2451:9	2601:24	2690:16
2650:22	2466:14	2525:24	2604:9, 2610:7	research
2723:5, 2723:6	requests	2526:9, 2533:9	2610:10	2340:23
2736:2	2525:13	2559:23	2611:1, 2611:7	2497:18
representation	2527:3	2594:8, 2611:1	2640:18	2541:15
2766:22	require 2370:3	2641:21	2641:3, 2641:8	2542:6, 2544:7
representative	2373:6	2641:22	2641:14	2583:19
2365:23	2431:18	2644:2, 2718:7	2641:24	2584:1, 2584:4
2365:23	2431:21	2756:25	2641:25	2585:13
2366:6, 2366:9	2435:8	2767:6	2642:5, 2653:5	2592:3, 2605:6
2367:8	2446:13	2767:25	2653:9, 2663:9	2605:9
2370:11	2449:3	2776:10	2676:2	2642:12
2373:22	2456:23	2776:21	2690:14	researchers
2568:6	2468:11	requirements	2690:16	2554:13
2574:17	2503:13	2369:21	2690:17	2589:1

Volume 8
9/29/2021

EIB Ozone Hearing

reserve 2390:8	2751:21	2776:3, 2777:7	2667:8, 2668:4	2748:21
reserved 2419:1	2767:2	2777:9	2673:13	2749:2, 2749:7
residence	respected	responses	2676:17	2749:14
2358:6	2530:25	2677:25	2682:15	2749:23
residences	respectively	responsibili...	2683:25	2750:1
2730:22	2340:17	2365:1	2685:11	2750:10
residency	2514:6	responsibility	2690:1, 2750:4	2772:13
2527:23	2599:15	2372:4	2763:11	reviewed
2527:24	2684:4	2372:23	resume 2339:16	2416:13
2529:23	respiratory	responsible	2340:21	2437:22
2529:24	2495:10	2510:3, 2612:1	2514:5	2445:1, 2464:5
2530:4	respond 2349:23	2612:6	2591:15	2467:11
resident	2361:16	2612:23	2670:3	2551:1, 2602:5
2371:23	2364:5	responsive	retained 2526:5	2604:20
residential	2417:19	2560:25	rethink 2660:3	2762:10
2754:5	2419:14	rest 2548:3	2660:5	2762:18
residents	responded	2649:6	retract 2483:22	2763:3, 2763:7
2624:19	2356:4	2660:12	retrofit 2370:5	reviewing
residing	2357:11	2768:17	2503:14	2481:20
2718:10	2357:11	2781:10	2653:14	2573:5
resolution	2452:24	restart 2388:4	return 2374:9	reviews 2414:25
2352:6, 2522:9	2464:6	restate 2462:18	2487:22	revise 2454:22
2758:24	2677:24	result 2517:8	2511:17	2477:22
resolve 2526:2	2682:23	2520:6	2576:6, 2576:8	revised 2340:17
resolved 2525:1	2682:24	2520:21	2664:12	2397:25
2758:23	2781:22	2527:13	2673:10	2416:15
resource 2519:4	respondents	2551:2, 2555:7	2707:17	2416:17
resources	2605:10	2593:19	returns 2647:14	2442:11
2329:12	responders	2594:24	2647:16	2445:2, 2472:7
2330:12	2505:25	2595:19	2688:13	2477:5
2331:4	responding	2595:24	2704:1	2558:20
2340:15	2388:12	2598:8	revenue 2497:22	2572:15
2368:8	2451:2, 2666:1	2608:23	revenues	2619:4
2410:19	2745:1, 2745:8	2609:20	2347:19	revision
2424:4, 2425:9	response 2351:5	2613:4, 2626:2	reverse 2419:7	2433:15
2469:21	2351:7, 2354:9	2642:4, 2642:7	2419:8, 2652:6	revisions
2491:10	2358:16	2648:21	reverted	2338:7
2497:3	2359:7	2671:1, 2684:6	2433:16	2717:17
2592:21	2361:21	2688:11	2474:23	revisit 2678:2
2599:19	2361:23	2719:13	2477:17	revisiting
respect 2345:22	2388:16	2727:24	review 2338:19	2395:11
2356:21	2416:13	2755:8	2339:8	rgonzales@mo...
2379:17	2462:24	2756:10	2384:17	2332:8
2379:18	2463:19	resulted	2388:20	Rhino 2754:20
2380:8, 2442:7	2464:5, 2464:8	2602:24	2439:5	2755:5, 2755:7
2447:4, 2538:2	2469:13	2671:14	2442:10	2755:18
2557:21	2485:16	resulting	2443:19	2764:17
2558:6, 2558:8	2527:13	2431:4	2467:8	2764:21
2572:11	2563:15	2519:24	2467:12	2764:22
2574:2, 2574:3	2563:23	2604:13	2469:25	2765:2
2575:7	2579:4, 2583:1	2677:21	2470:24	RICARDO 2332:4
2575:13	2588:19	2718:17	2471:12	rich 2394:21
2593:9	2635:18	results 2372:8	2477:7, 2530:2	rich-burn
2713:19	2667:16	2462:13	2530:9	2394:6, 2394:7
2713:23	2682:3, 2685:5	2565:17	2530:10	2394:10
2717:18	2722:1, 2722:5	2566:24	2572:24	2394:21
2726:9	2724:24	2574:12	2572:24	Richardson
2732:14	2725:3	2609:23	2572:24	2759:15
2734:4	2739:17	2644:24	2573:1	rid 2394:2
2734:19	2772:10	2647:19	2601:25	Ridge 2331:10
2740:9	2774:25	2648:6, 2667:8	2748:6	right 2342:21

Volume 8
9/29/2021

EIB Ozone Hearing

2343:14	2483:14	2660:25	2668:23	2411:15
2343:21	2484:2	2661:15	Rights 2757:9	2748:1
2347:2, 2347:2	2485:20	2661:16	2757:10	Roehl 2332:22
2349:24	2487:17	2663:12	2757:15	role 2483:15
2350:7	2489:3	2664:11	righty 2649:10	roll 2473:6
2350:24	2489:16	2664:17	rigorous	rolling 2473:2
2352:21	2492:14	2668:12	2575:17	Romero 2365:23
2353:18	2496:1	2680:12	rise 2353:15	2366:6, 2366:7
2354:5, 2360:6	2496:16	2692:23	2761:1	2373:23
2362:4	2500:14	2693:6	rises 2353:8	2373:24
2363:22	2504:15	2693:22	rising 2498:19	room 2404:3
2364:19	2506:3	2695:7	2777:24	2720:3
2366:9	2508:14	2702:19	2779:23	rooted 2372:1
2366:21	2511:5	2703:20	risk 2369:3	Rose 2332:3
2368:1, 2371:8	2511:17	2704:10	2493:15	2335:9
2377:12	2512:5	2707:22	2525:11	2335:15
2378:17	2512:10	2708:24	2597:4	2336:19
2379:2	2512:20	2709:19	2626:19	2337:18
2382:22	2512:24	2711:1	2662:11	2337:22
2383:6	2513:8	2711:18	2722:4	2343:17
2383:12	2513:17	2714:5	2726:15	2343:18
2383:18	2514:18	2714:24	2726:22	2343:19
2386:15	2515:4, 2529:8	2715:20	2727:3, 2727:6	2349:1
2387:1	2536:22	2716:5, 2716:5	2727:7	2349:12
2387:14	2547:4, 2547:9	2716:9	2727:18	2349:25
2389:24	2562:2, 2562:8	2716:21	2727:22	2350:12
2389:24	2562:23	2717:3	2727:23	2350:15
2390:10	2564:11	2717:24	2738:15	2350:17
2394:1	2567:6, 2568:8	2719:2	2738:18	2352:23
2395:13	2569:15	2723:23	2738:20	2352:24
2396:19	2571:25	2724:9	2738:21	2379:11
2399:14	2571:25	2724:20	2738:22	2379:12
2400:10	2577:25	2727:5	2739:10	2380:7
2402:24	2581:20	2727:11	2740:8, 2745:6	2388:14
2404:9	2582:25	2727:14	2745:10	2388:16
2414:16	2588:6	2729:23	2750:13	2389:7
2416:21	2588:11	2730:18	risks 2626:15	2398:11
2417:20	2590:12	2731:14	2726:24	2398:12
2417:24	2591:1	2732:2	2727:8, 2727:9	2398:13
2420:25	2591:24	2733:20	2727:13	2398:17
2421:22	2591:25	2734:6, 2734:7	2728:7, 2728:9	2404:10
2422:6, 2422:7	2615:1	2735:12	2734:19	2404:11
2422:8	2621:14	2737:11	2734:21	2404:12
2422:21	2628:16	2740:1, 2740:3	2750:5, 2750:6	2404:16
2424:19	2629:10	2741:1	2763:11	2404:19
2424:19	2629:16	2742:13	rivers 2506:13	2405:2
2425:14	2632:3	2743:2	roadmap 2755:18	2405:10
2425:24	2632:15	2760:23	roads 2505:17	2405:16
2426:5	2633:23	2766:8, 2770:5	Robertson	2405:21
2427:12	2634:25	2770:16	2338:15	2406:6
2441:11	2635:14	2772:21	2544:12	2407:21
2443:2	2636:14	2773:20	2551:13	2409:11
2452:20	2636:18	2773:25	2551:22	2413:3
2459:18	2650:10	2774:14	Robin 2340:23	2416:11
2460:23	2654:16	2774:16	robust 2559:22	2416:12
2475:7, 2480:2	2657:10	2774:17	2559:22	2422:17
2480:6	2659:1, 2659:2	2775:8	2586:13	2422:18
2480:20	2659:5	2780:19	2761:13	2423:13
2482:10	2660:19	2780:20	Rocky 2407:5	2423:22
2482:16	2660:21	2782:6	2408:19	2424:10
2483:1	2660:24	right-hand	2411:4	2426:13

Volume 8
9/29/2021

EIB Ozone Hearing

2427:3	2349:12	2685:1	2369:13	2661:10
2446:22	2371:21	2702:17	2373:4	S-E-N-A 2504:13
2446:23	2379:4	2744:23	2376:16	S-H-E-L-L-E-Y
2447:2, 2447:3	2384:19	2775:21	2388:19	2500:11
2447:12	2391:23	2776:1, 2776:2	2396:3, 2401:6	S-T-E-W-A-R-T
2512:14	2392:17	2776:11	2404:5	2661:14
2563:12	2393:24	2776:13	2407:23	S3 2683:12
2563:13	2395:25	2781:24	2419:11	2683:13
2563:14	2396:6, 2396:6	2781:24	2452:10	S3-30 2683:13
2564:6	2396:11	ruled 2418:19	2455:17	S3-35 2683:13
2620:10	2396:13	2419:3	2456:1	sacred 2372:2
2620:11	2397:15	rulemaking	2460:10	sacrifice
2620:13	2397:21	2348:15	2493:8	2373:15
2621:12	2401:15	2354:11	2493:10	safe 2505:22
2713:5, 2713:7	2402:24	2354:15	2494:3, 2494:4	2507:13
2713:25	2403:7, 2408:3	2364:25	2494:5	2628:21
2729:9	2409:21	2365:18	2502:17	2721:16
2729:11	2410:4, 2412:7	2374:23	2502:22	2721:20
2729:17	2415:8	2375:25	2503:1	2724:9
2730:4, 2733:8	2418:18	2376:10	2506:22	2724:25
2733:24	2424:1	2376:13	2507:9, 2551:3	2731:9
2734:7	2428:15	2376:15	2557:23	2731:11
2734:11	2429:23	2391:19	2599:14	Saillan 2331:18
2734:12	2430:2, 2431:7	2395:5, 2400:7	2600:10	2336:15
2735:7	2431:10	2403:3	2601:20	2337:18
2741:19	2432:15	2407:14	2601:20	2337:21
2741:20	2436:2, 2436:9	2407:19	2611:6, 2622:4	2347:1, 2347:9
2766:10	2436:22	2408:1, 2408:7	2622:23	2347:12
2766:11	2436:25	2411:1	2641:17	2347:13
2766:14	2441:10	2411:23	2653:1	2576:7
2770:14	2442:8	2455:24	2662:22	2576:16
2779:3, 2779:4	2445:11	2461:4	2709:1, 2709:2	2577:1, 2577:3
2779:19	2450:23	2463:19	2734:25	2577:7, 2577:9
2779:25	2458:7	2464:23	2739:21	2577:11
2781:14	2459:21	2470:24	2776:8, 2778:2	2577:23
2781:15	2463:3	2471:11	2778:15	2729:9
2781:16	2469:11	2471:16	2779:14	2735:13
2781:17	2471:18	2550:12	ruling 2379:17	2735:14
2782:7	2473:3	2550:13	2379:23	2735:19
Rose's 2771:13	2474:11	2556:18	2380:21	2736:2
2781:6	2474:17	2559:19	2418:10	2737:21
Roswell 2758:22	2498:23	2560:6	2418:11	2737:24
rotate 2766:25	2513:22	2592:18	2419:6	2764:2, 2764:4
round 2607:22	2525:3	2678:1, 2678:9	2480:18	2764:5, 2764:9
route 2534:17	2525:13	2678:10	2484:8	2764:11
routinely	2526:4, 2559:3	2767:12	rulings 2447:22	2764:14
2346:9	2561:6	2767:13	runs 2673:20	2766:6, 2766:9
RPR 2327:21	2561:13	2768:7	2725:12	Saillan's
RR 2339:9	2585:5	2777:12	rural 2369:1	2767:2
2538:15	2587:17	rulemakings	2493:13	sake 2567:2
2538:18	2599:22	2344:3	2662:13	salaries 2506:8
2539:2	2600:13	2391:11	2744:2	sales 2491:3
rule 2338:8	2600:17	2408:5	Russia 2498:4	sample 2674:3
2340:7	2601:17	2633:25	rusted 2555:9	2674:23
2344:21	2622:7	rules 2367:18	rusty 2555:5	2681:10
2344:23	2622:11	2367:21	Rutherford	2687:6
2346:7	2629:9	2368:3	2339:6	San 2329:12
2346:13	2641:24	2368:12		2334:6
2347:19	2641:25	2368:14	S	2339:23
2348:3	2648:11	2368:20		2461:22
2348:22	2663:1, 2663:3	2368:21	S-A-N-D-E-R-S	2497:3

Volume 8
9/29/2021

EIB Ozone Hearing

2646:25	2514:4	2747:7	2434:11	2743:24
2651:5	satisfies	school 2631:10	2463:19	2751:2, 2751:9
2653:18	2779:17	2652:16	2464:2, 2464:9	2754:16
2668:10	satisfy 2641:22	2655:7, 2655:8	2464:12	2763:22
2681:2, 2681:3	2756:24	2746:2, 2746:6	2464:15	2764:3
2681:8, 2684:3	save 2425:7	2746:7	2464:22	screening
2686:23	2597:21	2746:19	2465:13	2456:25
2687:1, 2687:2	saving 2760:19	2750:7	2469:20	2605:2
2690:5, 2698:1	savings 2597:20	2750:16	2470:23	screens 2444:24
2699:4, 2699:9	2599:10	2750:23	2471:10	scroll 2443:4
2699:11	2599:11	schooling	2471:15	se 2399:5
2699:19	saw 2356:19	2368:2	2585:5, 2678:1	seals 2429:1
sand 2407:10	2402:7	schools 2368:6	2713:12	2429:5
2658:11	2447:15	2368:17	2733:7, 2734:5	2429:10
sandbagging	2492:4	2490:19	2734:9	Seattle 2746:17
2354:14	2495:23	2490:21	scoping 2464:17	2746:19
Sanders 2337:14	2621:15	2491:8	SCOTT 2332:10	2747:15
2510:23	2635:5	2506:18	scott.janoe@...	second 2342:25
2511:3, 2511:8	2651:20	2507:12	2332:12	2345:14
2511:11	2651:25	2539:7	scratch 2532:24	2370:2
2661:1, 2661:9	2652:17	2539:21	screen 2342:8	2387:15
2661:20	2655:7	2630:20	2357:17	2387:22
2662:3	2679:13	2663:5	2363:6	2389:24
2663:14	2726:6, 2779:9	2747:21	2365:13	2396:14
Sandoval	say-so 2459:22	Sci 2338:10	2374:14	2403:16
2650:24	SAYER 2333:17	2338:13	2375:13	2439:3, 2503:2
Santa 2328:12	saying 2342:10	2338:16	2378:18	2503:10
2328:18	2343:10	2338:21	2378:19	2517:21
2329:9	2380:20	2338:24	2380:19	2518:8, 2519:2
2329:17	2385:11	2339:15	2386:21	2524:3
2331:14	2405:4, 2460:2	2339:18	2387:12	2526:14
2331:20	2460:22	2339:21	2387:19	2526:21
2332:6	2476:6	science 2391:14	2391:21	2527:25
2332:23	2511:11	2391:15	2398:6, 2405:8	2533:25
2333:19	2710:9, 2726:6	2509:15	2416:11	2541:20
2753:13	says 2474:2	2509:15	2418:3, 2418:7	2541:24
Santiago	2676:14	2549:17	2422:17	2548:14
2392:13	2751:9	2694:11	2442:16	2558:20
2413:20	2755:24	2694:21	2443:25	2594:12
satellite	2756:2	2737:10	2444:25	2645:22
2372:17	2759:21	Sciences	2459:17	2653:11
2438:13	2760:21	2694:12	2482:5	2663:7
2525:9	scale 2567:24	2694:21	2511:21	2670:18
2525:18	2605:13	scientific	2515:22	2679:9
2545:3	scaleable	2471:7	2519:11	2681:22
2557:14	2688:6, 2689:3	2471:13	2523:8	2682:16
2557:17	2689:3	2476:4	2531:15	2687:7
2620:2	scaled 2602:22	2540:18	2560:4	2692:17
2631:12	scales 2409:7	2542:19	2563:12	2692:18
2775:13	schedule 2377:4	2543:12	2563:22	2705:8
2775:16	2385:2	2750:3, 2763:9	2564:12	2716:25
satellite-based	2433:10	scientists	2576:7	2745:1
2338:23	2526:18	2542:8, 2544:6	2590:20	secondary
2543:6	2558:14	2549:21	2591:22	2732:16
satellites	scheduled	2596:12	2605:3	2732:17
2545:19	2589:13	2731:23	2621:15	2732:23
2545:21	schedules	2731:24	2627:2	2733:2
2605:15	2368:17	2737:8	2693:13	2736:24
2605:23	2431:25	scope 2408:7	2693:24	secondly
satisfied	scholar 2746:9	2408:8	2705:19	2352:25
2344:19	scholarship	2408:11	2713:6	2422:25

Volume 8
9/29/2021

EIB Ozone Hearing

Secretary	2375:16	2545:13	2781:13	2618:21
2651:16	2379:7	2545:15	2781:14	2672:16
2653:17	2380:18	2545:16	2782:14	2673:17
2754:25	2380:18	2547:4	seeing 2366:7	2687:17
section 2405:13	2386:20	2547:12	2383:2, 2397:6	2688:19
2405:23	2388:14	2559:15	2409:4, 2414:6	2688:23
2406:3, 2428:8	2389:9	2563:12	2443:7, 2489:3	2689:12
2428:13	2390:12	2564:12	2514:14	2689:17
2428:15	2390:23	2566:19	2521:20	2690:3
2428:17	2391:22	2574:19	2563:21	2691:19
2433:25	2391:25	2576:7, 2576:7	2631:9	2706:9
2434:3, 2434:4	2397:11	2576:10	2658:21	2706:15
2434:7	2398:2	2589:13	2699:23	2719:11
2434:11	2398:11	2590:20	2699:24	semiannually
2434:15	2398:21	2624:1, 2627:2	2700:9	2432:3
2435:1, 2435:3	2399:15	2635:25	2709:24	2618:17
2435:19	2402:16	2647:13	2777:23	2689:22
2438:1	2402:17	2648:6	2780:4	seminar 2747:17
2438:10	2402:19	2648:17	seek 2439:14	Sena 2336:4
2439:23	2404:17	2649:13	seeking 2345:2	2488:21
2440:16	2406:7, 2409:7	2652:25	2377:14	2504:5, 2504:5
2441:10	2411:13	2653:18	2452:21	2504:6, 2504:8
2472:11	2415:5	2655:16	2456:20	2504:12
2473:9	2415:20	2662:22	2641:20	2504:13
2513:23	2416:6	2664:15	seen 2363:5	2504:17
2514:7	2416:11	2664:16	2429:23	2504:19
2524:20	2417:25	2666:21	2430:2, 2451:3	2504:25
2525:20	2418:3, 2420:2	2668:23	2485:22	2505:4, 2508:5
2527:2, 2538:2	2422:17	2670:7, 2671:2	2499:13	Senate 2650:23
2605:21	2423:20	2673:3, 2673:9	2575:5	2662:3
2613:18	2425:22	2674:16	2655:11	senator 2489:2
2639:10	2431:13	2679:9	2728:7, 2760:8	2489:3, 2492:4
2668:21	2441:15	2680:18	sees 2651:23	2492:6
2697:11	2443:13	2682:4	segment 2610:23	2492:25
2717:19	2443:25	2687:13	segments	2495:19
2748:8	2444:4	2693:12	2570:20	2510:11
2748:11	2446:22	2693:14	2676:10	2661:13
2748:24	2451:16	2693:24	selected	2664:7
sections 2343:1	2454:22	2693:24	2645:18	send 2777:2
2430:2, 2434:2	2461:14	2695:20	2679:7	sends 2662:4
2434:16	2478:19	2698:10	selection	senior 2592:20
2714:23	2480:8	2701:10	2631:2	sense 2357:19
sector 2327:4	2480:12	2701:13	self-explana...	2376:3, 2434:8
2340:4	2490:23	2703:12	2434:23	2463:8
2473:14	2494:15	2706:6, 2706:7	self-suffici...	2483:22
2571:22	2495:22	2707:16	2506:20	2487:18
2668:9	2496:2, 2496:6	2713:5	semiannual	2487:19
Sector-Ozone	2504:4, 2506:4	2714:10	2454:11	2569:5
2338:8	2506:4	2716:14	2520:4	2630:19
sectors 2410:2	2507:16	2716:18	2520:19	2641:16
secure 2593:21	2508:6	2716:22	2594:10	2690:10
see 2342:8	2510:24	2729:9, 2742:9	2594:18	2698:12
2343:18	2511:6, 2511:7	2743:24	2601:9	sensing 2542:19
2343:18	2514:22	2751:9	2601:11	2545:9
2357:14	2515:6	2751:16	2602:9	sensitive
2357:22	2515:23	2762:1	2602:17	2354:14
2363:8	2523:7	2762:19	2602:19	2365:3
2370:13	2529:11	2764:1	2603:1, 2603:3	2685:20
2373:22	2541:19	2773:18	2603:9, 2608:8	2720:5
2373:24	2541:21	2773:21	2608:16	sensitivity
2373:25	2542:1	2779:3	2609:12	2675:3

Volume 8
9/29/2021

EIB Ozone Hearing

2675:21	2605:11	2431:11	2541:18	short-term
2677:6	2605:12	2436:24	2541:24	2581:11
2677:10	2605:13	2437:18	2560:9, 2562:4	shortage
2678:3	2762:7, 2769:3	2453:12	2612:25	2440:10
sensory-based	served 2345:12	2455:21	2751:2	2440:13
2562:16	2367:12	2458:8	sharing 2357:18	shorten 2651:13
sent 2481:1	2374:19	2476:10	2387:12	shortened
sentence	2746:14	2484:11	2398:6	2652:19
2681:22	service 2327:22	2513:21	2402:13	shorter 2430:17
sentiment	2330:17	2514:7	2591:22	2605:4
2345:15	2331:2	2520:17	2613:8, 2639:4	shorthand
sentiments	2386:19	2531:1, 2534:2	2649:12	2783:9
2780:18	2387:21	2627:21	2665:11	show 2339:11
separate	2391:3	2646:12	2666:21	2357:18
2518:10	2398:19	2686:25	2763:22	2359:12
2528:21	2398:20	2725:6	she'll 2708:3	2359:19
2614:12	2398:23	2737:18	shed 2770:9	2360:18
2646:22	2398:24	2739:9	2772:2	2363:18
2779:11	2399:1, 2399:3	2739:10	Sheehan 2332:21	2381:25
2779:17	2399:5	2739:14	2513:5	2382:2
separately	2399:12	2771:23	2513:10	2382:19
2597:22	2401:1	sets 2368:21	2513:13	2393:4, 2460:6
separator	2403:13	2432:24	2513:14	2467:20
2540:24	2403:14	2432:25	2513:18	2494:8, 2534:1
2670:12	2407:20	2433:10	2514:10	2540:20
separators	2407:22	2433:13	2514:18	2545:24
2645:14	2407:24	2453:16	2514:20	2553:15
2696:21	2409:13	2475:21	Shelley 2335:22	2562:21
2696:24	2409:20	2476:4	2488:21	2563:23
2697:1	2410:19	2476:16	2500:4, 2500:7	2583:17
Sept 2339:15	2410:20	2476:18	2500:11	2585:10
2340:13	2411:7	2494:4	2500:18	2614:24
September	2412:12	2520:20	2501:3	2615:24
2327:13	2413:5	2530:6	shift 2397:6	2616:12
2364:8, 2379:4	2414:22	2627:25	shifted 2476:21	2618:4
2384:8	2415:21	setting 2342:6	2476:23	2644:20
2384:11	2416:13	2368:20	shifts 2724:7	2687:1, 2687:9
2442:13	2416:17	2494:4	Shimanek	2691:13
2443:3	2416:19	settle 2724:11	2330:10	2724:19
2525:23	2434:6, 2434:9	Settlement	2337:21	2728:17
2526:4	2508:1	2367:13	2342:9	showed 2372:10
2526:13	2535:17	setup 2602:11	2743:11	2404:13
2526:23	2535:21	seven 2358:2	2743:12	2695:12
2526:24	2605:7	2381:12	2743:13	showing 2362:3
2558:21	2605:15	2382:10	2743:22	2546:10
2642:2	2640:25	2592:13	2744:1	2547:5
series 2454:15	Service's	2643:1	2745:23	2547:20
2454:16	2390:20	2720:10	2751:11	2612:5
2473:20	2409:22	severe 2720:4	2751:14	2680:11
2640:9	services 2491:4	sex 2758:5	2763:17	2681:8
2644:14	2754:20	shafts 2555:6	2763:21	2691:19
2757:23	serving 2501:4	Shakes 2522:21	2773:22	2691:20
serious 2495:1	2701:17	shaking 2420:2	2773:23	2691:21
2540:8, 2662:8	session 2488:10	shame 2655:20	2774:2	2692:3
2720:2	2636:5	shape 2631:19	shimantr@law...	shown 2363:18
2722:17	2649:15	share 2387:19	2330:15	2436:5
2758:25	2664:12	2391:21	short 2416:8	2519:11
seriously	sessions	2407:2	2420:8	2540:18
2510:10	2365:19	2442:15	2430:18	2563:17
serve 2354:15	2511:14	2515:22	2693:2	2563:21
2505:22	set 2426:13	2541:8	2723:16	2608:18

Volume 8
9/29/2021

EIB Ozone Hearing

2728:22	2727:13	2565:9	2697:18	2555:13
shows 2358:18	2756:18	2566:21	2697:21	2557:4, 2557:7
2360:13	2775:6	2570:16	2700:25	2557:15
2360:21	similarities	2573:10	2701:2, 2701:5	2557:18
2519:8, 2616:3	2393:9	2573:17	2701:10	2557:19
2668:16	2393:23	2575:3	2701:15	2557:21
2728:17	similarly	2579:13	2701:19	2557:23
SHPALL 2333:12	2555:9	2586:17	2701:20	2558:1, 2558:6
shpallc@gtla...	2633:24	2589:12	2705:4	2558:11
2333:16	2671:14	2593:16	2706:13	2566:2
shutdown	2680:3, 2765:1	2594:9	2718:13	2566:16
2437:11	simple 2361:21	2594:12	2723:24	2566:20
2440:5	simplified	2594:18	2724:12	2575:5
shutting 2507:2	2672:20	2596:22	2728:23	2579:16
2507:2	simply 2351:24	2599:21	2753:6	2581:1
sick 2499:15	2352:4, 2352:7	2600:18	2753:16	2594:23
side 2497:6	2364:5	2600:21	site-level	2595:14
2505:8	2364:10	2602:8, 2603:6	2542:21	2596:24
2668:23	2364:14	2603:9	2544:4	2598:5, 2598:7
2669:7	2474:22	2606:21	2554:13	2599:9
Sierra 2329:13	2485:3	2606:21	2580:1	2600:14
sight 2430:5	2518:25	2606:22	2602:15	2600:18
2644:15	2562:24	2606:24	2603:2	2600:20
signed 2662:17	2567:5	2608:5	site-wide	2601:3, 2601:8
2759:7	2571:23	2612:22	2719:12	2601:10
2759:14	2682:13	2618:18	sites 2339:14	2601:12
significance	2688:9	2618:20	2339:20	2601:19
2761:3	simulated	2624:12	2432:1	2603:3
significant	2727:18	2624:18	2465:25	2603:10
2384:19	Simultaneous	2624:22	2525:15	2603:11
2412:2	2345:10	2626:13	2525:19	2603:24
2414:24	2348:14	2626:18	2525:21	2604:14
2428:23	2403:4	2644:3, 2645:9	2525:21	2604:15
2507:2, 2550:9	2404:18	2645:11	2526:8	2605:11
2641:10	2404:21	2645:12	2526:16	2605:13
2745:3	2406:4, 2417:3	2645:14	2527:17	2608:7, 2608:8
2769:11	2417:16	2646:17	2539:6	2608:10
significantly	2450:24	2646:20	2539:11	2608:13
2596:12	2460:15	2647:1	2539:19	2608:15
2605:17	2474:12	2648:23	2539:25	2608:21
2606:14	2475:14	2668:5, 2669:7	2540:1, 2540:2	2610:2, 2610:7
2634:14	2475:17	2669:20	2540:12	2610:10
similar 2346:20	2478:11	2669:23	2544:13	2613:3, 2621:3
2393:8, 2396:6	2618:25	2670:15	2544:23	2646:22
2407:20	2702:22	2671:12	2544:24	2663:5, 2666:6
2408:4	2731:21	2671:13	2545:1	2671:7, 2671:7
2408:13	single 2686:25	2673:16	2546:14	2673:15
2408:17	2700:20	2674:18	2548:16	2673:24
2409:3, 2434:1	single-pollu...	2675:11	2548:18	2673:25
2455:21	2634:1	2675:17	2548:20	2674:1
2528:24	sir 2643:12	2675:18	2548:24	2674:19
2534:21	2670:4	2685:18	2548:25	2674:21
2543:18	2707:23	2686:12	2549:1, 2551:4	2674:22
2559:17	2708:11	2688:18	2551:8	2674:23
2585:15	2764:8	2696:18	2551:14	2675:10
2603:18	Sisk 2332:22	2696:18	2553:3	2675:15
2606:22	site 2439:10	2696:20	2553:13	2675:16
2622:24	2525:20	2696:22	2554:16	2676:4, 2677:5
2679:13	2533:21	2696:25	2554:21	2679:13
2679:20	2545:15	2697:4	2554:24	2681:9, 2685:8
2679:25	2557:24	2697:15	2555:3, 2555:5	2685:8

Volume 8
9/29/2021

EIB Ozone Hearing

2685:13	2400:12	2380:8, 2383:1	2499:18	2643:10
2687:2, 2687:2	2403:22	2383:2, 2383:6	2499:22	2643:15
2687:3	sizes 2403:23	2383:9	2499:23	2643:21
2688:17	2725:16	2383:10	2507:3, 2507:5	2643:25
2688:20	skewed 2548:15	2383:23	2579:12	2649:3, 2649:8
2689:9	skies 2656:2	2386:5	2607:10	2664:14
2689:11	2656:3	2386:12	2638:8	2664:16
2689:13	2656:15	2422:9	2638:18	2665:1, 2665:7
2689:13	skill 2559:11	2480:16	2648:7, 2673:5	2666:14
2689:13	skin 2658:15	2481:2, 2481:4	2680:7	2668:12
2689:14	skip 2453:3	2481:5	2686:16	2668:15
2689:16	2667:25	2483:12	2686:21	2669:3
2689:18	skipping	2485:13	2701:8	2669:11
2689:25	2756:13	2485:14	smaller 2395:3	2679:5
2691:14	Sky 2334:5	2485:21	2400:1	2679:18
2691:15	slide 2386:9	2486:20	2400:12	2680:21
2691:15	2386:10	2486:24	2457:13	2681:21
2692:2, 2692:2	2392:8, 2435:5	2487:5	2584:24	2690:23
2692:16	2435:14	2487:11	2673:20	2693:1
2692:18	2436:12	2518:12	2673:20	2693:12
2696:24	2515:25	2521:7, 2541:9	2701:18	2693:16
2697:1	2518:15	2541:18	2704:12	2693:20
2701:20	2521:10	2541:21	smeared 2725:20	2694:3
2706:15	2545:24	2542:2	2726:1	2695:19
2706:16	2606:25	2547:22	smell 2430:5	2696:5
2709:7, 2709:9	2618:3	2643:2	smelled 2651:20	2696:15
2709:13	2619:21	2643:11	Smith 2339:17	2697:12
2719:11	2643:5, 2665:8	2644:1	2694:20	2697:25
2719:15	2665:11	2690:21	2695:1	2699:2, 2700:4
2720:15	2668:12	2692:8	Smitherman	2700:22
2722:19	2669:3, 2669:8	2695:12	2337:4	2702:2
2722:24	2669:8	2702:6	2355:13	2702:12
2723:16	2669:12	2706:11	2356:11	2702:15
2725:14	2670:1, 2670:2	2756:13	2363:19	2702:20
2725:16	2671:16	slight 2672:18	2379:21	2702:23
2725:18	2672:22	slightly	2380:25	2703:9
2725:19	2679:4, 2679:6	2476:21	2383:23	2704:15
2725:21	2679:18	2619:4, 2689:3	2384:4	2705:25
2728:19	2680:6, 2687:8	slip 2547:13	2420:14	2706:4
2728:20	2687:9	slot 2374:7	2420:18	2706:11
2730:14	2690:22	slow 2595:8	2421:6	2706:24
2730:16	2691:3, 2691:4	2745:20	2462:16	2707:5
2749:5	2691:4	2751:5	2462:20	2707:11
2749:18	2691:10	2781:18	2462:24	2707:16
2752:11	2691:11	slower 2541:12	2480:13	2707:23
2753:23	2691:17	slowly 2539:15	2480:15	2708:2, 2708:7
2763:6	2691:18	2724:11	2483:10	2709:14
sitting 2419:19	2691:23	small 2447:5	2483:11	2710:10
2523:14	2707:2	2447:6, 2491:3	2484:25	2710:19
situation	2751:16	2497:3, 2497:9	2485:9, 2512:4	2711:3, 2711:8
2437:9	2752:7	2497:12	2512:6	2711:9, 2712:4
2497:14	2754:16	2497:13	2578:15	2714:5
2659:2, 2700:3	2757:9	2498:22	2578:19	2744:25
situations	2760:19	2498:22	2635:8	2775:25
2535:21	slides 2354:22	2499:3, 2499:6	2636:19	2776:23
six 2367:12	2359:5	2499:9	2636:22	2778:7
2381:12	2359:20	2499:10	2637:6, 2637:8	2778:10
2382:10	2362:9	2499:11	2637:12	Smitherman's
2658:10	2378:23	2499:13	2637:18	2377:10
2673:6, 2673:7	2378:25	2499:14	2637:20	2377:15
size 2400:1	2379:19	2499:15	2643:3	2381:4

Volume 8
9/29/2021

EIB Ozone Hearing

2383:14	2481:13	2464:24	2340:12	2725:20
2384:12	2482:3, 2482:6	2474:24	2346:12	2725:22
2385:9, 2386:8	2482:7	2477:10	2370:2	2753:23
2421:17	2482:17	2528:14	2400:12	2768:16
2463:5	2482:19	2533:3	2410:2	2769:10
2484:10	2483:17	2538:11	2428:23	2776:16
2484:15	2483:18	2539:12	2503:10	2776:18
2485:6, 2486:5	2485:20	2556:25	2517:19	2778:16
2511:23	2714:2	2576:19	2554:2	south 2407:4
2642:21	Soloria's	2606:14	2555:21	2407:12
2692:8	2483:15	2606:25	2573:14	2753:21
2709:22	solution	2608:21	2573:16	2753:24
2710:1	2708:23	2612:9	2574:15	2765:17
2712:13	solutions	2613:18	2580:10	southeast
2713:9, 2748:9	2491:22	2616:6	2618:22	2407:8, 2407:8
2777:19	2507:22	2616:14	2618:24	2700:7
smog 2414:4	2586:16	2622:10	2633:19	Southeastern
2651:3, 2651:7	solve 2473:8	2622:21	2653:12	2490:17
2651:10	solvents 2753:7	2632:19	2681:5	2554:1
2652:5	somebody 2530:6	2632:21	2724:13	Southern 2657:1
2655:17	2632:21	2649:2, 2657:7	2725:22	2657:19
sniff 2449:4	2659:22	2666:17	2725:24	2658:20
2449:5	something's	2669:9	sources 2346:13	southwest
so-called	2408:8	2669:11	2369:17	2407:12
2486:10	somewhat	2672:5, 2695:1	2412:8, 2429:1	2407:14
social 2371:25	2599:13	2706:25	2434:3, 2434:9	2765:9, 2767:4
2749:16	soon 2395:6	2712:1	2458:12	space 2338:13
society 2368:5	sooner 2415:25	2714:10	2458:19	2531:1
soft 2643:19	2431:4	2714:23	2469:4	2568:14
software 2388:1	2557:24	2715:15	2470:19	spans 2391:5
solar 2334:2	sophistically	2718:6, 2736:1	2471:14	2411:12
2334:4	2606:14	2782:15	2472:20	speak 2343:7
2490:25	sophisticated	sort 2353:21	2494:13	2346:5
2656:3, 2656:4	2345:6	2353:23	2502:17	2350:15
2656:7	sorry 2344:6	2361:9, 2425:8	2545:10	2356:14
2657:21	2347:8, 2349:2	2472:14	2545:12	2381:15
2657:22	2350:1	2627:24	2545:22	2411:6
2657:23	2362:19	2629:13	2546:3, 2546:6	2432:13
2658:2, 2658:3	2363:25	2631:18	2546:8	2495:12
2658:5, 2659:8	2364:3	2658:8, 2679:9	2546:17	2495:17
2659:8	2375:11	2686:14	2548:11	2502:13
2659:20	2380:1, 2386:1	2687:9	2548:16	2507:25
2659:21	2387:22	2709:16	2548:18	2517:4, 2528:9
2660:15	2388:6	2724:11	2548:20	2528:11
Solaris 2333:9	2397:19	2729:20	2551:24	2532:11
sole 2460:3	2405:25	2758:10	2555:12	2532:11
solely 2348:23	2417:2	2760:19	2559:14	2532:17
solicitors	2425:16	sorting 2394:18	2570:13	2532:18
2399:6, 2399:9	2425:17	sound 2342:19	2570:19	2533:17
solid 2351:16	2438:18	2420:16	2571:11	2539:14
2506:2, 2755:5	2438:25	2430:5	2575:5	2541:12
2755:6	2442:18	sounds 2420:3	2577:17	2574:2
2755:11	2443:1	2420:22	2579:10	2582:21
2755:14	2443:11	2463:17	2615:21	2585:1
solidly 2721:4	2444:11	2481:24	2633:16	2643:20
Soloria 2328:10	2444:12	2484:23	2641:9	2665:9
2417:25	2444:24	2487:1	2645:16	2666:25
2418:3, 2418:4	2453:1	2568:21	2645:16	2667:1, 2672:5
2419:24	2457:11	2643:7	2645:23	2699:18
2420:5	2462:17	source 2339:11	2692:19	2768:21
2420:15	2462:22	2340:5	2721:7	2773:10

Volume 8
9/29/2021

EIB Ozone Hearing

speaker 2342:6	2411:7	2723:21	sprung 2361:8	2767:19
2665:22	2473:25	Spending	square 2630:22	2769:7
speaking	2486:25	2368:10	2630:23	2769:24
2367:10	2520:2	spent 2345:13	srb@modrall.com	2770:11
2381:23	2532:10	2503:17	2332:24	2771:23
2461:11	2539:24	2509:2	ss 2783:2	2772:5, 2772:6
2485:9	2553:5, 2561:7	2592:13	St 2328:18	2772:18
2485:12	2563:15	2726:19	stack 2350:3	2772:19
2497:8	2600:17	Sperling	staff 2331:18	2772:22
2523:25	2614:16	2332:22	2395:9	standards
2582:22	2622:6, 2673:4	spinning	2505:22	2340:4, 2340:5
2620:22	2684:3, 2699:3	2443:23	2662:4	2340:12
2663:13	2699:4, 2699:5	spirit 2519:17	2755:20	2346:12
2694:18	2745:9	spoke 2355:20	stage 2617:2	2392:11
2745:19	2747:23	2435:4	2728:9	2392:21
speaks 2600:11	2748:9, 2755:5	2568:18	stages 2679:14	2393:3
specialist	2769:14	2652:8	2698:18	2393:10
2330:18	2772:7	2719:19	stake 2392:17	2393:11
2391:4	2779:20	spoken 2643:20	2499:25	2393:12
specialty	specifications	sporadically	2501:15	2393:13
2592:9	2436:22	2711:12	stakeholder	2393:19
species 2719:24	2448:21	spots 2638:19	2407:25	2394:14
2728:21	specificity	2736:12	2432:23	2398:4
specific 2346:1	2666:3	spreadsheet	2471:7, 2476:4	2399:25
2362:1, 2386:5	specifics	2362:22	2476:6	2403:11
2394:22	2655:4	2363:3	2476:11	2408:4
2410:18	specifies	2363:12	stakeholders	2434:20
2435:2, 2437:8	2435:21	2383:16	2453:17	2473:6
2456:23	2436:16	2462:20	2471:6	2517:20
2457:5	specify 2420:8	2477:4, 2477:6	2475:22	2517:22
2468:11	2435:9, 2435:9	2570:1, 2602:6	2524:25	2517:22
2468:12	speed 2566:19	2603:13	stamp 2437:14	2718:20
2473:13	2595:10	2635:5	stances 2407:20	2720:12
2521:8, 2573:2	2723:7, 2724:1	2638:12	stand 2433:25	2733:4
2583:22	2724:16	2680:9	standard 2346:9	2734:15
2590:3, 2596:6	speeds 2723:11	spreadsheets	2390:16	2736:7, 2736:8
2634:15	2724:10	2354:22	2396:17	2736:11
2647:9	2724:19	2359:3	2396:20	2737:9
2667:10	spell 2366:17	2359:21	2396:21	2737:14
2667:18	2371:3	2359:22	2397:25	2761:10
2668:7, 2668:8	2390:13	2363:14	2403:20	2768:14
2668:10	2489:12	2363:20	2431:17	2769:18
2675:23	2492:9	2375:20	2431:21	2771:24
2676:16	2496:12	2377:11	2454:4	2772:9
2677:24	2500:10	2377:13	2454:10	standing
2681:4	2504:11	2378:23	2459:10	2493:24
2681:12	2508:11	2379:1, 2380:5	2531:7	standpoint
2682:14	2590:21	2382:2	2617:10	2708:16
2697:25	2650:4	2382:18	2634:5, 2634:7	Stanford
2698:1, 2698:1	2654:12	2383:4, 2383:8	2671:25	2330:13
2722:18	2657:5, 2661:7	2383:13	2681:18	2592:9, 2630:5
2722:19	2742:21	2384:10	2683:22	Star 2339:4
2722:21	spelled 2742:24	2386:6	2732:5, 2732:6	2346:19
2722:22	spelling	2386:13	2732:10	stark 2393:25
2725:24	2390:17	2454:14	2732:16	start 2343:16
2779:18	spend 2354:21	2454:18	2732:17	2367:5
specifically	2480:21	2462:11	2732:23	2371:16
2348:20	2572:20	2462:15	2733:3	2422:10
2355:25	2574:19	2485:3, 2692:9	2733:12	2480:16
2363:2, 2373:5	2686:13	2692:10	2734:4	2490:5
2378:22	2723:20	spring 2663:2	2734:17	2492:22

Volume 8
9/29/2021

EIB Ozone Hearing

2496:24	2506:21	2471:25	2367:11	2678:22
2500:22	2507:9	2475:15	2369:12	2679:19
2504:23	2507:12	2482:19	2472:23	2689:20
2508:22	2508:2, 2518:9	2482:22	2493:22	2689:21
2539:14	2519:9, 2521:4	2485:20	2597:15	2697:6
2639:3	2528:11	2550:21	2598:19	statistical
2639:10	2542:21	2561:8, 2563:3	2598:23	2646:5
2650:18	2543:13	2589:9	2611:20	2646:10
2654:24	2555:4, 2555:5	2605:10	2612:2, 2612:8	2646:15
2657:13	2579:25	2719:9	static 2707:20	2646:16
2658:16	2580:4	2719:22	stating 2763:8	statistically
2659:11	2592:15	2750:2, 2768:8	station 2442:1	2571:6, 2668:2
2659:25	2600:6	2775:25	2517:17	2728:25
2660:16	2604:19	statement	2518:17	statistics
2660:16	2624:19	2364:6	2644:4, 2644:5	2501:18
2661:24	2625:3	2390:15	2648:24	status 2451:5
2665:24	2634:15	2390:22	2648:25	2530:14
2666:5	2637:18	2392:25	2683:8	2530:21
2675:10	2642:9, 2643:4	2413:15	2683:10	2535:6
2675:16	2647:1	2414:2, 2459:9	2683:15	2587:10
2698:7, 2764:4	2650:23	2470:22	2683:18	2714:12
started 2375:21	2656:9, 2656:9	2472:22	2684:5	statute 2733:11
2509:8	2656:12	2561:12	2684:10	2746:25
2591:21	2668:15	2561:16	2684:14	2757:17
2659:20	2668:16	2561:19	2685:22	2757:22
2689:24	2678:24	2564:1	2686:11	2757:24
2700:9	2682:10	2661:11	2697:7	2758:11
2700:11	2682:21	2662:6	2756:22	2758:13
starting	2683:2	2709:23	stations 2432:6	2758:18
2399:22	2699:23	2710:1, 2730:7	2432:7, 2442:7	2768:19
2532:24	2700:8, 2719:7	2776:3	2445:8, 2446:3	2778:3
2672:25	2732:9	2777:22	2474:6	2779:13
state 2327:1	2733:11	statements	2517:11	statutes
2347:20	2734:3	2351:23	2518:4, 2518:6	2353:10
2367:25	2734:17	2354:24	2518:16	2754:15
2368:7	2744:5, 2744:7	2381:18	2519:24	statutory
2368:10	2745:11	2381:19	2520:5	2458:25
2368:14	2745:23	2642:15	2520:14	2755:13
2368:20	2746:11	states 2338:13	2520:18	2762:6
2372:14	2756:19	2339:14	2520:24	stay 2658:15
2372:15	2759:4	2339:20	2546:16	2663:24
2391:18	2760:20	2340:18	2548:13	2718:18
2396:10	2760:21	2354:23	2579:16	staying 2716:2
2401:13	2761:11	2368:22	2579:21	2771:10
2401:14	2764:25	2391:6	2579:24	steal 2630:12
2401:19	2767:16	2393:10	2580:9	steam 2640:25
2407:9	2768:19	2411:1, 2412:7	2580:11	stem 2589:7
2407:12	2769:5, 2778:2	2434:13	2580:24	stems 2457:14
2458:12	2779:12	2445:15	2581:4, 2581:8	step 2645:10
2467:14	2779:23	2465:25	2593:11	2645:22
2470:2, 2473:3	2783:1	2471:18	2594:24	2660:13
2475:16	state's 2506:23	2494:6	2609:4, 2609:6	2723:13
2475:18	2507:8	2598:18	2609:7	stepped 2511:4
2477:3	2597:17	2652:3, 2658:1	2609:11	steps 2389:18
2477:21	State/Depart...	2658:2, 2659:2	2609:16	2660:16
2483:11	2683:14	2721:20	2610:3, 2610:8	2685:15
2483:12	State/DOE	2751:18	2610:11	stepson 2655:10
2491:7, 2491:9	2682:16	2757:18	2610:22	2658:11
2493:23	stated 2349:15	2778:15	2646:23	Stern 2488:21
2494:4, 2502:4	2449:14	2778:19	2678:17	2504:3, 2504:4
2503:22	2465:5	statewide	2678:19	Stewart 2661:14

Volume 8
9/29/2021

EIB Ozone Hearing

Stewart's 2662:4 sticking 2780:13 stinks 2702:13 stipulated 2412:7 2781:22 stool 2705:9 stop 2398:6 2562:11 2613:8 2666:21 2681:21 2763:22 stopping 2649:4 2649:9 2649:11 straight 2672:15 straightforward 2350:5, 2645:8 2674:4 strategy 2437:24 2439:13 stream 2616:12 streamline 2514:2 streamlining 2519:17 Street 2329:4 2329:20 2331:9 2331:13 2331:19 2332:11 2333:5 2333:13 2333:23 strength 2348:23 2561:19 strengthen 2367:20 2369:24 2369:25 2373:10 2493:9 2494:22 2503:8 2506:23 2653:9, 2663:9 strengthened 2510:15 strengthening 2510:18 stresses 2429:7 stricter 2407:22 strike 2343:1	2343:4, 2351:1 2354:7, 2375:6 2376:3 2379:15 2476:18 2709:10 2776:20 striking 2484:9 stringent 2393:12 2393:13 2393:14 2407:22 2445:24 2446:11 2449:8 2517:23 2625:21 2626:1 2728:18 2732:10 2733:3 2767:18 2769:17 2769:22 2770:12 2771:14 2771:17 2778:2, 2779:8 2779:22 stripper 2611:5 2611:10 2611:17 2611:20 2611:22 2612:1, 2612:6 2612:13 2612:21 2612:23 stroke 2597:4 strong 2368:20 2369:13 2369:14 2369:15 2369:21 2373:2, 2494:4 2494:11 2494:18 2503:2 2510:13 2653:1, 2653:5 2663:1 stronger 2373:7 2503:22 strongest 2502:9 strongly 2348:4 2394:13 2396:12 2397:15 2540:14	struck 2363:1 2413:16 2434:25 2698:14 2761:19 structure 2412:19 2527:22 2679:20 2680:1 structured 2587:8 structures 2730:22 2775:2 struggle 2457:20 STUART 2332:21 stuck 2540:24 Student 2330:8 2330:9 2330:10 students 2501:10 2652:17 2652:17 studied 2556:2 studies 2432:23 2433:5 2433:20 2466:18 2466:22 2467:4, 2471:7 2471:9 2471:13 2540:18 2541:5 2541:15 2547:25 2547:25 2549:19 2551:10 2551:21 2553:14 2555:1 2555:18 2555:19 2556:9 2556:12 2564:20 2569:2, 2573:6 2574:1 2579:15 2579:23 2582:13 2585:18 2596:4, 2629:3 2675:12 2722:11 2738:16 2738:19	2738:20 2738:24 study 2375:22 2376:25 2465:23 2466:6, 2466:8 2467:8 2467:12 2467:15 2467:17 2467:17 2468:1, 2543:5 2543:18 2551:23 2553:18 2554:10 2554:24 2564:25 2565:13 2566:1, 2566:7 2566:15 2567:11 2568:13 2569:18 2571:10 2571:14 2572:10 2574:2 2578:15 2578:25 2579:25 2604:23 2646:5, 2647:2 2675:14 2676:18 2676:20 2676:25 2678:20 2678:24 2681:13 2681:14 2681:14 2682:5, 2682:9 2682:10 2682:11 2682:16 2682:22 2683:2 2683:15 2683:23 2722:14 2722:15 2722:20 2723:14 2723:25 2725:8 2725:12 2728:3 2728:16 2728:22 2729:25	2730:5, 2741:6 2741:9 2741:11 study-derived 2683:20 stuff 2457:21 2712:14 subject 2342:24 2345:7, 2349:4 2349:17 2384:16 2385:19 2395:25 2396:2 2396:11 2397:21 2401:6 2401:14 2403:11 2423:6 2423:10 2424:1 2426:10 2433:18 2434:4, 2434:6 2434:18 2434:21 2436:2, 2456:2 2457:25 2472:23 2485:7 2538:20 2538:24 2551:4, 2553:5 2557:5 2561:24 2572:23 2598:6, 2604:5 2640:9, 2676:2 2729:14 2733:16 2762:20 2765:20 2781:23 subjected 2757:21 subjecting 2758:3 2759:12 subjective 2456:24 submit 2444:19 2477:5 2516:14 2552:7, 2593:2 2744:12 submittal 2526:23 2528:25 submittals 2348:12
--	---	---	---	--

Volume 8
9/29/2021

EIB Ozone Hearing

2349:5	2368:16	2627:10	2451:14	2444:18
2349:18	successive	2627:20	2482:3	2445:1, 2476:5
2388:13	2704:19	2627:23	2519:14	2477:25
2388:19	suddenly	2628:7	2549:18	2493:6
2388:21	2344:23	2628:16	2558:22	2493:24
2388:25	2680:23	2628:23	2559:21	2499:12
2423:11	suffer 2509:20	2629:14	2563:6	2499:14
2424:17	2752:24	2632:18	2610:16	2499:17
2735:11	suffered	2632:20	2611:12	2499:19
2781:20	2503:20	2633:7, 2633:9	2638:23	2499:19
2781:25	suffering	2633:12	2639:1	2499:23
submitted	2502:3	2634:6	2642:17	2501:8
2432:21	suffice 2777:21	2634:10	2690:19	2506:15
2477:9	sufficient	2634:16	2728:14	2506:16
2522:15	2755:13	2634:19	2763:18	2514:7, 2528:7
2524:8	2768:25	2696:6	summed 2646:16	2592:18
2528:24	2777:23	2710:12	summer 2748:1	2607:25
2538:1	sufficiently	2711:1	sunburn 2652:6	2610:6, 2628:5
2560:13	2345:6	2711:20	2719:23	2651:18
2599:17	2433:14	2712:9	sunny 2699:21	2652:13
2604:8	suggest 2350:9	2738:11	super 2697:9	2663:2, 2685:7
2606:18	2551:21	2739:16	2728:14	2716:2, 2718:5
2614:11	2612:14	2740:12	super-emitters	2745:2
2619:5	2621:11	2771:5	2545:4	supported
2744:24	2709:6	2771:12	2548:21	2471:8
2744:24	2728:24	2772:10	2548:22	supporting
submitting	suggested	2773:2	2550:3	2381:19
2744:8, 2744:9	2418:17	2780:10	2617:20	2471:9
subparagraphs	2418:22	Suina's 2780:18	2617:23	2501:11
2435:8	2423:14	Suite 2327:23	2617:25	supportive
2435:20	2640:11	2328:23	super-emitting	2520:25
2436:24	2640:24	2329:5	2549:1	2527:16
subpart 2340:6	2642:3	2331:10	Superfund	2644:11
2340:13	2648:20	2331:14	2746:25	2715:13
2448:18	suggesting	2331:20	2753:6	2715:17
2449:5	2769:25	2332:17	2753:16	2716:13
Subparts 2448:6	suggestion	2333:6	2753:23	supports
2448:24	2364:12	2333:13	Supervising	2499:11
subsequent	2376:22	2333:18	2330:11	2505:24
2580:3	2389:19	2333:23	supervision	2505:24
subsequently	2420:6, 2553:3	sulfide 2495:5	2694:10	2505:25
2393:4	2639:12	2702:10	supplemental	2525:6, 2527:1
2557:25	2777:20	sum 2374:13	2676:20	2544:25
subsidiaries	suggests	2375:17	2683:15	2577:20
2333:2	2690:17	2600:5	supplied	2644:2, 2688:4
substantial	SUINA 2328:5	2605:24	2616:11	2715:22
2458:16	2377:22	2679:24	supply 2338:10	2775:3
2540:22	2406:20	summarize	2498:16	suppose 2550:9
2554:8	2407:2	2392:8, 2431:6	2548:9	supposed 2585:5
2555:12	2407:16	2432:16	2584:15	Supreme 2754:25
2705:6	2408:14	2481:8	2639:21	sure 2362:8
2750:12	2409:9, 2410:5	2516:23	2682:21	2363:5, 2378:6
2779:13	2410:7	2524:18	supplying	2383:21
substantially	2419:23	2539:4, 2558:8	2361:4	2384:2, 2389:1
2572:5, 2758:6	2420:15	2593:14	support 2340:5	2390:7, 2392:1
substitute	2421:11	2594:4, 2718:2	2340:11	2397:11
2559:8, 2561:8	2421:14	summarized	2367:17	2401:25
successful	2479:1, 2522:3	2482:8	2380:14	2402:22
2506:24	2531:25	2553:19	2391:23	2403:16
2705:16	2582:7	summary 2340:16	2420:16	2413:16
successfully	2582:24	2441:10	2420:23	2421:19

Volume 8
9/29/2021

EIB Ozone Hearing

2424:24 2426:2, 2427:5 2443:2 2467:15 2469:18 2470:20 2500:11 2507:13 2533:25 2547:21 2569:24 2581:1 2581:17 2583:11 2587:1 2587:12 2595:9, 2602:4 2611:14 2620:8 2629:18 2630:25 2635:6 2640:10 2640:12 2643:14 2660:2, 2665:8 2666:25 2667:18 2696:10 2705:10 2709:12 2712:6, 2714:2 2714:7, 2715:9 2718:5 2722:13 2740:25 2765:3 2768:21 2773:18 surface 2701:21 2725:13 surgery 2395:10 surprise 2354:11 2354:15 2360:9 2360:24 2361:6, 2365:4 2384:14 2385:4 2418:13 2560:18 2571:5 surprised 2376:11 2376:24 surprising 2376:18 2377:14 2384:25 2385:16	2560:23 surrebut 2362:1 surrebuttal 2343:5, 2354:8 2357:9 2357:11 2359:4, 2359:5 2360:5 2361:10 2375:7 2376:19 2379:24 2385:13 2385:16 2386:5 2387:20 2392:6, 2393:6 2394:12 2415:21 2417:7 2418:12 2419:9 2519:19 2519:20 2558:23 2560:13 2560:22 2610:18 2642:15 2642:21 2643:11 2665:8 2665:25 2667:23 2729:6, 2730:9 2778:23 surrounds 2491:6 survey 2338:23 2340:18 2372:9 2430:16 2432:8, 2436:4 2436:17 2438:13 2449:20 2452:25 2453:5, 2453:7 2545:25 2546:10 2546:10 2578:20 2579:11 2602:11 2604:16 2604:18 2607:7 2607:21 2627:18 2647:10 2678:6	2684:13 2684:21 2684:22 2685:6 2685:10 2685:10 2685:17 2685:19 2685:19 2685:20 2685:23 2685:24 2686:4, 2686:5 2686:6 2686:16 2686:18 2688:6, 2688:8 2688:12 2698:3, 2698:4 2704:19 2707:7, 2777:2 2777:8 surveyed 2432:2 2604:15 2605:9, 2676:1 surveying 2578:17 surveys 2430:21 2435:25 2518:21 2525:9 2542:24 2542:24 2545:25 2546:5 2546:23 2547:3, 2547:8 2547:10 2575:24 2580:8 2585:18 2586:15 2604:13 2605:3 2605:22 2644:8 2644:13 2644:18 2644:19 2647:21 2647:22 2672:13 2675:15 2677:14 2684:18 2688:10 2688:11 2689:2, 2691:6 2705:8 2707:17 swap-out	2523:15 SWD 2333:9 swear 2366:22 2371:9 2489:17 2492:15 2496:17 2500:15 2504:16 2508:15 2537:21 2591:2 2650:11 2654:17 2657:11 2661:17 2743:3 Swift 2332:16 2335:10 2399:15 2399:16 2399:17 2399:19 2399:20 switched 2475:2 switching 2659:25 swore 2386:24 sworn 2367:2 2371:13 2386:23 2387:7, 2428:3 2490:2 2492:19 2496:21 2500:19 2504:20 2508:19 2515:17 2524:14 2537:12 2591:7 2637:14 2650:15 2654:21 2657:16 2661:21 2665:3, 2717:8 2743:8 2774:20 sympathize 2708:21 Synthesis 2339:14 synthesized 2469:12 system 2375:9 2490:23 2495:10 2694:12 2694:20	2704:21 systemic 2458:18 systems 2429:10 2501:7 2694:21 T T-H-O-M-S-O-N 2366:19 table 2340:8 2340:10 2350:17 2354:18 2359:6 2363:20 2395:21 2396:22 2401:4, 2401:4 2647:9 2670:25 2672:9, 2682:4 2683:8 2683:21 2686:20 2706:19 tables 2393:2 2402:1, 2463:3 2463:6 2463:10 2463:12 2485:24 2638:9 2647:10 2679:7 2679:10 2683:12 2692:12 2695:11 2712:14 2712:19 tabular 2377:11 2691:12 tabulate 2673:12 tabulation 2673:22 tag 2439:20 2640:1, 2640:2 tagging 2452:16 tailor 2486:25 taint 2427:9 take 2350:17 2350:20 2372:19 2378:4 2384:24 2388:3, 2398:5 2416:23 2417:9
---	---	--	--	--

Volume 8
9/29/2021

EIB Ozone Hearing

2418:23	2366:4, 2366:4	2738:21	teachers	2619:22
2419:2, 2420:8	2368:2	2740:9	2490:19	2619:24
2422:8	2374:17	2764:17	2506:16	2620:1, 2620:3
2424:24	2397:18	talking 2377:18	teaching 2747:8	2703:10
2425:3	2411:2	2379:20	2747:13	2705:19
2438:12	2434:16	2405:7, 2463:7	team 2464:20	technology
2438:12	2465:6	2521:7	2523:15	2346:2
2458:25	2488:24	2541:14	2572:25	2346:23
2465:7	2488:25	2542:4	2722:22	2430:24
2470:14	2588:20	2542:15	Teams 2411:9	2438:14
2471:12	2588:22	2543:2, 2544:3	technical	2456:23
2481:14	2599:16	2544:10	2340:5	2491:18
2485:7	2602:15	2569:9	2340:11	2507:17
2488:15	2625:14	2569:24	2351:2	2523:16
2495:4	2649:21	2585:17	2351:14	2527:6
2502:15	2649:22	2586:20	2352:15	technology-b...
2505:19	2783:7	2627:14	2374:9	2457:4
2513:10	2783:12	2633:1, 2633:2	2374:18	teens 2367:14
2514:23	takes 2604:21	2655:4	2387:16	telephone
2517:21	2630:5	2680:22	2390:18	2653:24
2531:1, 2531:4	2659:12	2710:7, 2731:8	2433:6	tell 2349:20
2532:24	2685:22	2731:11	2449:11	2366:22
2557:23	2707:4	2731:18	2453:20	2370:15
2570:6	talk 2346:16	2736:4, 2768:3	2454:2	2371:9, 2407:2
2574:23	2365:10	2771:13	2511:17	2450:23
2616:16	2392:25	Tammy 2337:16	2516:5	2489:17
2635:8	2394:4, 2395:8	2340:21	2516:14	2492:15
2635:12	2422:20	2537:6	2516:15	2495:24
2636:4	2423:1	2582:22	2530:25	2496:17
2636:15	2457:17	2716:10	2533:19	2500:15
2636:18	2461:20	2717:6	2576:19	2504:16
2639:16	2535:18	TAN 2333:11	2592:2	2508:15
2639:17	2542:14	tangr@gtlaw.com	2592:18	2573:9
2639:17	2545:2	2333:15	2664:13	2573:20
2639:18	2546:19	tank 2432:1	2755:3	2591:2, 2614:5
2649:5	2564:19	2545:17	technically	2618:22
2663:19	2571:13	tanks 2553:11	2355:22	2650:11
2663:19	2579:19	Tannis 2329:14	2358:19	2654:7
2670:18	2615:14	2342:10	2380:10	2654:17
2681:17	2638:17	2343:8, 2343:9	2397:8	2657:11
2684:2	2642:13	2486:21	Technique	2661:17
2686:19	2667:9	2578:8	2778:13	2706:11
2689:9, 2693:2	2687:24	2621:23	techniques	2743:3
2693:7	2703:1	2624:24	2340:9	2772:22
2696:23	2722:13	Taos 2655:6	2463:21	2772:24
2696:25	2733:10	2655:7	2602:16	telling 2536:2
2697:13	2741:16	2753:14	2606:19	2703:8
2723:2	talked 2423:8	target 2509:19	2619:25	temperature
2723:13	2424:20	2509:22	2647:5	2429:7
2723:19	2452:24	targeting	2647:11	temporarily
2731:17	2453:4	2457:5	Technol 2338:16	2525:19
2732:15	2461:23	targets 2648:11	2338:21	2557:3
2742:11	2619:21	taught 2655:8	2339:15	2557:15
2754:22	2620:17	2746:18	2339:18	2557:18
2759:5	2666:10	tax 2497:18	2339:21	Tempore 2662:4
2760:12	2668:1, 2719:4	2506:9	technologies	tend 2544:23
2767:24	2724:25	2506:16	2346:17	2549:5
taken 2351:14	2730:7	teach 2747:10	2438:10	2553:15
2352:7	2730:12	2747:16	2527:12	2557:8
2353:22	2737:7	teacher 2655:5	2605:14	2562:17
2353:23	2738:15	2655:6, 2762:4	2605:17	2630:16

Volume 8
9/29/2021

EIB Ozone Hearing

2672:3	2347:18	2353:2, 2353:2	2416:18	2512:19
2675:12	2383:17	2353:6, 2353:9	2418:15	2513:19
2733:23	2387:8, 2428:4	2353:14	2426:17	2514:5, 2516:4
2737:1	2455:25	2353:16	2428:7, 2428:9	2516:6
tended 2701:4	2461:25	2353:22	2428:13	2516:15
tends 2509:19	2502:13	2353:23	2432:18	2516:15
2509:22	2512:16	2355:13	2432:22	2516:18
tens 2723:10	2515:18	2355:25	2433:6	2516:19
2725:12	2517:12	2356:8	2433:19	2516:20
tent 2530:6	2524:15	2356:11	2441:14	2516:24
tenure 2662:19	2537:13	2356:22	2445:15	2519:15
2746:5	2591:8	2357:19	2447:4, 2448:4	2519:22
2746:13	2614:20	2357:24	2448:11	2522:15
term 2672:6	2619:13	2357:24	2451:3	2524:9
2696:19	2637:15	2358:12	2452:13	2524:10
terminate	2642:11	2359:11	2453:6, 2453:8	2524:19
2438:6	2665:4	2360:1	2453:12	2524:21
2439:15	2669:17	2361:10	2454:14	2525:17
terminology	2690:23	2362:12	2455:15	2525:22
2736:12	2691:9	2362:24	2460:21	2527:15
terms 2353:4	2712:13	2374:18	2461:8	2528:18
2360:14	2717:9, 2743:9	2374:18	2461:19	2528:20
2361:20	2749:15	2374:22	2462:3	2529:19
2376:1	2769:1	2374:23	2462:16	2532:8
2408:17	2769:13	2375:2	2462:20	2535:19
2409:10	2774:21	2377:11	2462:24	2538:2, 2538:6
2414:3, 2414:5	2779:7	2377:15	2463:2, 2463:4	2538:13
2414:8	testify 2417:12	2378:7	2463:6	2538:14
2449:16	2589:22	2378:10	2463:17	2539:4
2502:16	2668:16	2379:5	2465:3	2550:21
2601:15	2679:5	2379:17	2465:13	2551:12
2601:17	2713:18	2379:24	2465:17	2552:12
2621:7	2734:16	2380:11	2465:22	2556:21
2621:10	2769:13	2380:14	2467:2, 2467:7	2559:18
2627:14	testifying	2381:1, 2381:4	2467:25	2559:21
2627:25	2374:17	2382:3	2469:19	2560:4
2633:1, 2656:1	2379:21	2382:21	2471:6	2560:14
2704:3	2384:13	2383:9	2471:21	2560:24
2710:14	2398:18	2383:15	2472:2	2561:20
2711:20	2399:2, 2459:5	2383:20	2473:20	2561:24
2721:1, 2730:8	2734:15	2383:25	2474:10	2562:14
2730:11	2746:8	2384:5, 2384:7	2475:3	2563:6
2739:2	2766:17	2384:9	2477:17	2563:17
2771:15	2767:15	2384:12	2477:20	2563:22
2771:17	2774:7	2385:9	2477:24	2568:18
2782:3	testimonies	2386:10	2478:5	2572:9, 2573:4
terribly 2701:7	2593:7	2386:25	2478:10	2574:21
Terrific	2719:22	2387:9	2480:11	2575:7
2508:10	testimony	2398:23	2484:10	2577:16
2523:12	2335:9, 2338:6	2399:10	2484:15	2578:12
2550:19	2339:9	2400:3	2484:16	2578:15
2717:5	2340:22	2400:16	2484:25	2579:15
territory	2341:6, 2343:2	2402:21	2485:1, 2485:6	2582:9, 2585:8
2625:15	2347:22	2406:22	2485:24	2588:18
test 2353:1	2351:2	2409:17	2486:2, 2486:5	2593:3, 2593:6
2462:22	2351:14	2409:18	2488:24	2593:9
2544:5	2351:15	2413:2	2501:1	2593:12
2563:17	2351:17	2414:13	2511:23	2594:5, 2596:5
2565:2, 2571:7	2351:25	2416:12	2511:24	2597:5
tested 2342:19	2352:15	2416:15	2512:16	2597:12
testified	2352:19	2416:16	2512:18	2599:12

Volume 8
9/29/2021

EIB Ozone Hearing

2602:5	2733:7	2755:23	2402:3, 2402:6	2477:19
2604:11	2733:14	textbook	2404:9	2478:12
2609:1	2733:19	2747:20	2405:10	2478:15
2609:19	2733:25	thank 2342:21	2405:22	2479:1, 2479:7
2610:17	2735:11	2343:13	2405:24	2479:11
2610:21	2738:13	2345:9	2406:8	2479:12
2611:3	2740:22	2345:16	2406:20	2479:20
2613:25	2741:7	2346:25	2406:22	2479:21
2615:5	2741:14	2347:13	2407:16	2479:23
2615:11	2742:20	2348:5, 2348:6	2408:14	2479:24
2615:14	2743:16	2349:24	2409:9, 2410:7	2480:1, 2480:2
2615:24	2744:8, 2744:9	2350:8	2410:9	2480:5, 2480:6
2616:19	2744:13	2350:24	2410:13	2482:9
2616:25	2744:19	2351:6	2412:20	2482:10
2617:4, 2617:5	2744:22	2352:10	2412:22	2482:12
2618:3	2744:25	2352:21	2412:23	2482:16
2618:15	2745:1, 2745:9	2353:18	2413:2, 2413:8	2484:2
2619:9	2745:10	2354:5	2413:9	2484:21
2620:16	2746:7, 2748:9	2356:18	2413:10	2486:14
2622:2	2749:7	2356:20	2413:12	2487:20
2624:10	2749:11	2357:13	2413:13	2487:24
2626:9	2749:14	2357:15	2414:10	2487:25
2626:11	2749:23	2357:21	2414:16	2489:15
2627:12	2749:25	2358:24	2415:13	2489:19
2627:16	2750:1, 2755:1	2359:1, 2360:6	2415:17	2490:7, 2492:1
2629:23	2755:21	2363:22	2415:18	2492:2
2632:24	2756:15	2364:19	2415:19	2492:13
2635:2	2760:9	2365:14	2416:21	2492:17
2637:21	2762:10	2366:12	2417:20	2493:3
2638:5, 2638:9	2762:22	2366:20	2419:24	2495:16
2638:15	2763:8	2366:24	2420:4	2495:19
2638:24	2763:16	2367:7, 2370:7	2420:15	2496:15
2640:16	2763:18	2370:8, 2370:9	2421:10	2496:19
2648:9	2764:18	2370:10	2421:15	2497:1, 2500:2
2648:14	2764:23	2371:2	2421:20	2500:3, 2500:6
2649:7	2765:18	2371:11	2421:22	2500:13
2655:17	2766:21	2371:18	2423:12	2500:17
2667:13	2767:20	2371:19	2423:21	2500:24
2668:19	2768:8, 2769:2	2373:19	2427:17	2500:25
2680:13	2769:9	2373:20	2433:23	2503:21
2680:16	2769:12	2377:22	2441:11	2503:25
2682:18	2769:15	2378:14	2441:16	2504:1, 2504:9
2691:23	2771:9	2379:8, 2380:3	2441:20	2504:10
2692:6	2773:24	2380:16	2442:23	2504:14
2696:12	2775:11	2382:22	2444:22	2504:18
2698:14	2775:24	2382:24	2444:23	2504:25
2705:2, 2708:8	2781:8	2383:18	2446:5	2505:1
2710:20	tests 2534:11	2385:24	2446:17	2507:24
2710:22	Texas 2332:11	2386:2	2446:19	2508:3, 2508:4
2716:16	2332:18	2386:15	2446:20	2508:13
2717:16	2368:23	2386:21	2447:14	2508:17
2717:18	2391:5	2388:6, 2389:8	2449:13	2508:24
2718:3	2393:10	2390:5	2450:20	2510:21
2719:20	2393:13	2390:10	2454:20	2510:22
2726:6	2494:6, 2542:7	2398:8	2455:14	2511:16
2729:14	2592:7, 2658:2	2399:14	2456:9, 2459:2	2512:20
2729:19	2699:13	2399:17	2461:5	2513:4
2729:21	2761:19	2400:16	2463:15	2513:14
2730:2, 2730:8	text 2342:10	2400:17	2466:5	2514:9
2730:24	2343:10	2400:22	2470:12	2514:18
2732:14	2754:15	2401:22	2470:21	2514:19

Volume 8
9/29/2021

EIB Ozone Hearing

2514:20	2577:25	2631:20	2693:22	2771:20
2515:4	2578:4	2631:22	2695:14	2772:10
2515:14	2578:12	2631:24	2695:16	2773:2, 2773:5
2516:1	2579:14	2632:11	2695:16	2773:6, 2773:9
2516:13	2581:19	2632:12	2696:6, 2696:7	2773:11
2516:22	2581:20	2632:14	2701:23	2773:12
2517:4	2582:7, 2582:9	2632:15	2701:24	2773:14
2519:13	2582:25	2632:20	2702:2, 2702:3	2773:16
2521:13	2583:4	2634:16	2703:19	2773:24
2521:16	2585:20	2634:19	2703:20	2773:25
2522:3, 2522:6	2587:22	2634:21	2705:22	2774:1, 2774:3
2522:10	2587:25	2634:25	2705:25	2774:16
2522:11	2588:3, 2588:4	2635:1, 2635:3	2706:1	2775:10
2522:14	2588:6, 2588:8	2635:4	2707:23	2775:23
2522:16	2588:10	2635:24	2707:24	2776:22
2522:17	2588:11	2636:20	2709:4	2778:5
2522:19	2589:21	2636:21	2709:14	2778:17
2522:25	2590:10	2637:10	2710:12	2778:22
2523:4, 2523:5	2590:12	2638:3	2712:9	2778:24
2523:6, 2529:2	2590:14	2638:10	2712:10	2779:25
2529:5, 2529:8	2590:19	2638:21	2713:2, 2713:3	2780:1
2531:8	2590:25	2638:22	2713:24	2780:10
2531:10	2591:4	2639:8	2714:3, 2714:5	2780:12
2531:13	2592:23	2642:23	2716:1, 2717:3	2780:15
2532:2	2593:13	2643:8	2718:23	2780:18
2533:11	2594:3	2643:23	2720:18	2780:20
2534:23	2595:12	2643:25	2721:6	2780:22
2535:7, 2536:5	2596:15	2649:11	2721:15	2780:23
2536:7, 2536:9	2597:8, 2598:1	2649:11	2728:12	2780:24
2536:11	2598:14	2650:3, 2650:9	2728:14	2781:4
2536:12	2601:22	2650:13	2729:3, 2729:7	2782:13
2536:14	2606:5	2650:20	2729:11	2782:19
2536:16	2607:24	2653:20	2735:12	thanks 2345:18
2536:17	2610:5	2653:21	2735:14	2387:17
2536:23	2610:15	2654:15	2737:6	2414:13
2537:2	2610:19	2654:19	2737:21	2456:11
2537:25	2611:2	2655:1	2737:23	2537:20
2538:23	2612:19	2656:17	2738:13	2630:1
2538:25	2613:5, 2613:7	2656:18	2739:16	2631:21
2541:4	2613:22	2657:9	2740:13	2707:22
2547:23	2619:12	2657:14	2740:15	theoretical
2550:7	2620:7, 2620:9	2660:19	2740:21	2645:10
2550:19	2621:12	2661:6	2740:22	theory 2762:1
2552:19	2621:14	2661:19	2740:23	thereon 2362:13
2552:19	2621:17	2662:1, 2662:7	2741:12	thing 2361:12
2553:1	2622:2	2663:1	2741:13	2383:14
2555:25	2623:24	2663:11	2741:15	2394:11
2556:14	2623:25	2664:8, 2664:9	2743:1, 2743:5	2414:20
2556:20	2624:2	2669:1	2743:13	2424:8
2558:5	2624:25	2669:24	2743:18	2585:22
2558:17	2625:20	2670:4	2745:21	2614:24
2560:1, 2562:5	2626:7	2671:19	2751:7	2620:8, 2631:8
2562:20	2626:22	2672:2, 2672:6	2751:12	2691:19
2563:8	2626:25	2673:11	2763:20	2697:5
2563:11	2627:10	2679:17	2763:25	2701:11
2564:6	2627:12	2681:1, 2682:2	2764:5, 2764:8	2701:12
2568:17	2628:23	2687:21	2766:6, 2766:8	2701:17
2571:12	2629:14	2692:20	2770:14	2706:12
2572:7, 2576:3	2629:17	2692:23	2770:16	2712:12
2576:4, 2577:3	2629:25	2693:7	2771:5, 2771:9	2716:8
2577:23	2630:2	2693:19	2771:11	2769:20

Volume 8
9/29/2021

EIB Ozone Hearing

2775:8 things 2347:19 2354:9 2383:24 2384:2 2397:15 2400:4 2400:14 2400:15 2402:22 2408:6, 2411:8 2415:11 2422:18 2426:8 2457:13 2457:14 2468:12 2468:13 2488:23 2502:18 2533:22 2535:21 2549:4, 2549:9 2551:24 2559:13 2559:17 2568:25 2575:23 2580:15 2580:18 2616:17 2639:16 2641:5 2665:17 2696:22 2699:25 2702:7 2704:25 2715:7, 2726:8 2737:1 2755:24 2759:8 think 2343:3 2344:16 2344:17 2344:19 2345:5 2345:11 2346:4 2347:24 2348:1 2348:22 2349:23 2350:20 2351:19 2351:23 2353:8 2353:12 2353:17 2355:10 2356:13	2356:21 2360:17 2360:23 2361:18 2365:5, 2377:4 2378:1, 2379:5 2379:20 2380:23 2380:24 2382:8 2384:16 2384:23 2386:3, 2386:4 2386:7, 2389:4 2392:14 2394:17 2395:17 2395:18 2396:3 2396:12 2396:18 2397:1 2397:14 2397:21 2397:22 2402:2, 2402:7 2403:14 2403:19 2405:14 2405:14 2405:17 2407:21 2408:2 2408:12 2409:16 2409:17 2410:1 2411:25 2413:3 2414:20 2416:2 2418:22 2418:24 2418:25 2419:18 2419:19 2419:25 2420:11 2420:15 2420:18 2421:5 2421:15 2421:18 2422:19 2422:22 2423:4 2423:22 2424:10 2424:14 2424:19 2425:7, 2425:8	2426:9, 2427:1 2427:7, 2427:8 2427:13 2434:22 2436:10 2443:20 2443:24 2444:20 2446:6 2447:15 2451:13 2454:14 2455:25 2456:17 2457:22 2459:8 2459:24 2460:8 2460:13 2460:21 2461:8, 2461:9 2465:1, 2465:2 2467:10 2467:10 2471:2 2472:11 2472:14 2473:11 2474:19 2477:21 2483:19 2483:22 2483:23 2484:17 2485:12 2486:20 2486:22 2487:4 2487:12 2493:15 2495:22 2497:25 2510:14 2512:3, 2512:8 2512:18 2513:2 2514:15 2514:19 2529:2, 2531:7 2535:10 2535:12 2536:6 2537:16 2538:21 2544:25 2545:20 2552:1, 2557:9 2559:8 2559:16 2560:9 2560:16	2560:23 2561:22 2562:7 2562:22 2563:2, 2564:7 2566:4, 2570:4 2572:3 2575:14 2575:21 2575:21 2576:2, 2579:6 2579:8 2580:14 2580:16 2580:20 2580:25 2581:7 2581:15 2583:15 2584:3, 2584:9 2585:9 2585:16 2585:23 2586:7 2586:13 2586:19 2587:10 2589:15 2589:17 2618:1, 2618:5 2619:13 2619:20 2621:15 2624:23 2628:21 2629:8 2629:16 2630:5 2630:25 2631:4 2636:12 2636:14 2642:19 2642:24 2643:1, 2643:1 2643:7 2655:13 2658:4 2658:19 2659:1, 2659:9 2659:25 2660:15 2660:18 2665:14 2666:18 2667:25 2670:3, 2685:2 2691:24 2694:21 2698:5, 2698:7 2699:17	2701:9, 2704:1 2708:3 2711:14 2712:14 2712:25 2713:15 2713:22 2715:6 2715:23 2730:7, 2733:8 2733:9 2733:14 2734:13 2734:16 2737:11 2738:22 2739:1 2739:18 2739:19 2739:24 2742:5, 2742:7 2764:1 2768:18 2769:14 2769:20 2771:6 2771:13 2772:12 2773:20 2774:11 2775:8, 2779:6 2781:21 2782:2 2782:18 thinking 2424:6 2530:10 2765:3, 2765:8 thinks 2457:7 2486:20 third 2437:21 2438:20 2485:4, 2503:7 2524:4 2594:22 2646:2 2670:20 2705:13 2745:8 third-party 2604:25 2607:8 2607:11 2607:17 Thompson 2337:16 2340:21 2537:7 2582:22 2585:1, 2621:9 2635:11 2635:21
---	--	---	---	---

Volume 8
9/29/2021

EIB Ozone Hearing

2635:23	2528:1	2776:21	2452:15	2663:11
2636:21	thousands	throughputs	2453:8	2675:13
2716:11	2594:24	2435:17	2453:21	2675:19
2716:22	2723:10	throw 2363:6	2454:4	2677:16
2717:6	2725:12	2630:6, 2713:8	2454:12	2685:19
2717:17	threatened	throwing	2455:23	2685:20
2718:23	2770:6	2631:19	2461:1	2685:23
2720:18	threatening	thumbnail	2469:20	2686:10
2722:10	2368:1	2455:18	2469:23	2686:13
2729:4, 2729:6	2368:13	thumbs 2635:20	2470:3, 2470:9	2693:17
2729:8	threats 2757:3	Thursday 2361:7	2473:22	2698:21
2729:18	three 2342:23	tie 2714:19	2474:13	2700:11
2734:2, 2734:8	2369:15	2714:20	2475:6	2701:7, 2701:9
2734:19	2369:24	tier 2608:12	2476:20	2702:1
2735:20	2371:23	tiered 2601:7	2477:6, 2479:5	2703:12
2737:22	2403:2	2603:25	2480:4	2704:3
2738:1	2484:24	tiers 2601:8	2480:22	2704:13
2738:12	2488:23	Tijeras 2328:22	2484:18	2717:12
2739:3, 2740:1	2494:12	TIM 2332:15	2484:19	2723:16
2740:14	2494:22	tim.wilkins@...	2485:14	2723:17
2740:23	2502:18	2332:19	2487:10	2723:20
2741:4, 2741:6	2509:4	time 2345:14	2492:1	2723:21
2741:13	2509:25	2350:19	2499:18	2724:9, 2726:3
2741:15	2510:13	2350:21	2499:22	2726:19
2769:12	2524:1	2350:25	2504:9, 2505:2	2731:24
Thompson's	2545:19	2352:18	2507:25	2731:25
2635:6	2646:21	2354:17	2510:21	2732:25
2717:14	2653:1, 2653:9	2354:21	2511:8	2737:1, 2751:3
2733:7	2653:23	2355:20	2513:23	2769:22
2733:14	2663:3, 2686:8	2356:5	2515:24	2773:9
Thomson 2335:4	2708:19	2364:15	2521:9	2773:10
2365:24	2725:15	2370:7	2522:14	2780:14
2366:8	2725:16	2374:10	2530:16	2781:18
2366:10	2725:17	2385:3	2533:6, 2534:1	2782:3
2366:12	2725:21	2385:23	2534:16	timeline 2370:5
2366:18	2725:21	2392:20	2558:24	2436:6
2366:18	2744:21	2397:7	2567:5	2436:10
2366:23	2752:5	2404:24	2572:20	2439:22
2367:1, 2367:7	three-legged	2405:1, 2408:5	2574:13	2440:4
2367:8	2705:9	2408:11	2574:20	2503:14
2370:11	threefold	2410:13	2585:9	2528:2
thought 2349:3	2606:24	2416:3	2587:22	2530:12
2379:16	2607:5	2419:18	2588:19	2653:14
2392:20	threshold	2421:23	2604:16	times 2338:16
2423:9	2727:3, 2727:7	2423:1	2604:17	2342:5
2423:18	2776:21	2423:25	2604:22	2349:16
2423:23	thresholds	2426:14	2605:4	2360:18
2424:18	2452:11	2426:23	2605:25	2407:14
2425:2	2474:4	2426:24	2616:16	2540:3
2427:10	2518:18	2427:2	2618:23	2544:18
2455:19	2608:11	2427:13	2619:15	2544:20
2532:5, 2703:2	2644:16	2427:14	2619:18	2564:23
2709:15	throughput	2430:17	2640:2, 2640:4	2571:15
2781:19	2431:16	2430:18	2652:16	2572:11
thoughtful	2431:19	2436:4	2657:21	2574:3
2393:18	2435:6	2437:14	2658:13	2613:23
2396:7	2435:16	2439:21	2658:24	2644:8
thoughts 2426:6	2451:1, 2776:6	2440:4	2659:8, 2660:3	2648:22
thousand 2531:3	2776:8, 2776:9	2440:19	2660:4	2648:22
2577:18	2776:10	2443:21	2660:18	2648:23
thousand-foot	2776:12	2445:9	2662:7	2652:1

Volume 8
9/29/2021

EIB Ozone Hearing

2670:22	2648:5, 2662:5	2608:17	2593:23	2525:7
2670:24	2678:2	2609:6, 2609:8	2594:25	2537:11
2680:22	2699:24	2609:11	2595:16	2550:20
2687:18	2700:14	2609:12	2595:20	2591:6
2687:19	2715:18	2614:22	2595:25	2637:13
2697:16	2719:9, 2732:7	2614:22	2595:25	2665:2
2698:5	2744:20	2615:6, 2616:1	2598:9	2714:19
2699:21	2746:8, 2746:8	2644:23	2608:23	2714:20
2727:22	2753:11	2647:19	2608:24	2714:21
timing 2649:9	2753:15	2647:21	2609:1	2715:1, 2715:1
TIMMONS 2331:12	2761:4, 2761:9	2673:16	2609:20	2717:7
tiny 2359:14	2761:22	2673:18	2609:21	2741:22
2359:14	2769:10	2674:10	2609:24	2743:7, 2774:7
tissue 2719:25	2769:15	2674:17	2609:24	2774:19
Title 2757:10	2769:21	2677:8	2610:12	2780:25
2757:10	toddler 2663:15	2677:21	2610:14	topics 2342:23
2758:19	toe 2700:11	2678:6	2626:3	2714:16
tobacco 2367:13	token 2347:25	2682:19	2655:21	2714:22
2367:15	told 2652:9	2683:6	2673:21	2734:18
today 2350:19	toll 2368:25	2684:23	2673:21	total 2518:20
2376:9	toluene 2495:5	2685:4, 2687:4	2680:18	2543:3, 2544:1
2376:19	2727:16	2687:4	2688:18	2547:19
2378:10	2728:6, 2747:2	2687:13	2688:19	2548:18
2378:12	Tom 2479:16	2687:20	2688:20	2550:15
2393:24	tomorrow	2687:24	2688:22	2554:23
2395:8	2417:12	2688:14	2689:22	2554:24
2400:25	2421:9	2689:12	2689:23	2567:5
2408:13	2538:21	2689:14	2689:24	2567:16
2410:14	2635:9	2689:18	2690:1, 2704:7	2571:15
2413:13	2635:16	2690:4, 2690:5	2707:8	2585:18
2416:20	2711:5, 2712:5	2690:7	2719:12	2617:11
2417:10	2716:6, 2716:8	2705:15	2719:13	2617:12
2433:25	2774:8, 2781:6	2706:6	2719:17	2645:25
2445:25	ton 2340:16	2706:21	2719:18	2646:16
2446:12	2518:22	2707:4	tool 2535:24	2646:19
2459:4	2518:25	tonight 2716:5	top 2367:23	2670:15
2471:19	2566:4	2773:24	2372:3, 2419:4	2671:1
2480:19	2597:14	2774:10	2483:3	2671:11
2484:8, 2490:8	2597:16	tonnage 2615:9	2548:17	2671:12
2491:11	2597:17	tons 2372:15	2562:11	2688:9
2492:1	2597:23	2432:3, 2432:4	2593:20	2696:25
2495:12	2597:24	2432:5, 2432:9	2622:21	2697:14
2497:8	2598:22	2432:11	2622:22	totally 2364:13
2502:11	2598:24	2454:2, 2468:9	topic 2335:8	touch 2529:18
2507:25	2598:25	2520:7, 2520:8	2335:13	2535:15
2516:19	2599:6, 2599:7	2520:22	2336:8	touched 2550:8
2524:1, 2537:5	2599:10	2525:25	2336:10	touching 2536:2
2538:21	2599:11	2540:2	2336:13	tourism 2656:9
2542:13	2599:24	2540:13	2336:17	tower-based
2556:22	2600:1, 2600:3	2543:8	2337:4	2542:20
2564:18	2600:19	2545:11	2337:16	2543:14
2589:22	2600:22	2545:21	2337:20	tower-mounted
2593:12	2601:11	2546:3	2337:24	2620:2
2610:21	2601:13	2549:23	2341:4, 2387:6	toxic 2495:4
2618:4	2603:15	2551:5	2395:9, 2416:8	2594:2
2635:12	2603:24	2551:15	2428:2	2625:25
2638:13	2604:3, 2608:7	2551:16	2515:16	2702:14
2638:16	2608:9	2551:18	2519:15	2702:15
2638:17	2608:10	2553:4	2521:10	2702:21
2640:16	2608:14	2593:19	2524:13	2720:22
2645:20	2608:15	2593:22	2524:22	2721:21

Volume 8
9/29/2021

EIB Ozone Hearing

2734:23 toxics 2720:23 2720:24 2721:2 toxins 2658:19 trace 2761:13 tracer 2583:17 track 2746:13 tradition 2372:1 traditional 2527:11 2549:3 2555:15 2596:13 training 2677:16 2685:7 TransColorado 2333:3 transcript 2327:10 2338:3 2390:14 2405:7 2489:13 2590:21 2650:5, 2661:8 2712:16 2713:1 2742:22 2783:9 transferring 2498:6 transition 2633:1, 2633:5 translates 2599:25 transmission 2333:3, 2432:7 2442:1, 2442:6 2445:8, 2446:3 2517:11 2517:16 2518:6 2519:23 2520:13 2520:18 2520:23 2548:10 2570:11 2570:20 2593:11 2610:23 2644:5 2648:25 2689:20 2768:16 transparent 2423:18 transport	2623:8 transported 2441:25 transporting 2725:25 Taurig 2333:12 travel 2413:23 2604:22 2607:21 2619:18 2677:16 traveling 2685:7 2685:13 TRAVIS 2330:10 treading 2393:15 treat 2442:6 treaters 2645:15 2696:22 treatment 2751:19 2752:21 trees 2555:7 tribal 2369:2 2493:13 2625:9, 2748:4 tried 2396:6 2523:19 2549:19 2729:23 trigger 2495:10 triggering 2608:12 trip 2607:22 2652:19 TROPOMI 2543:6 trouble 2360:19 2488:16 2617:3 true 2364:7 2468:18 2478:6 2548:19 2556:3, 2572:9 2572:23 2574:8, 2783:9 Trujillo 2328:6 2378:4 2378:13 2389:11 2389:13 2390:5 2391:25 2410:10 2410:11 2410:25 2411:22 2412:11 2412:15	2412:18 2415:14 2415:16 2420:23 2479:8, 2479:9 2522:12 2522:13 2532:3, 2532:4 2533:1 2533:10 2534:2 2534:23 2536:5, 2583:5 2583:6 2583:10 2584:5 2584:16 2584:21 2585:3 2585:20 2586:18 2587:16 2587:21 2629:19 2629:21 2696:8, 2696:9 2697:8 2697:22 2698:13 2699:16 2700:16 2701:23 2773:7, 2773:8 2780:16 2780:17 trust 2638:2 truth 2366:22 2371:9 2479:17 2489:17 2492:15 2496:17 2500:15 2504:16 2508:15 2591:2 2650:11 2654:17 2657:11 2661:17 2743:3 try 2342:5 2411:17 2412:3, 2421:7 2443:11 2443:16 2443:20 2511:8 2532:17 2566:20 2660:5, 2666:4	2712:5, 2715:4 2716:16 2774:12 trying 2393:16 2393:16 2395:15 2395:17 2397:2 2412:19 2421:18 2421:19 2423:17 2424:21 2427:4 2475:24 2480:18 2483:15 2485:13 2534:25 2535:10 2561:4 2561:15 2567:10 2615:15 2620:18 2633:13 2639:23 2640:22 2659:23 2698:8 2712:15 2715:18 2731:23 2737:8 TSD 2603:7 2619:3 2619:10 TT 2717:15 2717:16 2729:19 turbine 2392:21 2393:3 turbines 2334:2 2334:4, 2395:7 2395:12 2397:18 2401:5 turn 2365:13 2375:12 2375:14 2386:17 2387:25 2398:10 2406:12 2441:14 2478:18 2478:20 2506:9 2514:12 2521:19 2521:21	2523:13 2524:11 2529:10 2531:15 2531:16 2536:25 2571:2 2576:22 2576:23 2576:24 2581:24 2584:22 2595:13 2627:3 2651:17 2666:18 2693:17 2695:22 2709:21 2717:1, 2738:3 2743:25 2744:1, 2764:3 2770:18 2770:20 2780:5 turned 2537:17 2703:5 turning 2361:9 2526:25 2550:20 2556:21 2573:2 2601:23 2695:20 2751:16 2778:6 two 2345:5 2360:18 2360:18 2363:13 2369:21 2377:11 2377:12 2380:5 2381:21 2383:3, 2388:3 2402:12 2402:22 2408:20 2414:7 2415:20 2422:5 2422:18 2431:9, 2432:3 2432:4 2433:13 2436:7 2453:16 2457:21 2469:4 2472:15
---	--	--	--	--

Volume 8
9/29/2021

EIB Ozone Hearing

2475:21	2690:14	ultimate 2483:2	2552:22	2481:8
2476:3	type 2347:24	2498:13	2552:24	2484:15
2476:16	2356:23	ultimately	2628:18	2486:20
2476:18	2397:20	2408:1	underestimated	2486:22
2481:4, 2486:8	2430:24	2497:12	2476:12	2517:8, 2517:9
2487:6	2435:9, 2435:9	2498:20	2614:18	2517:13
2494:18	2437:9, 2438:1	2499:5	2667:7, 2677:5	2531:12
2513:1	2439:1, 2439:3	um-hum 2378:15	2677:13	2534:25
2517:17	2440:6	2403:23	2678:9	2565:1
2519:6	2440:21	2414:11	underestimates	2567:10
2520:20	2454:1	2567:17	2585:15	2583:18
2525:25	2473:13	2588:21	underestimating	2587:1, 2587:1
2526:1	2498:1	2619:2, 2633:6	2550:4, 2550:5	2587:5
2526:16	2498:19	2765:14	2725:23	2616:24
2528:17	2499:4	un 2364:13	2726:4, 2726:7	2617:5
2546:5	2507:22	unabated	Underestimation	2641:14
2565:18	2528:25	2608:24	2339:7	2653:24
2568:5	2573:10	unable 2433:4	undergo 2411:20	2675:3
2578:20	2631:12	2433:12	underlie	2692:14
2600:22	2631:19	2433:14	2570:16	2704:1, 2704:6
2601:10	2633:4	2463:5, 2662:5	underlied	2708:4
2601:12	2645:24	2775:19	2453:20	2708:16
2608:14	2651:25	unacceptable	underlies	2710:5, 2711:5
2608:15	2658:19	2368:15	2569:6	2723:14
2614:11	2679:20	unanticipated	underlined	2739:5
2617:13	2725:5, 2777:4	2364:13	2752:6	2739:11
2617:22	types 2352:18	unaware 2631:6	underlying	2739:15
2638:18	2429:17	unbelievable	2355:16	2742:19
2640:10	2430:22	2656:8	2462:6	2762:6
2641:17	2436:1	uncertainty	2586:11	2762:21
2647:10	2438:14	2684:25	2586:15	2768:13
2647:11	2466:10	unclear 2438:25	2614:4, 2616:9	2772:3
2648:23	2569:13	2450:2	2617:16	understandable
2653:5	2670:9	2483:13	2692:10	2729:24
2658:16	2670:14	2483:23	underpin 2677:7	understanding
2658:22	2670:14	2561:15	underpinning	2349:7
2659:6, 2667:8	2671:11	uncles 2651:8	2677:1	2351:10
2669:14	2679:24	unconscionable	underresourced	2364:24
2670:12	2683:10	2655:14	2501:14	2379:12
2675:14	2691:14	2656:8	underscores	2380:4, 2382:1
2675:17	2692:2, 2697:3	uncontrolled	2600:7	2384:20
2681:7	2697:17	2520:22	2604:10	2385:8
2683:11	2722:23	2600:19	understand	2385:19
2688:14	2725:15	2600:21	2342:22	2385:20
2688:21	2775:18	2601:5	2350:11	2388:19
2688:22	2775:20	2601:10	2350:22	2398:18
2692:2, 2692:9	typical 2631:13	unconventional	2361:5	2426:16
2699:24	2645:13	2470:6, 2470:8	2362:20	2426:17
2701:2, 2701:5	2686:11	2672:3	2364:14	2445:6
2704:24	2696:25	undercounted	2378:1	2445:19
2705:4	typically	2628:17	2378:21	2452:9, 2455:1
2708:18	2429:4, 2430:3	undercounting	2380:20	2459:8
2716:4	2455:5	2628:10	2381:3	2463:23
2727:16	2518:21	underestimate	2382:13	2463:25
2747:12	2555:14	2549:6	2384:22	2481:25
two-thirds	2573:16	2550:15	2384:24	2482:20
2554:24	2630:21	2550:16	2386:17	2485:11
two-year 2526:5		2550:17	2412:19	2565:18
twofold 2518:2	U	2551:7	2426:15	2574:10
2533:16		2552:17	2427:15	2577:19
tying 2423:9	Uh-oh 2342:18	2552:22	2475:25	2614:2, 2615:8

Volume 8
9/29/2021

EIB Ozone Hearing

2625:1, 2724:4 2724:24 2725:2, 2740:5 2740:6 2766:15 2766:19 2767:14 2771:15 understate 2687:5 understood 2361:1, 2381:5 2402:22 2403:17 2403:19 2444:20 2696:11 2756:7 undertake 2454:1 undertaking 2458:6, 2530:3 2678:10 undone 2351:22 unemployment 2497:22 unfair 2363:17 2365:5 2418:12 2560:18 unfairness 2354:13 unfortunately 2395:8 2628:12 2628:15 unhealthy 2595:2 unintelligible 2347:3 2348:17 2370:18 2370:21 2382:4 2454:21 2528:12 2530:23 2534:21 2536:4 2562:12 2573:21 2614:9 2717:13 unintelligib... 2528:25 unintended 2507:1, 2507:4 unique 2627:25 unit 2401:18 2436:16 2440:5	United 2338:13 2339:14 2339:20 2340:18 2465:25 2652:3, 2658:2 2659:2 2757:18 units 2401:9 2468:13 University 2330:12 2391:16 2467:15 2542:21 2542:22 2543:13 2544:6, 2545:7 2554:15 2579:25 2580:4 2583:23 2592:7 2592:10 2624:6 2721:12 2746:1, 2746:6 2746:14 2746:19 2747:15 2747:15 2747:16 University/D... 2647:2 2678:24 2683:2 University/DOE 2682:10 2682:22 unknown 2450:18 unlit 2545:17 2547:3, 2547:7 2547:11 2549:12 2551:24 unloading 2570:23 UNM 2655:6 2746:7 unmanageable 2639:20 unmute 2511:11 2620:11 2656:20 unmuted 2370:25 2489:5, 2500:5 2504:6, 2508:7 2510:25 2653:25 2661:2 unmuting 2511:8	2649:23 unnecessary 2518:8, 2519:3 unprecedented 2633:23 unquote 2374:18 2681:13 2681:16 unreasonable 2688:15 unreasonably 2458:22 2648:18 unsafe 2437:7 2663:24 unusual 2701:8 update 2468:17 updated 2477:5 2477:8 2517:14 2525:20 updates 2527:20 updating 2477:3 2477:14 upgrades 2497:16 uphold 2419:7 upstream 2473:15 2548:12 2554:6, 2668:8 upwind 2724:9 uranium 2754:6 urge 2502:15 2648:20 USA 2332:9 2525:2, 2525:5 2525:13 2525:17 2526:11 2526:14 2526:23 2527:16 2527:19 2528:18 2539:9 2539:18 USA's 2524:23 2525:1, 2526:7 2528:8 use 2358:5 2385:8 2403:13 2429:25 2438:6 2438:10 2445:23 2448:12 2464:12 2470:5, 2472:7	2505:18 2527:23 2530:3 2535:16 2546:20 2549:15 2551:9 2552:15 2568:4 2570:12 2571:1 2583:18 2585:13 2597:6 2605:19 2614:6 2615:18 2628:15 2634:14 2640:22 2642:15 2645:9 2657:22 2669:20 2672:19 2678:4 2678:11 2697:12 2705:19 2723:3, 2723:8 2724:17 2725:1, 2725:2 useful 2382:12 2589:15 USEPA 2720:23 2721:3 2721:18 2723:4 2746:21 2746:24 2758:15 user 2370:13 2370:18 2370:21 2495:23 2496:1 uses 2430:12 2542:10 2545:9 2578:25 2601:2, 2601:4 2601:5 2633:24 2633:24 usually 2646:11 2716:15 utilize 2607:19 2634:8, 2760:5 utilized 2437:20 2527:4	2627:17 utilizing 2633:4 V V-as-in-Vict... 2742:25 validity 2462:1 2667:11 2677:6 Valley 2753:21 2753:24 2765:17 value 2565:24 2616:4 values 2565:24 valve 2449:4 2457:13 2646:7 valves 2428:21 2428:25 2429:2, 2429:3 2429:8 2540:24 2555:6 2555:10 2645:25 2646:6, 2646:8 2670:11 2670:20 2698:20 2698:21 variability 2723:7 variable 2736:19 2736:21 2736:24 2737:2, 2737:5 Variation 2338:18 variations 2617:16 varies 2584:13 2625:7 variety 2374:20 various 2411:1 2573:6 2615:21 2620:3, 2629:3 2676:22 2723:5 vary 2584:8 2685:17 2685:25 2735:22 vehicle 2544:4 2544:13 2545:8 2551:25
--	--	---	---	---

Volume 8
9/29/2021

EIB Ozone Hearing

2565:8, 2606:3 vehicle-based 2542:21 2551:13 vehicles 2551:23 vent 2429:10 2570:22 venting 2547:7 2547:11 2555:7, 2559:3 2580:16 2580:23 2613:4 vents 2429:10 verbatim 2751:25 Verde 2407:13 2409:4 verse 2725:25 version 2417:8 2474:10 2474:17 2513:22 2517:23 2525:22 2526:4 versus 2455:2 2483:20 2483:21 2582:16 2634:1, 2634:4 2686:8 2691:14 2698:16 2699:10 2699:19 2703:25 2726:1 2726:20 2739:23 2754:20 2756:15 2761:6, 2765:9 vetted 2398:23 2399:11 VI 2757:10 2757:10 2758:19 Vice 2328:6 Vice-Chair 2378:4 2378:13 2389:11 2389:12 2389:13 2390:5 2391:25 2410:10 2410:11 2410:25	2411:22 2412:11 2412:15 2412:18 2415:14 2415:16 2420:23 2479:8, 2479:9 2522:12 2522:13 2532:3, 2532:4 2533:1 2533:10 2534:2 2534:23 2536:5, 2583:5 2583:6 2583:10 2584:5 2584:16 2584:21 2585:3 2585:20 2586:18 2587:16 2587:21 2629:19 2629:21 2639:8, 2696:8 2696:9, 2697:8 2697:22 2698:13 2699:16 2700:16 2701:23 2740:16 2773:7, 2773:8 2773:11 2780:16 2780:17 2782:14 vicinity 2722:19 2723:21 2726:20 video 2327:15 2366:5 2375:12 2375:14 2387:25 2488:25 2649:21 2666:18 2712:2 2743:23 2743:25 view 2347:18 2665:12 2665:13 viewed 2586:8 viewpoint	2497:8 vigorously 2376:13 Villa 2337:20 2341:6, 2341:8 2343:3, 2343:3 2351:3 2353:24 2374:17 2375:1, 2742:1 2742:7 2742:17 2742:23 2742:24 2743:4, 2743:6 2744:6 2745:18 2745:21 2751:7 2751:12 2763:19 2763:21 2763:24 2764:3, 2764:8 2764:12 2766:6 2766:15 2770:18 2771:4, 2771:8 2771:11 2771:20 2772:16 2773:3, 2773:5 2773:10 2773:11 2774:1, 2774:3 Villa's 2743:16 village 2753:14 2753:17 2753:19 villagers 2753:18 Vimont 2331:3 2386:24 2392:3 violation 2438:5 2459:22 2460:1, 2460:4 2758:13 violations 2438:3 2458:14 2458:23 2459:1 2758:18 2760:15 2760:17 Virginia 2756:15 2756:19	2756:20 2756:23 2761:6, 2770:4 virtually 2327:14 visibility 2412:10 visible 2372:16 2439:19 vision 2530:16 2728:5 visit 2395:2 2395:3, 2652:8 visiting 2652:22 visits 2509:11 2720:3 visual 2429:22 2527:7, 2705:7 visualize 2546:21 vitae 2341:7 2744:17 vitality 2720:7 VOC 2346:6 2346:13 2357:6 2392:19 2396:21 2414:8 2428:23 2434:9 2441:25 2442:2, 2455:1 2455:5, 2455:9 2472:20 2518:5 2518:17 2518:23 2518:25 2520:7 2520:22 2540:22 2551:5 2551:16 2551:18 2553:19 2554:2, 2570:9 2584:4 2584:10 2593:14 2593:19 2595:20 2596:3, 2596:6 2597:14 2597:16 2597:17 2597:23 2597:24 2598:9 2598:22	2598:24 2598:25 2599:6, 2599:7 2599:10 2599:11 2600:1 2600:19 2600:21 2601:5 2601:13 2602:6, 2604:3 2608:7, 2608:9 2608:10 2608:14 2608:15 2608:17 2608:23 2609:7, 2609:8 2609:11 2609:13 2609:20 2611:16 2616:1 2620:23 2620:23 2633:5 2633:15 2633:18 2633:21 2633:25 2634:4, 2634:4 2641:2 2644:20 2646:19 2648:2, 2648:7 2648:9 2673:16 2673:18 2682:17 2682:19 2684:5 2686:20 2691:20 2692:3 2697:20 2697:21 2719:4 2719:12 2719:13 2776:16 2776:18 2778:16 VOCs 2346:3 2346:14 2346:24 2398:2 2409:25 2540:2, 2540:4 2540:13 2542:9 2546:22
--	--	---	--	---

Volume 8
9/29/2021

EIB Ozone Hearing

2547:6, 2553:4	voluntary	2469:18	2564:19	2533:15
2556:4, 2556:7	2533:20	2469:18	2564:21	2533:15
2556:10	vote 2389:16	2480:9, 2485:5	2567:8	2533:15
2556:17	Voters 2329:12	2485:8	2574:19	2535:17
2583:15	vulnerable	2490:11	2582:10	2561:8
2583:15	2501:14	2491:11	2585:22	2561:22
2583:17	2502:7	2491:13	2627:13	2571:17
2583:23	2503:24	2491:24	2632:23	2579:7, 2587:9
2583:24	2509:19	2498:17	2634:14	2615:2
2584:2, 2584:6	2594:1	2502:12	2638:7	2628:13
2584:18	2752:14	2503:21	2693:16	2630:12
2585:12		2505:1, 2506:2	2695:13	2630:17
2585:14	W	2506:3, 2507:1	2713:10	2630:18
2585:17		2507:24	2713:18	2643:8, 2658:7
2585:19	W-A-L-T-E-R-S	2510:11	2721:2	2660:1
2589:24	2496:14	2522:5	2729:13	2674:10
2590:7, 2601:5	wait 2343:6	2532:11	2730:9, 2779:6	2722:3, 2733:7
2601:10	2417:18	2532:11	wanting 2350:15	2772:6, 2782:4
2609:24	2417:23	2534:7, 2562:1	2559:21	ways 2617:18
2610:12	2657:2	2569:16	wants 2497:24	2653:1
2626:3, 2633:2	2774:10	2571:13	2708:12	2705:18
2641:7	2781:3	2572:20	warming 2652:2	we've 2345:21
2641:10	waited 2566:17	2574:20	2652:4	2346:22
2641:11	waiting 2343:8	2577:16	warrant 2356:9	2349:15
2646:17	2365:14	2583:10	2644:22	2361:8
2648:13	2479:15	2630:23	Washington	2386:18
2652:5, 2684:1	2513:6	2636:9	2746:17	2396:5
2684:3	walk 2433:24	2636:10	2746:18	2408:11
2697:19	2644:24	2640:10	waste 2339:12	2411:11
2718:15	walk-through	2642:14	2351:16	2416:13
2718:17	2441:21	2652:20	2487:10	2422:4
2719:4, 2719:6	walked 2617:2	2655:13	2755:6	2426:17
2719:17	Walters 2335:20	2656:13	2755:11	2429:23
2719:18	2488:21	2658:8	2755:14	2434:2, 2434:5
2719:19	2496:5, 2496:6	2663:21	2758:22	2434:25
2721:8	2496:7, 2496:8	2667:18	2776:11	2465:2
voice 2366:16	2496:13	2671:22	watch 2663:17	2468:17
2366:16	2496:18	2708:4, 2713:8	2701:9	2470:5
2457:12	2496:20	2713:10	water 2333:9	2470:18
2489:10	2497:1, 2497:2	2714:1	2369:1, 2434:6	2472:1
2495:13	2500:3	2714:16	2434:8	2473:12
voices 2372:24	want 2347:14	2741:4, 2742:8	2493:13	2474:10
volatile 2495:7	2347:16	2762:5, 2771:6	2494:8	2484:18
2594:25	2349:13	2774:10	2656:15	2534:13
2595:16	2351:5	2780:12	2671:23	2534:15
2625:25	2354:12	2780:17	2700:11	2535:18
2651:6, 2718:8	2362:16	2781:23	2746:24	2547:2
2747:1	2378:18	2782:15	2765:10	2566:24
2768:14	2387:24	wanted 2358:14	wave 2514:15	2574:2, 2619:3
volume 2327:18	2389:24	2364:5, 2364:7	2710:1	2648:9, 2659:3
2436:8	2392:1, 2395:1	2379:22	waving 2714:10	2668:1
2491:17	2395:19	2389:1, 2390:8	way 2345:22	2687:25
2647:18	2397:7	2402:16	2347:10	2693:15
2683:15	2397:13	2402:22	2353:1, 2355:7	2705:2, 2720:9
volumes 2507:3	2397:23	2403:5	2382:7, 2390:4	2736:4, 2769:9
2647:18	2398:2, 2400:4	2403:16	2408:3, 2408:5	2769:11
2648:7	2412:19	2417:5	2424:8	2769:14
volumetric	2413:16	2422:23	2426:21	2769:20
2430:9	2417:6	2438:19	2427:11	2781:22
voluminous	2419:13	2529:18	2465:18	weak 2540:20
2453:11	2443:22	2535:3	2481:23	2704:21

Volume 8
9/29/2021

EIB Ozone Hearing

2704:24 weakened 2608:21 2609:16 web 2439:10 Webex 2327:15 week 2364:9 2364:16 2377:2, 2441:2 2578:21 2611:4 weekly 2431:18 2435:7 2452:10 2561:1 2575:17 2704:25 2709:1, 2709:3 2709:6, 2709:8 2709:8 2709:13 2776:5, 2776:7 weeks 2546:5 2568:5 2658:16 2716:4 weigh 2415:2 2456:14 2561:25 weight 2641:2 2754:12 2755:20 2755:25 welfare 2755:3 2755:16 2756:4, 2756:9 well-being 2373:15 2501:12 2502:6 2503:18 wellbore 2703:11 2703:13 wellhead 2453:4 2525:15 2525:19 2525:20 2527:17 2539:11 2539:19 2557:18 2557:19 2557:21 2557:23 2558:1, 2608:7 2608:8, 2608:9 2608:13 2625:22 2626:2, 2626:4 2749:5	2749:18 2752:11 2752:23 2763:2, 2763:6 wellhead-only 2525:10 2525:21 2526:8 2526:10 2526:15 2544:23 2545:1, 2557:4 2558:6 2558:11 2558:12 wellheads 2555:8 2557:14 wells 2339:11 2358:4 2368:18 2486:8 2494:21 2497:15 2510:18 2540:22 2541:3 2553:15 2553:20 2553:21 2553:24 2553:25 2554:3 2554:12 2554:18 2554:19 2555:4 2555:20 2555:23 2557:3, 2557:4 2558:2, 2558:4 2601:15 2607:17 2611:5 2611:10 2611:18 2611:20 2611:21 2611:22 2612:1, 2612:6 2612:13 2612:14 2612:16 2612:18 2612:21 2612:23 2625:3, 2625:4 2625:14 2625:19 2631:10 2642:10	2644:12 2644:14 2651:21 2651:21 2652:10 2668:19 2669:14 2669:19 2671:20 2671:21 2671:23 2672:3 2692:18 2699:12 2699:14 2700:19 2700:25 2701:2, 2701:8 2701:10 2701:15 2703:1, 2703:1 2703:14 2703:16 2708:18 2708:19 2708:25 2721:14 2730:23 2745:5 2762:20 2762:24 2763:13 2775:1 2776:14 2776:15 2776:16 welts 2658:14 2658:15 went 2359:16 2364:10 2364:14 2364:16 2435:20 2437:16 2455:16 2463:24 2467:17 2473:1 2477:13 2616:3, 2631:1 2658:22 2703:6, 2703:6 2722:22 west 2407:11 Western 2329:15 2339:23 2465:25 2578:8 2621:23 2633:17 2681:16	wet 2584:11 Wewatta 2333:5 What'd 2495:18 Wheat 2331:10 wheel 2443:23 whichever 2636:12 Whit 2332:16 2399:20 whit.swift@b... 2332:20 wholeheartedly 2651:18 Whoops 2751:10 wide 2724:19 widely 2584:9 WildEarth 2331:8 2331:13 WILKINS 2332:15 WILLIAM 2328:8 willing 2373:14 2465:17 2652:13 wind 2491:1 2559:13 2565:6 2630:13 2630:15 2630:17 2631:3 2631:13 2656:3, 2656:4 2656:7, 2658:3 2659:8, 2723:7 2723:7 2723:11 2723:11 2724:1, 2724:1 2724:4, 2724:4 2724:7 2724:10 2724:16 2724:16 2724:19 windmills 2630:16 window 2443:14 2737:18 wires 2423:22 wise 2549:15 wish 2523:16 wishes 2764:2 withdrawing 2362:9 2362:11 2416:14 2416:18 withdrawn 2469:12 WITHERSPOON	2334:3 witherspoon... 2334:7 witness 2351:3 2355:24 2363:19 2363:21 2375:4, 2417:7 2417:9 2463:13 2467:3 2474:20 2480:17 2482:25 2483:21 2512:1, 2537:9 2561:20 2582:12 2590:17 2716:3 2716:16 2730:6 witnesses 2335:3, 2336:3 2337:3, 2467:1 2513:1 2635:10 2639:16 2642:7 2677:12 2710:24 2714:21 2779:5 2780:12 witnessing 2652:18 wonder 2350:14 2379:3 2712:12 wondering 2344:1 2398:21 2453:19 2486:15 2582:14 2617:1 2632:21 2635:7 2699:22 2700:1 2710:15 2711:21 2712:16 2730:23 2738:19 2741:17 2743:23 2768:22 2774:9, 2781:5 wonky 2684:18 word 2348:9
--	--	--	--	--

Volume 8
9/29/2021

EIB Ozone Hearing

2403:13 2630:6 wording 2529:20 words 2602:11 work 2359:12 2359:19 2359:25 2372:6, 2373:2 2397:8, 2403:7 2408:6 2410:21 2415:3 2415:12 2421:3 2443:21 2471:4, 2491:4 2495:16 2497:2 2499:14 2499:24 2501:11 2501:21 2502:13 2506:2, 2509:9 2535:25 2580:3, 2580:7 2581:10 2592:12 2616:3 2685:11 2698:19 2701:2, 2701:2 2722:12 2728:19 2742:12 2746:20 2750:7 2750:15 2750:23 workable 2528:8 worked 2343:15 2391:10 2391:19 2402:23 2411:7, 2505:9 2520:11 2547:1 2658:11 2738:17 2746:22 workers 2497:23 2506:7 working 2371:24 2396:5 2410:22 2412:8 2421:21 2458:19 2459:19 2469:6, 2497:5 2507:15	2509:2, 2509:7 2511:10 2549:9 2592:20 2643:12 2660:24 2718:10 works 2402:17 2410:20 2742:11 world 2372:7 2373:18 2502:4 2599:18 2659:7 2659:19 2721:18 2721:19 world's 2372:3 worldwide 2372:9 worms 2710:16 worried 2372:11 worse 2365:9 2652:1 2658:25 2675:6 worsen 2495:11 worsens 2509:16 worst 2658:12 2659:3 worth 2704:8 2723:25 wound 2424:24 Wow 2413:23 2514:9 Wozniak 2333:22 wrap 2339:23 2423:17 2551:17 2711:14 2715:7 2774:13 wrapped 2716:15 write 2706:16 2758:14 writing 2755:10 written 2351:6 2405:7 2513:18 2516:14 2597:12 2599:12 2610:17 2616:19 2627:16 2744:12 2748:9, 2768:8 wrong 2378:22 2381:20 2482:4	2638:11 2659:21 2680:8 wrote 2652:18 www.env.nm.g... 2338:4 Wyoming 2542:23 2544:6 2554:15 2583:24 2721:12 X XX 2538:13 XXa 2338:6 2538:14 2539:1 xylene 2495:5 Y Yazzie 2365:24 2370:12 2373:25 yeah 2388:3 2402:2 2405:10 2413:1 2413:25 2417:22 2420:3, 2441:2 2453:10 2465:4 2485:19 2485:19 2486:17 2487:5, 2530:8 2555:22 2557:10 2562:11 2562:13 2584:13 2585:9, 2586:6 2587:5, 2587:6 2615:20 2618:11 2619:1, 2619:2 2620:11 2620:22 2628:6, 2628:8 2628:14 2629:8, 2630:4 2633:14 2635:21 2636:17 2654:8, 2702:5 2702:21 2702:25 2706:3 2714:23	2728:17 2729:11 2731:15 2732:19 2736:17 2781:12 year 2340:16 2340:16 2372:15 2403:1, 2403:2 2403:3, 2432:3 2432:4, 2432:5 2432:9 2432:11 2447:4, 2468:9 2468:17 2490:20 2491:7, 2510:2 2518:22 2520:7, 2520:9 2520:22 2525:25 2540:4 2540:13 2543:8 2545:11 2545:21 2546:3 2551:15 2551:16 2551:19 2553:4, 2554:5 2566:4, 2568:5 2568:6, 2569:7 2569:20 2600:19 2600:22 2601:11 2601:13 2608:7, 2608:9 2608:10 2608:14 2608:15 2608:17 2609:7, 2609:8 2609:11 2609:13 2644:8 2648:22 2648:23 2655:22 2673:16 2673:18 2673:21 2673:21 2680:19 2687:18 2687:19 2688:19 2688:20 2688:21	2688:22 2689:22 2689:23 2689:24 2690:1 2704:13 2707:8, 2707:9 2719:12 2719:17 2738:25 2738:25 2752:2 2756:16 2758:19 2761:14 2761:23 2765:9 years 2367:12 2374:20 2391:7, 2403:2 2436:7, 2497:7 2505:10 2509:2, 2509:4 2526:1 2526:17 2546:25 2592:13 2596:19 2605:8, 2655:6 2655:7 2655:24 2658:10 2658:22 2675:14 2706:22 2707:3, 2723:5 2723:25 2737:13 2746:15 2749:19 2753:9 2753:25 2758:24 2761:25 2782:8 yep 2728:13 yesterday 2512:17 2537:6 2538:16 2560:19 yield 2646:19 2720:8 yielded 2678:25 yields 2647:21 2674:17 2679:22 2689:6 young 2372:6 2372:9 2372:12
--	---	--	--	--

Volume 8
9/29/2021

EIB Ozone Hearing

2372:18 2372:20 2373:13 2373:17 2752:12 youth 2367:15 2372:24 2495:13 2505:5 YY 2339:10 2538:18 2539:2	2528:4, 2530:4 2539:20 2539:25 2554:15 2582:11 2582:16 2582:18 2593:16 2595:15 2596:22 2598:21 2600:15 2600:24 2601:19 2623:19 2624:12 2624:17 2624:22 2626:13 2626:18 2629:5, 2629:6 2631:2 2631:15 2683:24 2718:11 2719:16 2739:19 2739:23 2749:5, 2749:9 2749:17 2752:23 2763:7 1,019 2599:5 1,200 2597:3 1,259 2603:24 1,268 2599:5 1,318 2602:18 1,351 2597:24 1,370 2602:25 2706:13 1,420 2567:15 1,658 2602:9 2618:17 2618:20 1,949 2603:10 1.018 2673:21 1.1 2372:15 1.18 2676:24 1.2 2396:17 2403:24 1.222 2673:18 1.25 2604:21 2619:16 1.4 2491:8 1.6 2604:22 2619:16 2675:17 1:00 2365:20 2374:5 2480:23 2487:21	2488:2 2488:10 2511:15 10 2359:5 2359:20 2378:25 2431:17 2431:20 2480:10 2481:5 2485:13 2486:22 2515:2 2540:12 2544:20 2546:25 2547:19 2548:17 2553:4, 2608:7 2608:8, 2625:8 2641:2, 2665:8 2668:12 2669:8 2688:18 2688:19 2703:15 2727:22 2748:3 2753:25 10:23 2422:12 10:45 2422:10 10:46 2422:13 100 2340:16 2558:15 2605:11 2646:6, 2646:9 100,000 2554:22 1000 2328:23 1001-9 2340:7 1001-9-E 2406:3 1001-9EI 2405:13 1030 2339:12 104 2327:23 10-minute 2742:11 11 2338:19 2340:14 2359:5 2359:20 2378:25 2481:5 2485:13 2486:22 2551:16 2554:6 2615:24 2619:21 2669:4 2669:12 1100 2333:23	111 2332:17 1117 2330:13 112 2435:1 112A.(10 2473:9 1144 2333:13 116 2428:17 2433:25 2441:10 2524:20 2538:2 2697:11 2710:7 2710:21 2710:25 2717:19 116C 2514:7 116C.(1)(e 2513:23 116D 2527:2 2605:21 117 2714:19 1190 2328:18 12 2490:21 2600:19 2600:22 2601:11 2670:2, 2673:6 2687:19 12/12/23 2783:20 12/31/2021 2783:18 12:00 2480:8 12:16 2487:21 2488:1 120 2604:12 121 2328:22 122 2714:20 123 2714:22 2714:23 1239 2329:9 2332:22 124 2714:23 125 2333:18 2687:3 12898 2759:8 12915 2339:15 13 2474:1 2495:24 2495:25 2497:20 2549:23 2578:17 130,000 2369:6 2493:15 2655:14 13926-13934 2338:17 14 2509:2 2676:21 14,300 2593:22	2595:24 1405 2331:19 15 2391:7 2439:25 2513:19 2514:6, 2516:6 2516:16 2553:23 2639:19 2703:15 2758:24 15,064 2599:11 15,929 2599:10 150 2593:23 2595:25 2674:23 150,000 2691:22 1508 2328:12 153,000 2610:12 1555 2330:4 16 2372:9 2379:4, 2514:6 2526:13 16.7 2673:25 1601 2333:5 168 2594:19 169 2594:20 16th 2333:23 2526:4, 2642:3 17 2340:17 17,400 2518:24 18 2725:17 18,000 2490:14 2691:8 186-88 2338:10 187 2598:22 19 2670:22 19,000 2596:21 2624:12 2749:21 2752:10 1964 2757:10 1990s 2569:12 2571:10 1994 2759:7 1996 2468:24 2469:5 2469:23 2469:25 2470:6, 2668:6 2678:20 2697:23 2698:3 2698:16 2699:22 2700:15 2753:9 1999 2374:20 19th 2526:23 2558:21 1st 2526:18
Z				
zero 2370:5 2370:6 2503:15 2503:15 2584:24 2618:5, 2618:6 2618:10 2653:15 2653:15 2722:3, 2722:5 2777:9 Zhang 2338:12 2543:5 Zoom 2395:21 ZZ 2339:13 2538:18 2539:2				
0				
0 2549:12 0.04 2566:3 0.2 2554:4 0.4 2554:4				
1				
1 2335:8 2339:5, 2387:6 2401:4, 2402:1 2428:11 2445:14 2448:5, 2448:5 2452:14 2568:16 2570:25 2584:12 2759:21 1)(a 2435:8 1,000 2391:20 2392:22 2394:15 2394:20 2394:24 2400:2 2527:17				

Volume 8
9/29/2021

EIB Ozone Hearing

2526:19 2526:20 2558:14 2558:15 2558:15	2567:20 2569:12 2584:10 2673:7, 2673:8 2673:9 2674:21 2714:8 2746:15 2782:7 20.1.1 2364:25 2375:25 20.2.50 2327:4 2338:8 20.2.50.112 2472:11 20.2.50.116 2428:8 2639:11 2748:8 2748:24 200 2545:10 2546:3 2000 2752:2 2002 2758:19 2005 2754:24 2759:15 2006 2339:5 2351:17 2008 2351:19 2755:7 2009 2456:2 201 2331:14 2010 2351:21 2011 2351:21 2012 2346:11 2346:21 2602:24 2698:17 2014 2339:21 2599:2 2599:14 2603:17 2603:22 2607:16 2015 2340:6 2549:22 2606:18 2698:16 2746:14 2016 2340:10 2461:23 2463:21 2470:16 2470:17 2552:11 2599:14 2602:16 2602:22 2606:19 2607:4 2676:19	2676:23 2677:2 2677:12 2681:20 2682:18 2778:14 2017 2339:18 2340:17 2604:14 2758:24 2018 2338:10 2339:15 2340:13 2340:14 2469:5 2540:20 2541:15 2544:8 2544:11 2549:18 2551:13 2554:10 2604:11 2604:15 2019 2469:6 2541:17 2542:12 2546:7 2600:12 2602:24 2603:4 2651:18 2652:9, 2668:9 2678:24 2697:24 2698:1 2698:23 2700:15 2706:14 2020 2338:14 2338:17 2338:19 2339:12 2543:5 2543:15 2543:16 2543:19 2544:9 2544:12 2551:13 2553:18 2603:6, 2603:8 2609:22 2611:25 2619:3, 2619:9 2627:21 2021 2327:13 2338:8 2338:22 2338:24 2340:24	2545:19 2605:10 2024 2526:18 2558:14 2025 2526:19 2558:15 2026 2526:20 2558:16 205 2618:5 20-minute 2565:7 2566:24 21 2327:21 2429:25 2430:7 2430:19 2436:17 2561:14 2565:21 2574:23 2575:17 2575:20 2606:3 2672:19 2708:17 2783:18 21,000 2689:14 21.6 2670:11 21-27 2365:17 2488:8 21-27(R 2327:3 2131 2329:20 216 2333:23 216-1430 2333:19 2168 2332:23 21s 2619:23 21st 2605:10 22 2338:14 2473:21 2612:25 222 2333:18 228 2594:20 229-1421 2332:12 22nd 2359:23 23 2390:24 2452:14 2474:2, 2493:1 2497:21 2513:25 2514:8 23,000 2608:23 2626:3 2300 2332:17 2307 2332:5 2367 2335:5 2371 2335:7 2387 2335:9 2398 2335:9 2399 2335:10	23rd 2384:8 2384:11 24 2335:8 2367:9, 2387:6 2549:21 2567:16 2567:25 2568:4 2569:17 24,000 2551:4 2400 2335:10 2402 2335:11 2406 2335:11 2428 2335:14 2441 2335:14 2447 2335:15 2448 2335:15 245 2329:5 2490 2335:17 2492 2335:19 2496 2335:21 24th 2442:13 2443:3 2526:24 2528:22 25 2372:9 2432:9 2432:11 2497:6 2580:12 2608:9 2608:10 2609:6, 2609:8 2609:11 2609:12 2652:2 2653:25 2654:2 2660:21 2660:23 2688:19 2688:20 2689:22 2689:23 2689:24 2690:1, 2753:9 25,000 2468:9 2500 2335:23 2504 2336:5 2508 2336:7 2515 2336:9 2524 2336:11 25287 2330:20 2331:5 2529 2336:11 2531 2336:12 2537 2336:14 2539 2338:6 2338:7, 2338:9 2338:11 2338:12
2				
2 2329:16 2335:8 2338:22 2387:6 2396:15 2396:24 2401:4, 2402:1 2403:20 2435:13 2439:4 2528:18 2528:19 2543:20 2639:10 2669:20 2670:22 2670:24 2,000 2582:17 2629:6 2723:24 2727:4, 2727:5 2728:23 2739:24 2739:25 2,012 2602:20 2,080 2719:13 2,200 2597:1 2,230 2606:21 2,235 2599:7 2,285 2602:19 2,300 2600:1 2,375 2602:25 2603:4 2706:14 2,384 2603:10 2,600 2597:2 2600:1 2,619 2599:10 2,700 2596:18 2609:24 2749:18 2,752 2599:7 2.2 2490:21 2.3 2549:24 2.8 2491:7 2.9 2543:8 2:50 2576:11 20 2340:16 2546:17 2566:13 2566:17 2567:2, 2567:6 2567:13				

Volume 8
9/29/2021

EIB Ozone Hearing

2338:15 2338:18 2338:20 2338:23 2339:4, 2339:6 2339:9 2339:10 2339:13 2564 2336:14 2577 2336:15 2578 2336:15 2582 2336:16 2588 2336:16 2591 2336:18 2339:16 2339:17 2339:19 2339:22 2340:4, 2340:7 2340:8, 2340:9 2340:11 2340:14 2340:15 2340:18 2340:21 2340:22 2340:23 26 2359:23 2654:3, 2654:4 2659:9 2708:19 260,000 2551:18 2613 2336:19 2620 2336:19 2621 2336:20 2624 2336:20 2627 2336:21 2637 2337:5 2650 2337:9 2654 2337:11 2657 2337:13 2661 2337:15 2665 2337:5 2694 2337:6 2696 2337:6 27 2335:13 2336:8 2336:10 2336:13 2336:17 2337:4 2337:16 2337:20 2337:24 2359:8, 2428:2 2462:7, 2486:3 2486:6 2515:16 2524:13 2537:11 2591:6	2637:13 2656:20 2656:21 2656:22 2665:2 2667:21 2717:7, 2743:7 2774:19 27.9 2674:1 2708 2337:7 2710 2337:7 2713 2341:4 2717 2337:17 2729 2337:18 2735 2337:18 2738 2337:19 2743 2337:21 2341:6, 2341:7 2764 2337:21 2766 2337:22 2771 2337:22 277-2146 2330:14 2774 2337:25 27S 2341:4 28 2682:5 2682:22 2683:9 2683:22 28,000 2691:21 286 2594:19 2606:16 2614:7 2614:23 29 2481:6 2487:5, 2487:6 2487:12 2565:21 2566:6 29th 2327:12 2605:9 3 3 2333:21 2435:24 2439:24 2543:17 2543:24 2611:23 2683:16 2760:3 3,000 2629:7 3,202 2604:15 3,365 2598:5 3,453 2599:9 3,500 2675:16 3,506 2604:5 3,600 2593:19 2595:20 2598:9	2719:18 3,800 2597:1 3,832 2604:14 3,900 2689:14 3.14 2630:22 3.2 2697:1 3.7 2543:9 3:05 2576:10 2576:12 30 2338:24 2526:18 2545:22 2557:24 2558:14 2566:18 2584:10 2594:10 2602:13 2639:12 2683:12 2761:25 300 2669:15 2669:16 2671:7, 2671:8 2671:13 2671:25 2672:4, 2674:2 300,000 2690:7 301 2331:13 303 2330:5 2331:6 2331:11 2333:7 2333:14 2333:24 31 2481:6 31,000 2689:16 3150 2327:22 317 2597:16 2598:24 32 2428:10 2481:6 325 2332:5 3300 2333:13 33A 2544:5 2565:2 2565:20 34 2481:6 34,000 2520:8 2609:21 2690:5 34,158 2611:20 340 2607:22 343-2782 2329:21 349 2597:17 2598:24 2616:1 35 2481:6 2526:19 2526:20	2655:6 35,000 2593:25 2624:11 350 2329:13 350,000 2692:5 361 2338:10 37 2355:15 2490:19 2551:15 2670:24 2715:1 3798 2331:9 38 2481:6 4 4 2436:15 2440:14 2441:1, 2682:4 2683:21 4)(b 2436:17 4,000 2545:21 2652:10 4,220 2602:19 4,385 2603:1 2706:15 4,500 2596:19 2749:19 4:22 2635:25 4:23 2636:24 4:40 2636:19 2636:25 4:45 2636:9 40 2340:5 2340:12 2490:25 2637:25 2672:14 2674:22 2684:15 407-4455 2333:24 409 2329:16 40th 2329:4 41 2637:25 2637:25 42 2565:19 2676:24 42,000 2689:18 43 2637:25 43,982 2644:14 442-0610 2330:5 454-2514 2333:7 46 2481:6 2487:5, 2487:6 2487:12 2490:20 460 2687:3 47 2481:6 470-8215 2328:24	472-7800 2332:18 48 2481:6 480 2329:6 49:1 2339:21 490-4054 2328:13 5 5 2331:20 2340:7 2370:14 2370:15 2370:17 2370:18 2370:20 2370:21 2374:1, 2374:2 2405:12 2406:2 2436:20 2440:8, 2466:6 2547:11 2547:12 2548:17 2611:23 2618:3, 2646:9 2676:21 2697:2 5)(b 2437:1 5,700 2596:20 2749:20 5,800 2596:21 2624:13 2749:22 2752:10 5,900 2689:16 5:00 2365:20 2374:5 2511:15 2511:16 2649:13 50 2448:7 2448:21 2448:22 2449:1, 2449:5 2449:8, 2449:9 2459:1, 2481:6 2491:1 2517:24 2640:18 2646:7, 2646:9 2696:19 2707:2 500 2394:16 2394:21 2394:21 2501:9, 2546:3 2582:16 2605:13
---	---	---	--	---

Volume 8
9/29/2021

EIB Ozone Hearing

			8	9
2607:17	2338:13	2474:1		
2629:6	2341:6, 2351:2	68 2477:1		
2726:16	2437:5	2477:22	8 2327:18	9 2339:21
2726:23	2457:24	2691:8	2331:10	2650:23
2727:19	2683:9	68,000 2692:5	8,000 2689:17	9.5 2670:22
2739:23	2743:15	680 2609:23	8,082 2706:18	9:00 2343:7
2740:2, 2740:7	2743:20	69 2602:6	8,400 2520:7	2365:20
2740:10	2777:11	69,000 2691:8	2609:20	2374:5
501-5763	6,000 2675:15	694-6609 2334:6	8,760 2567:8	2374:12
2331:11	6,400 2606:24	6th 2451:11	2567:21	2511:15
505 2327:24	6.5 2520:22	2513:22	8:21 2782:23	90 2531:6
2328:13	2680:10		8:30 2327:15	2532:21
2328:19	2680:13	7	2342:13	2625:8
2328:24	2680:15		2374:12	2672:17
2329:10	2686:21	7 2341:7	2422:7	2684:17
2329:17	6/28/2021	2405:16	2781:11	900 2333:6
2330:14	2611:19	2405:18	2782:12	2546:2
2331:15	6:00 2716:16	2405:20	2782:21	90s 2700:9
2331:21	6:01 2693:8	2437:12	8:7 2338:21	2700:13
2332:6	6:10 2693:7	2474:4, 2516:6	80 2672:17	2700:17
2332:24	2693:9	2516:15	2684:15	2700:18
2333:19	6:40 2714:7	2525:20	2753:20	2700:19
2488:17	60 2340:6	2525:23	80033 2331:10	910 2332:11
505-3900 2329:6	2340:12	2615:14	80202 2333:6	9-13 2340:10
5080 2329:4	2372:10	2682:23	2333:14	917 2673:17
509 2673:21	2455:15	2683:16	2333:24	92 2644:11
51 2339:18	2531:6	2743:16	80225-0287	92123-5398
512 2332:18	2532:21	2743:20	2330:20	2334:6
52 2339:15	2572:2	2744:16	2331:5	93 2547:17
2378:23	2672:16	2760:19	80304 2330:4	2753:12
2481:6	2674:2	2775:7	806-1202	9330 2334:5
2486:20	2684:15	7,131 2551:5	2327:24	95 2571:18
53 2691:4	2712:19	7:20 2742:14	819-9058	2571:22
531,000 2610:14	2737:19	7:27 2338:24	2331:21	2571:23
54:21 2338:16	60,000 2431:17	7:30 2742:13	82 2681:9	2779:24
55.6 2681:9	2431:20	2742:15	827-2985	969-2808 2331:6
56 2378:23	61 2457:22	70 2369:11	2328:19	97 2612:2
2428:11	2673:16	2493:21	84 2651:25	2612:7
2445:14	2712:19	2549:25	844 2490:18	98 2547:18
2448:5, 2481:7	62 2611:21	2572:2	848-1800	2549:11
2486:21	629-0732	2655:22	2332:24	2605:9
567-573 2338:21	2329:17	70(10 2339:12	85 2554:23	982-3873 2332:6
572-6500	63 2461:8	71 2544:13	85024 2329:5	982-9523
2333:14	633 2339:21	2551:14	858 2334:6	2329:10
575 2329:21	63-year-old	2565:14	87102 2328:23	988-9126
2599:23	2705:5	2565:17	87103-2168	2331:15
576 2597:23	64 2465:22	2566:6, 2567:6	2332:23	99,000 2691:16
58 2341:4	65 2372:11	2567:12	87106 2330:13	99.6 2612:1
2712:18	2470:22	713 2332:12	87110 2327:23	2612:7
2712:19	2558:14	720 2330:21	87501 2329:9	
2713:4	2596:19	73 2598:7	2329:17	
5832 2339:18	2737:15	74 2670:24	2331:14	
59 2452:13	2749:19	74-2-5 2779:21	2333:19	
2453:9	650 2599:24	75 2657:20	87504-1508	
2712:19	66 2472:5	75,000 2490:13	2328:12	
5-9 2338:16	660-0108	77002 2332:11	87504-2307	
2564:23	2330:21	78701 2332:18	2332:6	
	660-4305	79 2428:10	87505 2328:18	
	2488:18	79,000 2608:24	2331:20	
6	67 2465:24	7th 2364:8	88001 2329:20	
6 2338:8	2473:19		894 2597:14	