

1 IN THE UNITED STATES DISTRICT COURT
2 SOUTHERN DISTRICT OF NEW YORK
3 Case No. 11 Civ. 3718 (LAK)

4 _____
5 VIDEOTAPED DEPOSITION OF DOUGLAS BELTMAN
6 September 9, 2011

7 _____
8 CHEVRON CORPORATION,
9 Plaintiff,
10 against
11 MARIA AGUINDA SALAZAR, et al.,
12 Defendants.
13 and
14 STEVEN DONZIGER, et al.,
15 Intervenors.

16 _____
17 Pursuant to Notice and the Federal Rules of
18 Civil Procedure, the videotaped deposition of
19 DOUGLAS BELTMAN, called by Defendants, was taken on
20 Friday, September 9, 2011, commencing at 9:05 a.m.,
21 at 1801 York Street, Denver, Colorado, before
22 Kelly A. Mackereth, Certified Shorthand Reporter,
23 Registered Professional Reporter, Certified Realtime
24 Reporter and Notary Public within Colorado.

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2	<p>1 APPEARANCES:</p> <p>2</p> <p>3 GIBSON DUNN</p> <p>4 By Peter E. Seley, Esq.</p> <p>5 Virginia Fitt, Esq.</p> <p>6 1050 Connecticut Avenue, N. W.</p> <p>7 Washington, D.C. 20036-5306</p> <p>8 Phone: 202.955.8500</p> <p>9 Fax: 202.530.9594</p> <p>10 pseley@gibsondunn.com</p> <p>11 vfitt@gibsondunn.com</p> <p>12 Appearing on behalf of the</p> <p>13 Plaintiff</p> <p>14</p> <p>15 SMYSER KAPLAN & VESELKA, LLP</p> <p>16 By Craig Smyser, Esq.</p> <p>17 Garland "Land" D. Murphy IV, Esq.</p> <p>18 700 Louisiana</p> <p>19 Suite 2300</p> <p>20 Houston, TX 77002</p> <p>21 Phone: 713.221.2330</p> <p>22 Fax: 713.221.2320</p> <p>23 cmsyser@skv.com</p> <p>24 lmurphy@skv.com</p> <p>25 Appearing on behalf of the</p> <p>Defendants Javier Piaguaje</p> <p>Payaguaje and Hugo Gerardo Camacho Narajo</p> <p>ZEICHNER, ELLMAN & KRAUSE LLP</p> <p>By Benjamin H. Green, Esq.</p> <p>35 Mason Street</p> <p>Greenwich, Connecticut 06830</p> <p>Phone: 202.622.0900</p> <p>Fax: 203.862.9889</p> <p>bgreen@zeklaw.com</p> <p>Appearing on behalf of the</p> <p>Deponent</p> <p>Also present:</p> <p>Sara McMillen</p> <p>Trevor Brock, Videographer</p> <p>Matt Spalding</p>	4
3	<p>1 *****</p> <p>2 P R O C E E D I N G S</p> <p>3 THE VIDEOGRAPHER: Today's date is</p> <p>4 September 9th, 2011. It's 9:05. We're now on the</p> <p>5 record.</p> <p>6 MR. SMYSER: Reporter, would you swear the</p> <p>7 witness in, please.</p> <p>8 DOUGLAS BELTMAN,</p> <p>9 having been first duly sworn, was examined and</p> <p>10 testified as follows:</p> <p>11 EXAMINATION</p> <p>12 BY MR. SMYSER:</p> <p>13 Q Good morning, Mr. Beltman.</p> <p>14 A Good morning.</p> <p>15 Q How are you?</p> <p>16 A Fine, thank you.</p> <p>17 Q Would you please give us your full name</p> <p>18 for the record?</p> <p>19 A Douglas John Beltman.</p> <p>20 Q Where did you grow up?</p> <p>21 A In Michigan; Grand Rapids, Michigan.</p> <p>22 Q Did you go to high school there?</p> <p>23 A I did.</p> <p>24 Q Where did you go to college?</p> <p>25 A One year at Calvin College in</p>	5
2	<p>1 Grand Rapids, and then University of Rochester is</p> <p>2 where I graduated from --</p> <p>3 Q What did --</p> <p>4 A -- in New York.</p> <p>5 Q I'm sorry. What did you study there?</p> <p>6 A Chemistry.</p> <p>7 Q And you obtained a degree?</p> <p>8 A Yeah, a BS in chemistry.</p> <p>9 Q Did you have any glorified Latin words</p> <p>10 after the end of your degree?</p> <p>11 A Summa cum laude. I was awarded that with</p> <p>12 my bachelor's.</p> <p>13 Q Does that mean with highest honors?</p> <p>14 A Yes, with highest honors.</p> <p>15 Q Congratulations.</p> <p>16 A Thank you.</p> <p>17 Q After obtaining your bachelor's degree in</p> <p>18 chemistry, have you pursued any additional education?</p> <p>19 A Yes, I have. I received a master's in</p> <p>20 what is called land resources from the University of</p> <p>21 Wisconsin in Madison.</p> <p>22 Q When did you start that program?</p> <p>23 A 1987.</p> <p>24 Q What was the focus of your study?</p> <p>25 A At University of Wisconsin, land resources</p>	5

6	<p>1 Q Okay. I would like to talk to you about</p> <p>2 your professional work, your work history, okay?</p> <p>3 A Okay.</p> <p>4 Q After you left the University of</p> <p>5 Rochester, what was your first position?</p> <p>6 A I worked for the Eastman Kodak Company in</p> <p>7 Rochester as a research chemist.</p> <p>8 Q And what did you focus on?</p> <p>9 A I was doing organic research chemistry in</p> <p>10 the research labs at Kodak.</p> <p>11 Q Okay.</p> <p>12 A And I was part of a research group that</p> <p>13 was given free rein to study whatever we wanted to.</p> <p>14 I focused on organic synthesis of some organic</p> <p>15 compounds.</p> <p>16 Q Okay. Did you also work in a cancer</p> <p>17 research lab?</p> <p>18 A I did. After I worked at Eastman Kodak</p> <p>19 and took a break, I then worked at a cancer research</p> <p>20 lab, also in Rochester.</p> <p>21 Q And what was the focus of your work there?</p> <p>22 A I was focusing on a very specific issue of</p> <p>23 trying to do chemical synthesis to come up with a new</p> <p>24 way to isolate RNA as part of cancer research</p> <p>25 studies.</p>	8
7	<p>1 Q Did you succeed?</p> <p>2 A Not really.</p> <p>3 Q Okay.</p> <p>4 A Partially.</p> <p>5 Q And then you went and obtained your</p> <p>6 master's degree?</p> <p>7 A Yes.</p> <p>8 Q And after your master's degree, what was</p> <p>9 your work history?</p> <p>10 A My first job after my master's was with</p> <p>11 the U.S. Environmental Protection Agency in the</p> <p>12 regional office in Chicago, and I worked in the</p> <p>13 Superfund office.</p> <p>14 Q And you were there for roughly two years?</p> <p>15 A Two years, yes.</p> <p>16 Q And '90 to '92?</p> <p>17 A Yes.</p> <p>18 Q What were your responsibilities?</p> <p>19 A My position title was ecologist, and my</p> <p>20 responsibility was to investigate and reach</p> <p>21 conclusions and provide recommendations to the</p> <p>22 managers of Superfund sites about the impacts that</p> <p>23 the Superfund sites were having on ecological</p> <p>24 resources, and what could be done as cleanup to fix</p> <p>25 those impacts.</p>	9
6	<p>1 Q So you were involved in deciding what</p> <p>2 might be necessary to remediate those Superfund</p> <p>3 sites?</p> <p>4 A Indirectly. My focus was on studying what</p> <p>5 the impacts were to the ecological resources,</p> <p>6 providing recommendations to the project managers,</p> <p>7 but after those recommendations were provided, I had</p> <p>8 little control.</p> <p>9 Q Okay. How many sites do you think, if you</p> <p>10 can remember, you worked on?</p> <p>11 A About 60.</p> <p>12 Q Okay. What is a Superfund site?</p> <p>13 A A Superfund site, there are different</p> <p>14 definitions. The definition I'm using is a site that</p> <p>15 has been placed on what is called the national</p> <p>16 priorities list, which is a list of sites designated</p> <p>17 by the EPA that are the most serious, and the sites</p> <p>18 that are most in need of cleanup, of the abandoned</p> <p>19 hazardous waste sites in the country.</p> <p>20 Q What were some of the Superfund sites you</p> <p>21 worked on?</p> <p>22 A At EPA, I -- that regional office focuses</p> <p>23 on the states of Ohio, Michigan, Indiana, Illinois,</p> <p>24 Wisconsin, and Minnesota. I worked at sites in all</p> <p>25 six of those states. They included some sites where</p>	8
7	<p>1 organic chemicals were dumped either into rivers or</p> <p>2 streams, or they were contaminated groundwater like</p> <p>3 the Kalamazoo River in Michigan, Fox River, Green Bay</p> <p>4 up in Wisconsin. There's a Moss-American site in</p> <p>5 Wisconsin I worked on where creosote and polycyclic</p> <p>6 aromatic hydrocarbons were the contaminant. There</p> <p>7 are also some metals sites where -- I can remember</p> <p>8 one site in Wisconsin that was an electroplating</p> <p>9 facility that heavily contaminated nearby stream and</p> <p>10 wetlands with metals that they dumped out of the</p> <p>11 facility.</p> <p>12 Q Did any of the sites involve oil</p> <p>13 pollution?</p> <p>14 A Very few, if any. Oil petroleum is</p> <p>15 excluded from Superfund regulation. So there may</p> <p>16 have been oil at the site, but that wasn't why it was</p> <p>17 a Superfund site.</p> <p>18 Q In the course of your work with EPA, did</p> <p>19 you become familiar with the regulatory standards</p> <p>20 promulgated by the EPA for hazardous substance in</p> <p>21 chemicals and metals?</p> <p>22 A As relates to Superfund, yes. I became</p> <p>23 familiar with the Superfund laws guidance the EPA has</p> <p>24 put out in how to investigate sites, Superfund sites.</p> <p>25 I participated in writing some guidance in how to</p>	9

10	<p>1 look at potential impacts to ecological resources.</p> <p>2 So, yes, I became familiar over time.</p> <p>3 Q And I suppose that in those individual</p> <p>4 states there were also state regulations which would</p> <p>5 apply to those -- to your work, or not?</p> <p>6 A There are state regulations, but one of</p> <p>7 the powers of the Superfund law is that it supersedes</p> <p>8 state or local laws. So if there were state</p> <p>9 standards, for example, about how clean water can be,</p> <p>10 we had to pay attention to that, but we're not bound</p> <p>11 by it.</p> <p>12 Q What did you do after you left the EPA?</p> <p>13 A I joined a company called RCG Hagler</p> <p>14 Bailly, the last word is B-A-I-L-L-Y. It's a</p> <p>15 consulting company. It was a consulting company in</p> <p>16 Boulder, Colorado.</p> <p>17 Q What type of work did you do for -- can I</p> <p>18 just shorten it to RCG?</p> <p>19 A Please.</p> <p>20 Q What type of work did you do for RCG?</p> <p>21 A I was hired as a, I would say, a junior</p> <p>22 level, maybe mid-level scientist. We worked on</p> <p>23 hazardous waste sites, typically Superfund sites, but</p> <p>24 also some oil pollution sites.</p> <p>25 And our focus was and still is on</p>	12
11	<p>1 conducting environmental assessments on behalf of</p> <p>2 government agencies, federal, state, some</p> <p>3 international governments. And we're hired typically</p> <p>4 on litigation cases to provide expert, either expert</p> <p>5 witness or expert consulting services to help the</p> <p>6 government agencies assess the impacts of pollution</p> <p>7 to the environment.</p> <p>8 Q Was a fair amount of your work natural</p> <p>9 resources damages estimates?</p> <p>10 A That's a specific term of art, yes, NRDA.</p> <p>11 Q Did you deal with hazardous waste sites at</p> <p>12 RCG?</p> <p>13 A Yes.</p> <p>14 Q Did you deal with any sites contaminated</p> <p>15 by oil or chemicals or metals associated with oil</p> <p>16 exploration and production?</p> <p>17 A Yes. Although, I can't -- RCG -- RCG</p> <p>18 doesn't exist anymore. And somewhere in the timeline</p> <p>19 we formed Stratus Consulting in 1998. Worked at the</p> <p>20 Guadalupe Oil Field in California on behalf of the</p> <p>21 State of California. I think also the U.S. Fish and</p> <p>22 Wildlife Service. And whether that was -- and that's</p> <p>23 an oil development field contaminated with oil and</p> <p>24 other chemicals used to extract the oil. Whether</p> <p>25 that was -- no, actually, that spanned both RCG and</p>	13
	<p>1 Stratus, so that straddled the time period.</p> <p>2 Q Okay. I'll try to get into your Stratus.</p> <p>3 Trying to take you chronologically here a little bit.</p> <p>4 Who were your clients at RCG?</p> <p>5 A Well, RCG, to be clear, RCG was a fairly</p> <p>6 large consulting company, did a lot of management</p> <p>7 consulting, other things. So those kinds of clients</p> <p>8 could have been many different kinds. Our particular</p> <p>9 practice, the environmental practice, our clients</p> <p>10 were government agencies, typically. In the</p> <p>11 federal --</p> <p>12 Q U.S. Fish and Wildlife Service?</p> <p>13 A U.S. Fish and Wildlife Service, National</p> <p>14 Oceanic and Atmospheric Administration, Department of</p> <p>15 Interior. We did a fair amount of work for EPA,</p> <p>16 although not the Natural Resource Damage Assessment</p> <p>17 because EPA does not have authority for that. But we</p> <p>18 did a lot more policy kind of work, cost benefit</p> <p>19 analysis for EPA.</p> <p>20 States were also big clients. State of</p> <p>21 Montana, we did a large NRDA for -- worked for many,</p> <p>22 many states over the years.</p> <p>23 Q And then you indicated to us, in October</p> <p>24 of 1998, you left or formed, I didn't quite catch</p> <p>25 what you said, Stratus?</p>	

14	<p>1 Q Okay. What does Stratus Consulting do?</p> <p>2 A We do environmental consulting work. Much</p> <p>3 of it is similar to the work I've already described</p> <p>4 in conducting assessments of environmental impacts of</p> <p>5 hazardous waste sites, other kinds of environmental</p> <p>6 impacts such as climate change, cooling water intake</p> <p>7 structures. And we do this on behalf of federal,</p> <p>8 state, international government agencies. We also do</p> <p>9 a fair amount of policy work. And this could be for</p> <p>10 EPA, other government agencies, private foundations,</p> <p>11 international governments who are interested in some</p> <p>12 expert help in thinking about and analyzing</p> <p>13 environmental policy issues.</p> <p>14 Q What do you mean by policy work as</p> <p>15 compared to environmental assessment?</p> <p>16 A Environmental assessment typically is</p> <p>17 focused on a specific site or a specific problem.</p> <p>18 Policy work is broader. It addresses how a</p> <p>19 government agency regulates or will regulate</p> <p>20 environmental issues. So it's typically not</p> <p>21 addressed at a specific site.</p> <p>22 And it also has to do with regulations or</p> <p>23 rules and how the government will monitor or regulate</p> <p>24 environmental issues.</p> <p>25 Q And you performed work in China, South</p>	16
15	<p>1 Africa, the EU, places of that nature?</p> <p>2 A Not me personally.</p> <p>3 Q Stratus?</p> <p>4 A Stratus has. I don't recall South Africa,</p> <p>5 although I think we've done some climate change work</p> <p>6 in South Africa. Although I think we've done some</p> <p>7 climate change work in South Africa.</p> <p>8 Q How about South America?</p> <p>9 A South America, yes. So our climate change</p> <p>10 work, we've done all over the world. Our</p> <p>11 environmental assessment work we've done in the U.S.,</p> <p>12 in China, in the EU, in South America. That's all I</p> <p>13 can recall.</p> <p>14 Q Have you worked for the U.S. Fish and</p> <p>15 Wildlife Service? Have you done work for them?</p> <p>16 A Yes.</p> <p>17 Q Were you project manager of the Fox River</p> <p>18 Green Bay case?</p> <p>19 A Yes.</p> <p>20 Q And I think you mentioned that earlier?</p> <p>21 A Yes, I mentioned it earlier. I worked on</p> <p>22 that site. It's a large site in Wisconsin where the</p> <p>23 river and bay and Lake Michigan are contaminated with</p> <p>24 PCBs. I worked on that site when I was at EPA. I</p> <p>25 also worked on that then as a project manager for the</p>	17
16	<p>1 NRDA on behalf of Fish and Wildlife Service.</p> <p>2 Q I believe you've told us before that all</p> <p>3 the projects you work on are projects that involve</p> <p>4 environmental insult of some kind, most of them</p> <p>5 contamination?</p> <p>6 A That's correct.</p> <p>7 Q And they involve evaluating the impacts of</p> <p>8 that contamination both on the environment and on the</p> <p>9 economics?</p> <p>10 A My focus as a scientist is evaluating</p> <p>11 impact on the environment. Stratus also has</p> <p>12 economists. I work closely with them. They are</p> <p>13 typically responsible for determining the impact</p> <p>14 economically. So it's not me personally, but</p> <p>15 certainly on the projects I work on, yes.</p> <p>16 Q Has your work at a Stratus dealt with</p> <p>17 contamination resulting from hydrocarbons</p> <p>18 contaminating or oil spills?</p> <p>19 A Yes.</p> <p>20 Q Did you work for the National Oceanic and</p> <p>21 Atmospheric Administration on assessing environmental</p> <p>22 impacts from oil or hazardous substances?</p> <p>23 A Yes.</p> <p>24 Q Is an example of that the BP?</p> <p>25 A Yes, we have a -- we currently have a</p>	18
17	<p>1 contract with NOAA to assess the environmental</p> <p>2 impacts from the BP spill in the Gulf. We also have</p> <p>3 a contract with U.S. Fish and Wildlife Service to do</p> <p>4 the same, State of Louisiana, State of Florida and</p> <p>5 Department of Justice.</p> <p>6 Q Can you tell us whether or not, as a</p> <p>7 result of your education and work experience, you've</p> <p>8 developed expertise in evaluating impacts of oil</p> <p>9 pollution and contamination on the environment?</p> <p>10 A Yes, yes, I have. Again, on the</p> <p>11 environment, not humans, per se. It's not my area of</p> <p>12 expertise. But certainly on the environment, yes.</p> <p>13 Q Have you developed expertise in assessing</p> <p>14 the cost to remove oil pollution and contamination in</p> <p>15 the environment?</p> <p>16 MR. SELEY: Objection. Relevance.</p> <p>17 A Evaluating the cost of cleanup is</p> <p>18 something we have to do at many sites. In some</p> <p>19 cases, in NRDA, the damages, the environmental</p> <p>20 damages, are in fact the cost to clean up. So on</p> <p>21 several cases, we have had to -- I have had to</p> <p>22 evaluate the cost to clean up environmental</p> <p>23 contamination. As part of that, yes, I have</p> <p>24 developed expertise.</p> <p>25 Q (BY MR. SMYSER) Have you developed</p>	19

18	<p>1 expertise with respect to the environmental 2 regulations and standards used to assess oil 3 pollution and contamination in the environment? 4 MR. SELEY: Objection. 5 A I have. I have worked less with 6 environmental regulations for oil and petroleum 7 contamination. That tends to be regulated at the 8 state level. And I am not very familiar with all the 9 different state regulations. But at the federal 10 level, the Oil Pollution Act, I am familiar with it. 11 Q (BY MR. SMYSER) Okay. Let's switch to 12 your work and Stratus's consulting work in the 13 Ecuador litigation. Are you with me? 14 A Yes. 15 MR. SELEY: Before we get started on this 16 topic, I just want to interpose an objection to the 17 extent you're asking him about anything beyond his 18 personal knowledge. To the extent that calls for 19 expert testimony or eliciting expert testimony for 20 this case, he hasn't been identified as an expert in 21 the case. He hasn't submitted an expert report. 22 And we'll object to any of the testimony 23 with regard to his expertise or anything beyond his 24 personal knowledge. 25 MR. SMYSER: Okay. And my response to</p>	20	<p>1 MR. GREEN: Hold on. He may answer the 2 question, but I am cautioning the witness not to 3 divulge any communications between he, the witness, 4 and his attorneys. 5 MR. SMYSER: Okay. 6 Q (BY MR. SMYSER) Is it a fact that one of 7 the reasons you decided not to serve as an expert 8 witness in this case was because you had been sued as 9 a RICO defendant in this case? 10 A Yes, that's correct. 11 Q Okay. Now, I would like to discuss with 12 you the role that you and Stratus Consulting served 13 during the Lago Agrio litigation in Ecuador. Do you 14 know what I mean by the Lago Agrio litigation? 15 A Yes, I think I do. It's the lawsuit 16 brought by the plaintiffs in Ecuador against Chevron 17 in Ecuador. 18 Q It's brought by the indigenous peoples in 19 the Amazon rainforest against Ecuador -- I mean, 20 against Chevron-Texaco for their claim that over some 21 three decades the oil exploration and production 22 activities of Chevron-Texaco in their lands despoiled 23 their environment. 24 MR. SELEY: Objection. Misstates facts. 25 Is this your testimony, sir, or are you asking the</p>
19	<p>1 that is, as you know, we have identified him as a 2 non-retained expert witness. And his personal 3 opinions as a matter of past history are a matter of 4 fact in the case. And I intend to ask him about his 5 personal opinions in the past, not about any current 6 opinions. But I understand your objection. 7 Q (BY MR. SMYSER) Well, and let me clear 8 that up. You're here today as a result of a 9 subpoena; is that correct? 10 A Yes. 11 Q You and I have never spoken, have we? 12 A No. 13 Q This is the first time we've laid eyes on 14 each other. 15 A Yes. 16 Q You're aware that I asked your lawyer 17 whether or not you would be willing to serve as an 18 expert witness in this case? 19 A Yes. 20 Q You declined to serve as an expert witness 21 on behalf of the Ecuadorians in this current case? 22 A That is correct. 23 Q And you did that in part because you've 24 been sued as a RICO defendant in this case? 25 MR. SELEY: Objection.</p>	21	<p>1 witness? 2 MR. SMYSER: I'm asking the witness. 3 MR. SELEY: Well, then, ask the witness 4 and let him describe in his words. 5 Q (BY MR. SMYSER) I'm asking, is that a 6 fair description of what you understand the Lago 7 Agrio litigation to be? 8 MR. SELEY: Objection. Same objection. 9 A If the purpose of the question is to 10 identify which litigation of the many we're talking 11 about, yes, that's the litigation I understand we're 12 here to talk about. 13 Q Okay. How would you describe that 14 litigation? 15 A That litigation is a case brought by 16 Ecuadorian plaintiffs, including indigenous people, 17 also local residents, against Chevron, filed in 18 Ecuador for the environmental contamination and its 19 resulting impacts on people and the environment, 20 caused by Texaco's operations in the concession in 21 Ecuador. 22 Q And you were -- Stratus was hired to serve 23 as expert witnesses in that case? 24 MR. SELEY: Objection. Misstates facts. 25 A I don't know if our contracts ever stated</p>

22	<p>1 that we were hired as expert witnesses. We certainly</p> <p>2 provided expert consulting services. I don't know</p> <p>3 that I was ever designated an expert witness in the</p> <p>4 Ecuadorian court, but I don't know how it works in</p> <p>5 the Ecuadorian court system. So I don't know if -- I</p> <p>6 didn't give any testimony in the Ecuadorian court.</p> <p>7 So to my knowledge, I wasn't an expert witness</p> <p>8 designated to the Court.</p> <p>9 Q (BY MR. SMYSER) What was your</p> <p>10 understanding of why you were hired in the case?</p> <p>11 A To provide expert consulting services to</p> <p>12 the Ecuadorian plaintiffs.</p> <p>13 Q And did you do that?</p> <p>14 A Yes.</p> <p>15 Q And, in fact, do you remember whether or</p> <p>16 not Stratus reports were filed in the record in</p> <p>17 Ecuador? Do you have personal knowledge about that</p> <p>18 one way or the other?</p> <p>19 A I don't know that any Stratus reports were</p> <p>20 filed in the record in Ecuador. Work that we</p> <p>21 conducted was filed through the Cabrera report, but I</p> <p>22 don't know that any Stratus reports themselves were</p> <p>23 filed with the Court.</p> <p>24 Q Okay. We'll get to that in a little bit.</p> <p>25 A Okay.</p>	24	<p>1 the extent of the contamination. Where was there</p> <p>2 contamination, what were the likely causes. What</p> <p>3 exactly was the contamination from a chemical</p> <p>4 perspective. And developed opinions about the likely</p> <p>5 causes of that contamination.</p> <p>6 We also conducted work on what could be</p> <p>7 done to address the impacts of the contamination,</p> <p>8 both from a cleanup perspective and also assessing</p> <p>9 compensation that might be due the people in that</p> <p>10 region for living with the contamination for as long</p> <p>11 as they had.</p> <p>12 Q As to that last part, did you analyze the</p> <p>13 remediation necessary to remove the pollution and</p> <p>14 contamination that you found?</p> <p>15 MR. SELEY: Objection. Misstates prior</p> <p>16 testimony.</p> <p>17 A I'm sorry, could you repeat the question?</p> <p>18 Q (BY MR. SMYSER) Sure. As part of your</p> <p>19 work, did you or did you not analyze the remediation</p> <p>20 necessary to remove pollution and contamination?</p> <p>21 A We -- yes, I was part of analyzing the</p> <p>22 soil cleanup, what was needed to -- what is needed to</p> <p>23 clean up the contaminated soil. Also looked at</p> <p>24 cleanup of river and stream sediments and considered</p> <p>25 cleanup of groundwater.</p>
23	<p>1 Q When did your work begin?</p> <p>2 A In 2007.</p> <p>3 Q What was your role personally?</p> <p>4 A I was Stratus's project manager and what</p> <p>5 we call officer in charge, which means, as the</p> <p>6 project manager I was responsible for our day-to-day</p> <p>7 work. And as the officer, I was also responsible for</p> <p>8 our overall financial and scientific performance on</p> <p>9 the project.</p> <p>10 Q Were you responsible for the scientific</p> <p>11 and technical work product?</p> <p>12 A Yes.</p> <p>13 Q Can you summarize for me what Stratus did?</p> <p>14 And I don't mean your ultimate conclusions. What</p> <p>15 your work was.</p> <p>16 A Sure. Our work was to evaluate the data</p> <p>17 on environmental contamination and information on</p> <p>18 Texaco's operation that led to that contamination.</p> <p>19 We didn't collect any data ourselves. We were only</p> <p>20 looking at the data that had been collected by</p> <p>21 others, that included historical data prior to the</p> <p>22 trial, data collected during the trial, data</p> <p>23 collected by Mr. Cabrera, the court-appointed expert.</p> <p>24 We looked at those data and developed --</p> <p>25 we did some data analysis that helped us understand</p>	25	<p>1 Q Did you or Stratus, on the basis of your</p> <p>2 work, reach any conclusions about whether or not the</p> <p>3 environment had been contaminated during Texaco's</p> <p>4 work, in the concession?</p> <p>5 MR. SELEY: Objection. Calls for improper</p> <p>6 expert testimony. And objection to relevance and</p> <p>7 compound.</p> <p>8 Go ahead.</p> <p>9 A I'm sorry, was the question what caused</p> <p>10 contamination or --</p> <p>11 Q (BY MR. SMYSER) No. Did you reach any</p> <p>12 conclusions about whether or not the environment had</p> <p>13 been contaminated during Texaco's work in the</p> <p>14 concession, by their work in the concession?</p> <p>15 MR. SELEY: Same objections.</p> <p>16 A Yes, I did.</p> <p>17 Q (BY MR. SMYSER) And what was that</p> <p>18 conclusion?</p> <p>19 MR. SELEY: Same objections.</p> <p>20 A That conclusion is that Texaco did cause</p> <p>21 environmental contamination as a result of their</p> <p>22 operations.</p> <p>23 Q Did you reach a conclusion as to whether</p> <p>24 or not Texaco operations in the concession complied</p> <p>25 with the industry standards in effect at that time?</p>

26	<p>1 MR. SELEY: Same objections.</p> <p>2 A Yes.</p> <p>3 Q (BY MR. SMYSER) And what was your</p> <p>4 conclusion?</p> <p>5 MR. SELEY: Same objections.</p> <p>6 A That the way that Texaco operated that oil</p> <p>7 field was substandard by industry practices. They</p> <p>8 used practices that were common in the early 1900s,</p> <p>9 but by the time they were conducting the operations</p> <p>10 in Ecuador, these practices were not typically used,</p> <p>11 certainly in the U.S., and in most places in the</p> <p>12 world.</p> <p>13 Q (BY MR. SMYSER) Did you reach conclusions</p> <p>14 as to whether or not Texaco's operations in the</p> <p>15 concessions contaminated and polluted the Amazonian</p> <p>16 rainforest, rivers, streams, soil and groundwater, at</p> <p>17 both well sites and production stations?</p> <p>18 MR. SELEY: Same objections.</p> <p>19 A Yes.</p> <p>20 Q (BY MR. SMYSER) And what were your</p> <p>21 conclusions at that time?</p> <p>22 MR. SELEY: Same objections.</p> <p>23 A That those particular resources you</p> <p>24 mentioned, and places, groundwater, streams,</p> <p>25 rainforest and wells and stations, they all were</p>	28	<p>1 presentation on April 7, 2010, is the date on here.</p> <p>2 MR. SELEY: Hold on, before you ask any</p> <p>3 questions about this, has this document previously</p> <p>4 been produced to us?</p> <p>5 MR. SMYSER: Yeah, you produced it.</p> <p>6 MR. SELEY: I just want to know, this</p> <p>7 exact document?</p> <p>8 MR. SMYSER: Yeah.</p> <p>9 MR. SELEY: Because there were a handful</p> <p>10 of different documents that looked something like</p> <p>11 that.</p> <p>12 MR. SMYSER: My understanding is that you</p> <p>13 produced this document. We're using today a copy</p> <p>14 produced by Chevron.</p> <p>15 MR. SELEY: Okay. It didn't have a Bates</p> <p>16 number on it.</p> <p>17 MR. SMYSER: Yeah, I actually tried to</p> <p>18 remove the Bates -- tried to get a copy that didn't</p> <p>19 have the Bates numbers on it.</p> <p>20 MR. SELEY: Well, do you know what Bates</p> <p>21 number it was?</p> <p>22 MR. SMYSER: I will get it for you. I</p> <p>23 don't know --</p> <p>24 MR. SELEY: I appreciate that.</p> <p>25 MR. SMYSER: -- off the top of my head.</p>
27	<p>1 contaminated by Texaco's operations.</p> <p>2 Q (BY MR. SMYSER) At the time you stopped</p> <p>3 your work on the Lago Agrio litigation, did you feel</p> <p>4 that Stratus had discharged its responsibilities in a</p> <p>5 competent and professional manner?</p> <p>6 A Yes.</p> <p>7 Q Did you stand by those results?</p> <p>8 MR. SELEY: Objection. Vague.</p> <p>9 A Yes, I did then and I still do.</p> <p>10 Q (BY MR. SMYSER) Let me now get into some</p> <p>11 particulars, if I might. Let me hand you what has</p> <p>12 been marked as Exhibit 1.</p> <p>13 (Exhibit 1 marked.)</p> <p>14 MR. SELEY: Do you want to trade the</p> <p>15 marked copy?</p> <p>16 MR. GREEN: Oh, you have the marked copy?</p> <p>17 MR. SELEY: Yeah.</p> <p>18 MR. SMYSER: Thank you.</p> <p>19 Q (BY MR. SMYSER) And we've got a copy of</p> <p>20 it up on the screen in front of you, so you can look</p> <p>21 at it that way. And I'm wondering if you could</p> <p>22 identify this for us.</p> <p>23 A This is a presentation that I put together</p> <p>24 at the request of Steven Donziger. I don't recall --</p> <p>25 I don't recall to whom I gave this particular</p>	29	<p>1 THE REPORTER: One at a time, please.</p> <p>2 MR. SELEY: I'm sorry.</p> <p>3 MR. SMYSER: I can satisfy you now, I</p> <p>4 think.</p> <p>5 MR. SELEY: That would be great.</p> <p>6 MR. SMYSER: CVX-RICO-2268146.</p> <p>7 MR. SELEY: I'm not familiar with that</p> <p>8 Bates number styling --</p> <p>9 MR. SMYSER: Okay.</p> <p>10 MR. SELEY: -- as a Bates number coming</p> <p>11 from one of our document productions. If it is it</p> <p>12 may just be that I'm not familiar with it.</p> <p>13 MR. SMYSER: Okay.</p> <p>14 MR. SELEY: Okay.</p> <p>15 MR. SMYSER: Fair enough.</p> <p>16 Q (BY MR. SMYSER) If you would, I would</p> <p>17 like to ask you to help walk us through this</p> <p>18 presentation.</p> <p>19 A Okay.</p> <p>20 Q Let's go to the first page. Can you tell</p> <p>21 us what you have got on the first page there, where</p> <p>22 it says outline?</p> <p>23 A Yes. This page is an outline of the rest</p> <p>24 of the presentation.</p> <p>25 Q Okay. And I take it that the rest of the</p>

30	<p>1 presentation will cover the various items represented</p> <p>2 by the little square boxes?</p> <p>3 A That's correct.</p> <p>4 Q Okay. Let's go to the first -- the next</p> <p>5 slide. And that's entitled Stratus Consulting?</p> <p>6 A Yes.</p> <p>7 Q Who we are. I think you've already told</p> <p>8 us who you are. And we've discussed your involvement</p> <p>9 in the case?</p> <p>10 A Um-hum.</p> <p>11 Q Let's go to the next slide. Texaco</p> <p>12 history in Ecuador. Let's go to the next slide.</p> <p>13 Can you tell us what that slide</p> <p>14 represents?</p> <p>15 MR. SELEY: Objection. I think you're</p> <p>16 trying to elicit expert testimony from Mr. Beltman</p> <p>17 because the document seems to speak for itself</p> <p>18 otherwise.</p> <p>19 Q (BY MR. SMYSER) You can answer the</p> <p>20 question.</p> <p>21 A This is a map showing Ecuador. And</p> <p>22 highlighted in the northeastern portion of Ecuador in</p> <p>23 the rainforest is the concession within which Texaco</p> <p>24 operated.</p> <p>25 Q I see on the map that there are smaller</p>	32	<p>1 A I have heard and seen video that sour lake</p> <p>2 is the first well production site where Texaco got</p> <p>3 its start in Texas.</p> <p>4 Q About 60 miles from where I live now.</p> <p>5 Lago Agrio was in Texas called Sour Lake.</p> <p>6 What do you mean by concession?</p> <p>7 MR. SELEY: Objection. Calls for expert</p> <p>8 testimony.</p> <p>9 A The term concession is how the area is</p> <p>10 referred to. I'm not sure what the Spanish</p> <p>11 equivalent is, but it's the boundaries that set aside</p> <p>12 the area where Texaco had permission or a contract</p> <p>13 with the government of Ecuador to operate.</p> <p>14 Q And that was your understanding as a</p> <p>15 matter of fact as to what the territory the</p> <p>16 government had granted Texaco in which to operate?</p> <p>17 MR. SELEY: Objection. Vague.</p> <p>18 A That's my understanding, yes.</p> <p>19 Q (BY MR. SMYSER) Let's turn to the next</p> <p>20 slide. This is called Texaco's oil field operations</p> <p>21 in Ecuador. Could you tell us the purpose of this</p> <p>22 slide?</p> <p>23 A This is to summarize the scale of Texaco's</p> <p>24 operations in Ecuador and the time line.</p> <p>25 Q All right. How many wells did Texaco</p>
31	<p>1 names like Sucumbios, Napa or Napo?</p> <p>2 A Yes.</p> <p>3 Q What do those represent?</p> <p>4 MR. SELEY: Objection. Calls for expert</p> <p>5 testimony.</p> <p>6 A Those are provinces within Ecuador or</p> <p>7 counties, maybe. They're political subdivisions</p> <p>8 within Ecuador.</p> <p>9 Q (BY MR. SMYSER) All right. And the</p> <p>10 judgment in this case comes from the Province of</p> <p>11 Sucumbios, which is up in the, I guess, is that the</p> <p>12 northeast corner?</p> <p>13 A Northeast, yes.</p> <p>14 Q We see there one city called Nueva Loja</p> <p>15 and in parens, Lago Agrio. Is that the location of</p> <p>16 the Lago Agrio that gave the name to this litigation?</p> <p>17 MR. SELEY: Objection. Calls for expert</p> <p>18 testimony.</p> <p>19 A That's my understanding, yes, I don't know</p> <p>20 of any other Lago Agrio in this area.</p> <p>21 Q (BY MR. SMYSER) Do you know what Lago</p> <p>22 Agrio means?</p> <p>23 A I believe it means sour lake.</p> <p>24 Q Do you know where the term sour lake comes</p> <p>25 from?</p>	33	<p>1 drill in the concession area?</p> <p>2 MR. SELEY: Objection. Calls for expert</p> <p>3 testimony.</p> <p>4 A The information that I have seen says that</p> <p>5 they have drilled -- they drilled and operated 356</p> <p>6 oil wells. And as the slide says, they also built 22</p> <p>7 what are called production stations where the</p> <p>8 oil-water-gas mixture was processed.</p> <p>9 Q (BY MR. SMYSER) Did you obtain that</p> <p>10 information from documents from Texaco?</p> <p>11 A There are documents from Texaco,</p> <p>12 environmental audits in which they -- these are</p> <p>13 contractors to Texaco and they have counts of wells</p> <p>14 and stations that are similar to these numbers, but I</p> <p>15 don't know if they exactly match these numbers.</p> <p>16 Q It's your understanding, then, that Texaco</p> <p>17 has drilled and operated somewhere around 350 wells,</p> <p>18 oil wells, and built somewhere around 20 production</p> <p>19 stations from 1967 to 1990?</p> <p>20 A Yes.</p> <p>21 MR. SELEY: Objection. Calls for expert</p> <p>22 testimony.</p> <p>23 A Yes, that's correct.</p> <p>24 Q (BY MR. SMYSER) Your next bullet point</p> <p>25 introduces Petroequador. Who is Petroequador?</p>

34	<p>1 A Petroequador is a government-run, oil-</p> <p>2 producing entity run by the government of Ecuador.</p> <p>3 Q And you say they took over operations in</p> <p>4 1990. What do you mean by that?</p> <p>5 A From the documents I've read, in 1990</p> <p>6 Texaco handed over the day-to-day and overall</p> <p>7 operations of the oil field to Petroequador.</p> <p>8 Q And then your next sentence or clause</p> <p>9 indicates that Texaco was out of the consortium in</p> <p>10 1992. What did you mean by that?</p> <p>11 A From the documents I've read, the</p> <p>12 consortium is the group of oil companies and the</p> <p>13 government of Ecuador that together had some sort of</p> <p>14 jurisdiction over the oil field. And Texaco was no</p> <p>15 longer a part of that consortium in 1992.</p> <p>16 Q What does it mean to be an operator of an</p> <p>17 oil well?</p> <p>18 MR. SELEY: Objection. Calls for expert</p> <p>19 testimony.</p> <p>20 Q (BY MR. SMYSER) What was your</p> <p>21 understanding at the time, of what it meant to be an</p> <p>22 operator of an oil well?</p> <p>23 MR. SELEY: Same objection.</p> <p>24 A My understanding of this -- at this</p> <p>25 particular place in the world, Texaco had the</p>	36	<p>1 you obtained the information that comprises the bar</p> <p>2 graph on this slide?</p> <p>3 A Yes. We received a table that had this</p> <p>4 information in it from some technical people in the</p> <p>5 FDA office in Quito, the Defensa de la Amazona.</p> <p>6 Q It looks like in 1973 was the year of</p> <p>7 maximum number of wells opened and operated by</p> <p>8 Texaco?</p> <p>9 MR. SELEY: Objection. Are you asking</p> <p>10 based on his personal knowledge or just what the</p> <p>11 graph shows?</p> <p>12 A Yes, that's correct.</p> <p>13 MR. SELEY: Okay. Move to strike.</p> <p>14 Q (BY MR. SMYSER) Let's look at the next</p> <p>15 slide. This slide looks like another map. Is that</p> <p>16 what it is?</p> <p>17 A Yes, it is. It is another map.</p> <p>18 Q And what is the purpose of the slide? You</p> <p>19 better take us through the little identifiers which</p> <p>20 appear to be telling us something about wells.</p> <p>21 MR. SELEY: Objection. Calls for expert</p> <p>22 testimony.</p> <p>23 A Okay. This is a -- I'm sorry, could we</p> <p>24 zoom back?</p> <p>25 Q (BY MR. SMYSER) Sure.</p>
35	<p>1 authority to make the decisions about how the oil</p> <p>2 field was to be operated. They determined how to</p> <p>3 operate each well, how to handle the waste at the</p> <p>4 wells, manage the day-to-day operations. They in</p> <p>5 essence were in charge of how this oil field</p> <p>6 operated.</p> <p>7 Q Who made the decisions at the oil wells</p> <p>8 about how to handle and dispose of oil well waste?</p> <p>9 MR. SELEY: Objection. Calls for expert</p> <p>10 testimony.</p> <p>11 A From the documents I've read, I don't know</p> <p>12 any individual, if that's what you mean.</p> <p>13 Q (BY MR. SMYSER) No, no.</p> <p>14 A In general, Texaco was responsible for</p> <p>15 those decisions.</p> <p>16 Q Let's look at the next slide. This slide</p> <p>17 is headed wells opened and operated by Texaco. What</p> <p>18 is the purpose of this slide and the information</p> <p>19 conveyed by it?</p> <p>20 MR. SELEY: Objection. Calls for expert</p> <p>21 testimony.</p> <p>22 A This slide is a graph. It shows how many</p> <p>23 wells were opened by year during the period when</p> <p>24 Texaco operated the oil field in Ecuador.</p> <p>25 Q (BY MR. SMYSER) And do you recall where</p>	37	<p>1 A This is a map that is now a blowup of the</p> <p>2 concession area where Texaco operated. And we see on</p> <p>3 this map each colored circle is an oil production</p> <p>4 well opened and operated by Texaco. And you can see</p> <p>5 that the oil wells are grouped in different areas.</p> <p>6 And these groups represent different fields or</p> <p>7 specific areas of operations. And they're</p> <p>8 color-coded.</p> <p>9 So, for example, Shushufindi is an area</p> <p>10 where there was a lot of oil well drilling, a lot of</p> <p>11 oil production. And that's separate from the Sacha</p> <p>12 area. And, again, each circle is an oil production</p> <p>13 well.</p> <p>14 In the yellow --</p> <p>15 Q Excuse me. I don't mean to interrupt --</p> <p>16 A Yeah.</p> <p>17 Q -- but the Sacha wells appear to have sort</p> <p>18 of a green color?</p> <p>19 A Correct.</p> <p>20 Q And then the Shushufindi has kind of a</p> <p>21 purple color?</p> <p>22 A Correct.</p> <p>23 Q And Lago Agrio is, I guess, orange?</p> <p>24 A Yeah, orange-ish.</p> <p>25 Q Okay. I'm sorry I interrupted. I'm</p>

38	<p>1 trying to understand what the colors mean. That's a</p> <p>2 grouping of oil wells?</p> <p>3 A Correct. You can see that the oil wells</p> <p>4 are not spread out evenly over the area of the</p> <p>5 concession. They're grouped. And they're grouped</p> <p>6 according to where putting an oil well will produce</p> <p>7 the most oil. So it's not that there's oil</p> <p>8 everywhere under here necessarily, but because of the</p> <p>9 groupings of the oil wells, it's in pockets.</p> <p>10 Q And I also notice that there are a number</p> <p>11 of what appear to be blue lines and probably rivers.</p> <p>12 Those represent rivers?</p> <p>13 A Yes, the blue lines are rivers.</p> <p>14 Q Is this part of the Amazon River basin?</p> <p>15 A Yes.</p> <p>16 MR. SELEY: Objection. Calls for expert</p> <p>17 testimony.</p> <p>18 A All of the surface water in this area</p> <p>19 flows toward the east and eventually joins the Amazon</p> <p>20 River.</p> <p>21 Q (BY MR. SMYSER) What else is shown on</p> <p>22 this map?</p> <p>23 MR. SELEY: Same objection.</p> <p>24 A Also shown are some of the towns. You see</p> <p>25 Lago Agrio up in the middle-upper portion. El Coca</p>	40	<p>1 pun, a crude schematic of Texaco operations. Could</p> <p>2 you describe what this represented? And did it</p> <p>3 represent how you understood Texaco operations worked</p> <p>4 at the time?</p> <p>5 MR. SELEY: Objection. Calls for expert</p> <p>6 testimony.</p> <p>7 A Yes, this is a schematic that depicts what</p> <p>8 I have read describing how Texaco operated this</p> <p>9 field. You can see the individual wells. And from</p> <p>10 each of these wells, along with the crude oil, comes</p> <p>11 produced water and gas.</p> <p>12 Q (BY MR. SMYSER) And is there a pipeline</p> <p>13 or something that connects the well to the station?</p> <p>14 A Yes. Each well has a pipeline that runs</p> <p>15 to the station. And at the station the gas and the</p> <p>16 crude oil and the produced water are separated.</p> <p>17 Q Okay. And you have a yellow line that</p> <p>18 goes up to a little gas which looks like a flame</p> <p>19 coming out of it.</p> <p>20 A That represents my understanding of how</p> <p>21 Texaco handled the gas that came out of the wells.</p> <p>22 They would typically flare them in basically pipes</p> <p>23 that were set on fire. And they would burn the gas</p> <p>24 off of that. Although I've also read in Texaco</p> <p>25 documents that the flares didn't operate all the</p>
39	<p>1 is another town in the area. We also see in yellow</p> <p>2 squares what are called the processing stations. And</p> <p>3 these are the locations where the oil-water-gas</p> <p>4 mixture that was produced from each of the individual</p> <p>5 wells were sent and then separated and processed.</p> <p>6 And we also see some of the pipelines in</p> <p>7 the area, in the reddish-salmony lines. You can see</p> <p>8 a pipeline that runs north-south. And then the</p> <p>9 pipeline that runs east-west in the upper part of the</p> <p>10 figure runs to the coast, and that's carrying the</p> <p>11 crude oil from the field to the Pacific coast.</p> <p>12 MR. SELEY: I'm going to move to strike</p> <p>13 the response to the extent it does anything other</p> <p>14 than identify the marks on the map.</p> <p>15 Q (BY MR. SMYSER) Let me ask you, did you</p> <p>16 travel to any of these areas yourself personally?</p> <p>17 A Yes, I did.</p> <p>18 Q All right. So you're familiar with these</p> <p>19 locations based on, or at least some of them, based</p> <p>20 on your own personal eyeball, smell, touch, feel,</p> <p>21 sensory impact when you visited them?</p> <p>22 A Yes.</p> <p>23 MR. SELEY: Objection. Vague.</p> <p>24 Q (BY MR. SMYSER) Let's look at the next</p> <p>25 slide. This appears to be a -- not to make a poor</p>	41	<p>1 time. Sometimes they just vented the gas directly</p> <p>2 into the atmosphere.</p> <p>3 MR. SELEY: Move to strike.</p> <p>4 Q (BY MR. SMYSER) Based on your</p> <p>5 understanding of industry practice and regulations,</p> <p>6 was flaring gas to the environment an accepted</p> <p>7 practice at that time?</p> <p>8 MR. SELEY: Objection. Calls for expert</p> <p>9 testimony.</p> <p>10 A I've seen descriptions of flaring gas to</p> <p>11 the environment at that time in many oil fields.</p> <p>12 What I have read in Texaco's documents, their own</p> <p>13 audits, is that, first of all, venting the gas</p> <p>14 directly to the atmosphere was not standard. And,</p> <p>15 also, their field auditors noticed that many of the</p> <p>16 flaring apparatuses were poorly maintained and were</p> <p>17 causing quite a bit of contamination, both around the</p> <p>18 flare and into the atmosphere.</p> <p>19 MR. SELEY: Objection. Move to strike.</p> <p>20 Q (BY MR. SMYSER) Next, I would like you to</p> <p>21 tell us about the dark blue, I'm a little color</p> <p>22 blind, maybe that's a purple line, arrow, that goes</p> <p>23 from the station to the river with the legend</p> <p>24 produced water. What does that mean?</p> <p>25 MR. SELEY: Objection. Calls for expert</p>

42	<p>1 testimony.</p> <p>2 A Produced water is water that comes up out</p> <p>3 of the wells along with oil. The water occurs in the</p> <p>4 underground formation along with the crude oil, and</p> <p>5 it's not unique to this oil field. You can read</p> <p>6 about produced water in just about every oil field.</p> <p>7 Here, Texaco, after they separated the</p> <p>8 produced water from the crude oil, they dumped the</p> <p>9 produced water essentially out the back of each of</p> <p>10 the processing stations, and either directly or after</p> <p>11 flowing through some streams, that produced water</p> <p>12 made it into rivers.</p> <p>13 MR. SELEY: Move to strike.</p> <p>14 Q (BY MR. SMYSER) Does that mean that</p> <p>15 during the operation of these stations, the produced</p> <p>16 water was dumped directly into streams?</p> <p>17 MR. SELEY: Objection. Calls for expert</p> <p>18 testimony.</p> <p>19 A Yes.</p> <p>20 MR. SELEY: Move to strike.</p> <p>21 Q (BY MR. SMYSER) And was, as best you</p> <p>22 could determine, that a regular practice at Texaco's</p> <p>23 producing stations throughout the concession?</p> <p>24 MR. SELEY: Objection. Calls for expert</p> <p>25 testimony. No personal knowledge.</p>	44	<p>1 pipelines?</p> <p>2 MR. SELEY: Objection. Calls for expert</p> <p>3 testimony. No personal knowledge.</p> <p>4 A Yes.</p> <p>5 Q (BY MR. SMYSER) And what did you learn</p> <p>6 with respect to whether there were oil spills?</p> <p>7 MR. SELEY: Same objections.</p> <p>8 A I have read that there were oil spills</p> <p>9 from pipelines. I've read some personal accounts of</p> <p>10 rivers contaminated with oil from pipeline breaks.</p> <p>11 I've also seen some spills from current operations</p> <p>12 myself.</p> <p>13 MR. SELEY: Move to strike as hearsay.</p> <p>14 Q (BY MR. SMYSER) Does crude oil spilled in</p> <p>15 the environment contain chemicals which are hazardous</p> <p>16 to the environment?</p> <p>17 MR. SELEY: Objection. Calls for expert</p> <p>18 testimony.</p> <p>19 A Yes.</p> <p>20 MR. SELEY: Move to strike.</p> <p>21 Q (BY MR. SMYSER) Does it contain chemicals</p> <p>22 that are hazardous to animal life?</p> <p>23 A Yes.</p> <p>24 MR. SELEY: Objection. Calls for expert</p> <p>25 testimony. Move to strike.</p>
43	<p>1 A I've seen -- I've seen the pipes where</p> <p>2 they did the dumping at some of the stations. I've</p> <p>3 also read Texaco's reports where they say that they</p> <p>4 did dump all the produced water directly.</p> <p>5 MR. SELEY: Move to strike.</p> <p>6 Q (BY MR. SMYSER) What stations did you</p> <p>7 particularly personally observe pipelines that took</p> <p>8 produced water into the streams?</p> <p>9 A I have seen the pipes at Sacha Central,</p> <p>10 Sacha Sur, or Sacha South. That's all I can recall</p> <p>11 right now.</p> <p>12 Q Okay. Your last arrow has crude, and it</p> <p>13 goes up to a dark black line to Esmeraldas. What</p> <p>14 does that mean?</p> <p>15 MR. SELEY: Objection. Calls for expert</p> <p>16 testimony.</p> <p>17 A The crude oil that came up out of the</p> <p>18 wells and then was separated at the stations was</p> <p>19 piped to Esmeraldas, which is a town on the coast of</p> <p>20 Ecuador, and piped through what is called the Trans</p> <p>21 Ecuadorian Pipeline. And from there it was put in</p> <p>22 oil ships and sent to refineries.</p> <p>23 Q (BY MR. SMYSER) In the course of your</p> <p>24 work in the concession, did you ever have occasion to</p> <p>25 learn whether there were oil spills from these</p>	45	<p>1 Q (BY MR. SMYSER) Was it your opinion that</p> <p>2 at the time the oil spills would present a hazard to</p> <p>3 the environment where those spills occurred?</p> <p>4 MR. SELEY: Objection. Calls for expert</p> <p>5 testimony and vague.</p> <p>6 A Specific to the spills from pipelines in</p> <p>7 the streams or the rivers, I haven't seen any data</p> <p>8 that describes those spills very well. The only</p> <p>9 descriptions I've seen are the personal accounts</p> <p>10 where people have described the rivers running black,</p> <p>11 which means that oil is running along the top of the</p> <p>12 river.</p> <p>13 It's hard to say without data whether it</p> <p>14 would be hazardous to the environment. I know from</p> <p>15 experience at oil spills that this particular -- this</p> <p>16 kind of crude oil, it's a medium crude oil. It</p> <p>17 contains things like benzene which are toxic. When</p> <p>18 it's spilled in the environment it can cause</p> <p>19 toxicity, certainly. These particular spills in the</p> <p>20 river, I don't think I've seen data where I could say</p> <p>21 yes, it was in fact causing toxicity.</p> <p>22 MR. SELEY: Move to strike the portions of</p> <p>23 that that were hearsay.</p> <p>24 Q (BY MR. SMYSER) Based on your experience,</p> <p>25 background and training, including your experience</p>

46	<p>1 with oil spills, would you have a reasonable 2 expectation that a spill of that nature of crude oil 3 into this river, rivers, where the river ran black, 4 would be damaging to the environment? 5 MR. SELEY: Objection. Calls for expert 6 testimony. 7 A Yes, I would expect that it would be 8 damaging to the environment. 9 MR. SELEY: Move to strike. 10 Q (BY MR. SMYSER) Was that your opinion at 11 the time? 12 MR. SELEY: Objection. Vague. 13 A At the time when I learned about the oil 14 spills? 15 Q (BY MR. SMYSER) Yes. 16 A Yes. 17 Q Let's go to the -- oh, before we leave 18 this slide. Produced water, if I could direct your 19 attention back to the dumping of the produced water 20 in the streams. 21 Does produced water contain chemicals in 22 it? 23 A Yes, it does. 24 MR. SELEY: Objection. Calls for expert 25 testimony.</p>	48	<p>1 or not that produced water contained chemicals in it 2 that were dangerous to humans, animals and the 3 environment? 4 MR. SELEY: Objection. Calls for expert 5 testimony. 6 A Concluded that this produced water in this 7 oil field does contain chemicals that are hazardous 8 to the environment and to humans. 9 MR. SELEY: Move to strike. 10 Q (BY MR. SMYSER) Let's go to the next 11 slide if we could. This slide is called primary 12 sources of contamination. And actually, it appears 13 to be a group of slides, perhaps maybe a dozen slides 14 or so. And so I would like to ask you -- if you 15 would jump ahead, you can jump ahead and sort of look 16 at the slides that are coming up. 17 A Okay. Thanks. 18 Q Yes. And ask you what was the purpose of 19 this group of slides? 20 MR. SELEY: Objection. Calls for expert 21 testimony. 22 A This group of slides, it's intended to 23 summarize, or maybe organize into, I believe it's 24 five different categories, how the operations of 25 Texaco contaminated the environment.</p>
47	<p>1 Q (BY MR. SMYSER) Are the chemicals in 2 produced water dangerous to animal, human and 3 environment? 4 MR. SELEY: Same objection. 5 A In this case -- in general, yes, but more 6 specifically, there are data on what is in this 7 produced water at this oil field. So specific to 8 this produced water at this oil field, yes, as well. 9 MR. SELEY: Move to strike. 10 Q (BY MR. SMYSER) And did you examine this 11 data with respect to the dangers presented by 12 produced water at the time you did your work in the 13 concession? 14 A I don't mean to be too literal, but, yes. 15 Q Okay. 16 A But, yes. I wasn't in the concession at 17 the time so I don't -- 18 Q Where were you at the time? 19 A In my office looking at the data. So I 20 wasn't looking at data in the field or anything in 21 the field. I was looking at data in my office. 22 Q You were looking at data from produced 23 water tested in the concession? 24 A Yes. 25 Q And what did you determine about whether</p>	49	<p>1 And within this group there's a 2 description of each of these five what are called on 3 this first slide primary sources of contamination. 4 So these are ways to describe what Texaco's 5 operations did to the environment in terms of sources 6 of contamination. 7 Q Okay. 8 MR. SELEY: Move to strike. 9 Q (BY MR. SMYSER) Let me ask you about this 10 first slide. First off, what -- well, you say there 11 are 916 unlined, abandoned pits with wastes from 12 wells. Then you give a source from aerial photo 13 analysis. Could you tell us more about where you got 14 that information? 15 MR. SELEY: Objection. Calls for 16 speculation. 17 A The number of 916 comes from the report of 18 Mr. Cabrera. And in that report he talks about an 19 aerial photography analysis where there are a series 20 of aerial photos of the entire concession. And I 21 think there are three different dates in the '70s and 22 in the '80s and early '90s. And he describes how by 23 looking at those aerial photos you can track the 24 appearance of pits, make out the outlines of pits at 25 the well sites and from that a count of 916 comes.</p>

50	<p>1 MR. SELEY: Move to strike.</p> <p>2 Q (BY MR. SMYSER) Did you personally visit</p> <p>3 any of these unlined, abandoned pits with wastes from</p> <p>4 wells?</p> <p>5 A Yes, I did.</p> <p>6 Q What does the picture show in the</p> <p>7 right-hand corner?</p> <p>8 MR. SELEY: Objection. Lacks foundation.</p> <p>9 No personal knowledge. Calls for expert testimony.</p> <p>10 A This is not my photograph.</p> <p>11 Q (BY MR. SMYSER) All right. It's a</p> <p>12 photograph, it looks like from the Reuters</p> <p>13 photographer, Mr. Dematteis?</p> <p>14 A Correct. I don't think the pronunciation</p> <p>15 is correct, but that's okay.</p> <p>16 Q The pronunciation is incorrect?</p> <p>17 A Is incorrect. It's Dematteis.</p> <p>18 Q Dematteis, thank you.</p> <p>19 And what does that photograph show?</p> <p>20 MR. SELEY: Same objections.</p> <p>21 A I don't know what site this is, so I can't</p> <p>22 be specific, but this is similar to many pits that</p> <p>23 I've seen in the area of Texaco's operations. This</p> <p>24 appears to be a pit that has crude oil floating on</p> <p>25 the top of it. And that would be crude oil that</p>	52	<p>1 typical of many pits I've seen.</p> <p>2 MR. SELEY: Move to strike.</p> <p>3 Q (BY MR. SMYSER) You would consider this</p> <p>4 an exemplar of the kind of pit you've personally</p> <p>5 seen?</p> <p>6 MR. SELEY: Same objection.</p> <p>7 A Yes.</p> <p>8 MR. SELEY: Move to strike.</p> <p>9 Q (BY MR. SMYSER) Let's go to the next</p> <p>10 slide, please.</p> <p>11 A Is it okay if we take a quick break?</p> <p>12 Q Absolutely.</p> <p>13 A Okay.</p> <p>14 Q Any time. You are the master of when we</p> <p>15 need to take breaks.</p> <p>16 A Okay.</p> <p>17 Q Of course, other people may need to take</p> <p>18 breaks, too.</p> <p>19 A Okay.</p> <p>20 Q Thank you.</p> <p>21 THE VIDEOGRAPHER: Going off the record at</p> <p>22 10:07.</p> <p>23 (Recess taken from 10:07 a.m. to</p> <p>24 10:22 a.m.)</p> <p>25 THE VIDEOGRAPHER: It is 10:22. We're</p>
51	<p>1 was -- came up out of the well during different</p> <p>2 phases of the oil -- the oil well development or</p> <p>3 production and then was dumped into a pit like this.</p> <p>4 MR. SELEY: Objection. Move to strike.</p> <p>5 Lacks foundation.</p> <p>6 Q (BY MR. SMYSER) Why did you select this</p> <p>7 photo for inclusion in your PowerPoint?</p> <p>8 A Like I say, this is very typical of many</p> <p>9 pits that I've seen. I think this is the -- probably</p> <p>10 the best-looking photo that I've seen. I don't have</p> <p>11 any that look this good. So to show visually what</p> <p>12 these pits look like, this is a very good example.</p> <p>13 Q Based on your own personal experience of</p> <p>14 looking at these pits, is this a true and accurate</p> <p>15 representation of this type of pit?</p> <p>16 MR. SELEY: Objection. Lacks foundation.</p> <p>17 A Yeah, this is very similar to pits I've</p> <p>18 seen and each pit is a little bit different.</p> <p>19 Sometimes you can more clearly make out the</p> <p>20 boundaries of the pits, like an earthen berm.</p> <p>21 Sometimes I've seen pits where the edges are square</p> <p>22 or straighter than this. This seems to have some</p> <p>23 curves to it.</p> <p>24 But in terms of oil floating on top and</p> <p>25 what the vegetation looks like and the size, this is</p>	53	<p>1 back on the record.</p> <p>2 Q (BY MR. SMYSER) Mr. Beltman, when we took</p> <p>3 our break, we were to an unlabeled slide which</p> <p>4 appears to be an aerial photograph. I wonder if you</p> <p>5 could tell us why you included this slide in your</p> <p>6 presentation?</p> <p>7 MR. SELEY: Objection to the extent it</p> <p>8 calls for expert testimony.</p> <p>9 A This is an aerial photograph of one of the</p> <p>10 Chevron well sites. And it shows a typical layout of</p> <p>11 the well site and then the waste pits that Texaco</p> <p>12 built and left. And I think it's, from what I've</p> <p>13 seen, very typical of the -- all the well sites that</p> <p>14 Texaco operated.</p> <p>15 MR. SELEY: Objection. Move to strike.</p> <p>16 Q (BY MR. SMYSER) Did you visit yourself</p> <p>17 some of these well sites?</p> <p>18 A Yes, I did. I don't know if I visited</p> <p>19 this one in particular, but, yes, I did visit well</p> <p>20 sites.</p> <p>21 Q And in the course of visiting more than</p> <p>22 one well site --</p> <p>23 A Yes.</p> <p>24 Q -- did you come to an appreciation of how</p> <p>25 these oil sites in general are laid out?</p>

<p style="text-align: right;">54</p> <p>1 MR. SELEY: Objection. Vague. 2 A Yes, certain -- when I went to the well 3 sites I went to, I would look at the well. The 4 wellhead, the well pad area, look at the pits. Look 5 at how the pits were arranged. In some cases the 6 pits were still open. Look what's in the pits, look 7 at the drainage from the pits. So, yes, I looked at 8 that. 9 Q (BY MR. SMYSER) And does this slide 10 contain a representation that is a true and accurate 11 representation of what you generally encountered when 12 you visited an oil pit, even if this specific site 13 may not have been one you visited? 14 MR. SELEY: Objection. Lacks foundation. 15 A Yes, I would say it's a typical layout 16 from the ones that I've seen. 17 Q (BY MR. SMYSER) Let's go to the next 18 slide. Can you tell us, this is again an unlabeled 19 slide. Can you tell us what is shown in this slide? 20 A This -- 21 MR. SELEY: Objection. Calls for expert 22 testimony. 23 A Yes. This slide is another well site. 24 The difference from the previous one, though, is, 25 well, it's color, easier to see the black oil on the</p>	<p style="text-align: right;">56</p> <p>1 Lacks foundation. 2 Q (BY MR. SMYSER) And all I'm asking you is 3 to establish, as he would say, a foundation with 4 respect to your knowledge that this is what it might 5 look like shortly after production is started. 6 MR. SELEY: Objection. Calls for expert 7 testimony. 8 A I've seen descriptions of how Texaco 9 operated their well sites. And this photograph is 10 typical of those descriptions that I've read. 11 MR. SELEY: Move to strike. 12 Q (BY MR. SMYSER) Let's look at the next 13 slide, if we could. Now, this slide has a particular 14 name to it, pits. And what is the purpose of this 15 slide? 16 MR. SELEY: Objection. Calls for expert 17 testimony. 18 A We are in the -- still in the part of the 19 presentation where I'm describing the principal ways 20 that Texaco's operations contaminated the 21 environment. And now, this is the first specific 22 way. The pits, the oil pits that -- oil and other 23 kinds of waste pits that Texaco constructed and then 24 left. 25 MR. SELEY: Move to strike.</p>
<p style="text-align: right;">55</p> <p>1 pits. It's also based on the equipment on the well 2 pad and the freshly uncovered dirt. This is probably 3 just after well drilling or initial well production, 4 where the previous photograph was probably well after 5 that initial drilling and production started. 6 So this shows better what these well sites 7 look like when, soon after Texaco finished the 8 initial drilling and started production. 9 MR. SELEY: Move to strike as speculative 10 and lacks foundation. 11 Q (BY MR. SMYSER) In the course of your 12 work, did you develop an understanding of how these 13 well sites would look after initial production, after 14 initial drilling by Texaco? 15 MR. SELEY: Objection. Calls for expert 16 testimony. 17 A Do you mean soon after? I'm not sure. 18 Q (BY MR. SMYSER) Yes. 19 A Certainly I've seen many of them after. 20 But I think this photograph shows well what it would 21 look like soon after Texaco finished the drilling. 22 You can see the drill rig is gone but there's still 23 equipment on the well pad and the dirt is fresh. 24 Q (BY MR. SMYSER) Right. 25 MR. SELEY: Move to strike as speculative.</p>	<p style="text-align: right;">57</p> <p>1 Q (BY MR. SMYSER) What were the pits used 2 for? 3 MR. SELEY: Calls for expert testimony. 4 A The pits here, we have some data from some 5 of these pits. Also, I have seen that one of the 6 things they were used for was oil. 7 Q (BY MR. SMYSER) What do you mean by used 8 for oil? 9 MR. SELEY: Objection. Calls for expert 10 testimony. 11 A That not all of the oil that came up out 12 of the wells went to the processing stations. That 13 in some cases, they're first drilling the well, 14 testing the well, they may be developing the well, 15 there is oil that isn't captured by the pipeline. In 16 some cases the pipeline may not have been in place 17 yet. 18 So that oil they had to do something with. 19 And at these well sites they dumped that oil into 20 these open pits. And every site that I've been to 21 and every description of well sites shows at least 22 one oil pit, sometimes more at each well site. 23 MR. SELEY: Move to strike. 24 Q (BY MR. SMYSER) And you personally saw 25 some of these oil pits when you visited well sites?</p>

58	<p>1 A Yes.</p> <p>2 MR. SELEY: Objection. Vague.</p> <p>3 Q (BY MR. SMYSER) Can you tell us what that</p> <p>4 photograph in the bottom right-hand corner shows?</p> <p>5 MR. SELEY: Objection. Calls for expert</p> <p>6 testimony and lacks foundation. Calls for</p> <p>7 speculation.</p> <p>8 A This is a photograph that I took of a pit</p> <p>9 at -- it's one of the well sites in Shushufindi. I</p> <p>10 think it's Shushufindi 61, which is a specific well</p> <p>11 site in the Shushufindi field. I'm not sure that</p> <p>12 it's 61, but it's a pit -- behind me when I'm taking</p> <p>13 the photograph is the oil, the well itself and the</p> <p>14 pad. And this then is a pit covered in oil. And</p> <p>15 this oil was dumped here at some point during the</p> <p>16 well drilling or initial production or development.</p> <p>17 MR. SELEY: Move to strike. Lacks</p> <p>18 foundation. Speculative.</p> <p>19 Q (BY MR. SMYSER) Did you take this picture</p> <p>20 yourself?</p> <p>21 A Yes.</p> <p>22 Q Is this a true and accurate representation</p> <p>23 of what you saw that day when you were out there?</p> <p>24 A Yes.</p> <p>25 Q You indicated that one of the uses of the</p>	60
59	<p>1 pit is for unrecovered oil. Did you describe that to</p> <p>2 us earlier? Is that the oil that is for some reason</p> <p>3 not used?</p> <p>4 A Yes, what I mean by unrecovered is it's</p> <p>5 not sent in the pipeline to the processing station</p> <p>6 for whatever reason.</p> <p>7 Q Also, you indicate that the pits are used</p> <p>8 for disposal of drilling muds. What are drilling</p> <p>9 muds?</p> <p>10 MR. SELEY: Objection. Calls for expert</p> <p>11 testimony.</p> <p>12 A Drilling muds are, just as it sounds,</p> <p>13 they're a liquid, muddy concoction that is pumped</p> <p>14 down the well during drilling to help lubricate the</p> <p>15 drill and also carry some of the cuttings, the rock</p> <p>16 as it's being cut, back up to the surface to get it</p> <p>17 out of the way. And those drilling muds come up out</p> <p>18 of the well during drilling and something needs to be</p> <p>19 done with them.</p> <p>20 Q (BY MR. SMYSER) And what is this</p> <p>21 something that Texaco did with them?</p> <p>22 MR. SELEY: Objection. Calls for expert</p> <p>23 testimony.</p> <p>24 A Based on the descriptions of Texaco's</p> <p>25 operations that I've read, they put them in pits. So</p>	61
	<p>1 each well site, they would have taken the drilling</p> <p>2 muds and dumped them into the open pits.</p> <p>3 Q (BY MR. SMYSER) Do drilling muds contain</p> <p>4 chemicals in them?</p> <p>5 MR. SELEY: Objection. Calls for expert</p> <p>6 testimony.</p> <p>7 A Yes, they can.</p> <p>8 MR. SELEY: Move to strike.</p> <p>9 Q (BY MR. SMYSER) What kind of chemicals</p> <p>10 can be found in drilling muds?</p> <p>11 MR. SELEY: Same objection.</p> <p>12 A There are different kinds of drilling</p> <p>13 muds. Barium sulfate is a chemical that is found in</p> <p>14 many drilling muds. Some drilling muds can also have</p> <p>15 essentially a -- like an oil-based formulation where</p> <p>16 -- to help with the lubrication and to help with the</p> <p>17 transport of the muds. It's actually an oily mix</p> <p>18 itself, so it can have some components of petroleum.</p> <p>19 There can be other chemicals added as</p> <p>20 well, either to help with the lubrication or help in</p> <p>21 maintaining the drill.</p> <p>22 MR. SELEY: Move to strike.</p> <p>23 Q (BY MR. SMYSER) Did Stratus in the course</p> <p>24 of its work in the concession analyzing the material</p> <p>25 from the concession, analyze some of the drilling</p>	

62	<p>1 In other cases, a pit could be used but</p> <p>2 for temporary storage. And there are regulations</p> <p>3 about that specifying that if pits are used, they're</p> <p>4 used for temporary storage only of the waste. Then</p> <p>5 those pits are closed, which would often involve,</p> <p>6 again, depending on specifics of the state or the</p> <p>7 place, could involve removing the waste, taking it to</p> <p>8 a treatment facility and then properly closing the</p> <p>9 pits.</p> <p>10 MR. SELEY: Move to strike.</p> <p>11 Q (BY MR. SMYSER) Based on your examination</p> <p>12 of how the drilling muds were disposed by Texaco in</p> <p>13 the concession, did you form an opinion as to whether</p> <p>14 or not Texaco disposed of the muds in a manner</p> <p>15 consistent with what the general standards were that</p> <p>16 you've just described to us?</p> <p>17 MR. SELEY: Objection. Calls for expert</p> <p>18 testimony.</p> <p>19 A I don't think I developed opinions</p> <p>20 specific to the drilling muds.</p> <p>21 Q (BY MR. SMYSER) Okay.</p> <p>22 A I think the opinion I have on the pits is</p> <p>23 it applies to all the waste. I don't know that I've</p> <p>24 had a -- that I developed an opinion specific to just</p> <p>25 drilling muds.</p>	64	<p>1 these chemicals in the pits at the well sites.</p> <p>2 MR. SELEY: Move to strike as hearsay.</p> <p>3 Q (BY MR. SMYSER) And that was based on</p> <p>4 documents you saw about Texaco's own use of how these</p> <p>5 chemicals were disposed?</p> <p>6 A Yes, they were Texaco documents describing</p> <p>7 how they operated.</p> <p>8 MR. SELEY: Move to strike.</p> <p>9 Q (BY MR. SMYSER) Let's go to the next</p> <p>10 slide. This appears to be a more down to earth how</p> <p>11 the pits were used and constructed. Could you tell</p> <p>12 us what you mean by the Texaco pits being constructed</p> <p>13 without liners?</p> <p>14 MR. SELEY: Objection. Calls for expert</p> <p>15 testimony.</p> <p>16 A Yes. What that means is these pits that</p> <p>17 Texaco built at each well site and then used for</p> <p>18 disposal of the waste were really just scrapes in the</p> <p>19 ground. They dug out an area and put waste in those</p> <p>20 pits without placing any liner or any sort of</p> <p>21 protection of the groundwater or the soil around it</p> <p>22 down first.</p> <p>23 Q (BY MR. SMYSER) What would be the</p> <p>24 purpose --</p> <p>25 MR. SELEY: Move to strike.</p>
63	<p>1 Q (BY MR. SMYSER) Fair enough.</p> <p>2 MR. SELEY: Move to strike.</p> <p>3 Q (BY MR. SMYSER) Let's go to the last item</p> <p>4 you have on this slide, chemicals used to develop the</p> <p>5 wells. What do you mean by that?</p> <p>6 A Sometimes chemicals are pumped down the</p> <p>7 wells to aid in the production of the wells, is what</p> <p>8 is important. And they can be things that --</p> <p>9 biocides that are listed here on the slide, which</p> <p>10 would keep any bacteria or any growth from occurring</p> <p>11 in the well. They can be acids that will help open</p> <p>12 up the rock and which would help the oil flow back</p> <p>13 into -- flow in the well quicker, easier. It can</p> <p>14 clear out buildup in the well. So these are</p> <p>15 chemicals pumped down the well that will help produce</p> <p>16 the oil and maintain the production.</p> <p>17 MR. SELEY: Move to strike.</p> <p>18 Q (BY MR. SMYSER) And was it your</p> <p>19 observation that these chemicals were also disposed</p> <p>20 of in these pits?</p> <p>21 MR. SELEY: Objection. Calls for expert</p> <p>22 testimony. Calls for speculation. Expert testimony.</p> <p>23 A I didn't observe this myself, when Texaco</p> <p>24 was operating, of course. I have read descriptions</p> <p>25 of Texaco operations that, yes, they did dispose of</p>	65	<p>1 Q (BY MR. SMYSER) -- of a liner in a pit</p> <p>2 like this?</p> <p>3 MR. SELEY: Objection. Calls for expert</p> <p>4 testimony.</p> <p>5 A The purpose would be to keep the</p> <p>6 contamination, the chemicals in the waste, from</p> <p>7 spreading outside of the pit --</p> <p>8 MR. SELEY: Move to strike.</p> <p>9 A -- to groundwater, to soil surrounding the</p> <p>10 pit, to keep it in the pit where it was placed.</p> <p>11 MR. SELEY: My apologies. I jumped the</p> <p>12 gun. Move to strike.</p> <p>13 Q (BY MR. SMYSER) And I understand that was</p> <p>14 your understanding, or let me rephrase that question.</p> <p>15 Was that your understanding of the use of pit liners</p> <p>16 at the time you did your investigation and work in</p> <p>17 the -- on the Texaco Lago Agrio litigation?</p> <p>18 MR. SELEY: Objection. Calls for expert</p> <p>19 testimony.</p> <p>20 A Is your question specific to this field in</p> <p>21 Ecuador?</p> <p>22 Q (BY MR. SMYSER) Yes.</p> <p>23 MR. SELEY: Same objections.</p> <p>24 A Yes, I read documents, again, Texaco</p> <p>25 documents, that make clear that they, that no liners</p>

66	<p>1 were ever used in the pits. And I haven't seen any 2 liners at pits, the ones I've looked at. 3 Q (BY MR. SMYSER) And you visited some of 4 the pits? 5 A Yes. 6 MR. SELEY: Objection. Vague. 7 Q (BY MR. SMYSER) Did you -- did you 8 determine whether or not the pits that you visited 9 were constructed with liners? 10 A I -- well, not really. I mean to really 11 investigate it, based on looking at the pit alone, 12 you would have to get into the pit and see what's 13 underneath it. So I didn't do that. But I did not 14 see any evidence of liners along the edges of the 15 pits or, you know, remnants of liners, torn-up 16 liners. I didn't see anything like that at the pits. 17 Q And you indicated earlier that documents 18 that you saw made clear that Texaco did not use 19 liners in the pits? 20 MR. SELEY: Objection. Misstates the 21 testimony. 22 Q What about -- 23 THE REPORTER: Excuse me. If we can go 24 off the record. 25 THE VIDEOGRAPHER: We're off the record at</p>	68	<p>1 was built with a pipe in the side of it. And the way 2 these pipes operate is that as the pits fill up, 3 rather than spill over the tops of the pits, the pit 4 contents are dumped through the pipe out into 5 whatever is next to the pit. 6 MR. SELEY: Move to strike. 7 Q (BY MR. SMYSER) And what is that picture 8 down in the right-hand corner, the far right-hand 9 corner? 10 MR. SELEY: Objection to the extent it 11 calls for expert testimony. 12 A I don't know what this -- where this photo 13 is. This is not one of my photographs. The pipe 14 that is shown in that is typical of all the overflow 15 pipes that I've seen in the pits. And it looks like 16 around this pipe there's an oily mess. But this -- 17 these pipes are typically about probably four inches 18 in diameter, steel pipes. And they go through the 19 sides of the pits and pour out into the stream or 20 wetland or whatever is next to that particular pit. 21 MR. SELEY: Move to strike. Lacks 22 foundation. Calls for speculation. Calls for expert 23 testimony. 24 Q (BY MR. SMYSER) Would this pipe, would 25 this photo be an accurate representation of the</p>
67	<p>1 10:39. 2 (Recess taken from 10:39 a.m. to 3 10:42 a.m.) 4 THE VIDEOGRAPHER: Back on the record at 5 10:42. 6 Q (BY MR. SMYSER) I'm not sure my last 7 question was answered. Mr. Beltman, you indicated 8 earlier the documents that you saw at the time made 9 clear that Texaco did not use liners in the pits? 10 MR. SELEY: Same objection. 11 A That's correct. 12 MR. SMYSER: And for the record, 13 Mr. Seley, the Bates numbers on this document are, as 14 I have said, 2268146 through 2268197. And it has a 15 CVX-RICO prefix. 16 MR. SELEY: Thank you. 17 MR. SMYSER: Certainly. 18 Q (BY MR. SMYSER) You next note that the 19 pits were constructed with built-in overflow pipes? 20 A Yes. 21 Q What does that mean? 22 MR. SELEY: Objection. Calls for expert 23 testimony. 24 A Each, every pit that I've seen and the 25 documentation that I've read describes how each pit</p>	69	<p>1 typical pipe that you saw when you observed these 2 kind of pits? 3 A Yes. 4 MR. SELEY: Same objections. 5 Q (BY MR. SMYSER) These pits are located in 6 the rainforest? 7 A Yes, the entire concession is in the 8 rainforest. 9 Q Let me ask an obvious question here. Does 10 it rain in the rainforest? 11 A Yes, including from personal experience. 12 It rains a lot in the rainforest. 13 Q It rains a substantial amount in the 14 rainforest? 15 MR. SELEY: Objection. Vague. 16 A Yes. Yes, it does. 17 Q (BY MR. SMYSER) And I suppose the rain 18 falls in these pits? 19 A Yes, these pits are open. There is 20 nothing covering them. So the rainwater flows into 21 the -- it falls into the pits. And it's one of the 22 ways that the pits overflow is because they collect 23 the rainwater. And one of the features of the 24 rainforest is that it rains more than it evaporates, 25 so it's accumulating rainwater over time. And that</p>

70	<p>1 rainwater then is in contact with whatever is in the 2 pit and then makes its way through the pipes. 3 MR. SELEY: Move to strike. Improper 4 expert testimony. 5 Q (BY MR. SMYSER) And does the rainwater 6 that is in contact with the chemicals in the pit and 7 then flows out through the pipe carry chemicals from 8 the pit out into the environment? 9 MR. SELEY: Objection. Calls for expert 10 testimony. Calls for speculation. 11 A I haven't seen any data on the chemistry 12 of water coming out of the pit, the side of a pit. I 13 haven't seen anyone collect a sample. But I have 14 seen where downstream from the pit, either right 15 where the pit -- right where the pipe spills out, 16 where you could follow it down the stream, I've seen 17 oil in the sediment. I've smelled the oil in the 18 water and in the sediment. So there is certainly oil 19 getting out through the pipes that I've seen, but I 20 can't say that I've seen data specifically on it. 21 Q (BY MR. SMYSER) I seem to remember that 22 there was a 60 Minutes video in which you gave some 23 dialogue with one of the 60 Minutes individuals and 24 were at one of these what appear to be spillover 25 pipes.</p>	72
71	<p>1 Do you remember that? 2 A Yes. 3 Q And you smelled that. Did that smell of 4 oil? And I'll get into that in a little more detail 5 later. I'll show you that video, but -- 6 A Yes. I think he said that smells -- the 7 correspondent is smelling the oil in the video, not 8 me. But, yes, that's an example of a pipe out the 9 side of a pit where you can track the oil as you go 10 down the hillside into a little stream and wetland 11 and you can smell the oil. 12 Q And does that contaminate the environment? 13 MR. SELEY: Objection. Calls for expert 14 testimony. 15 A Absolutely. 16 Q (BY MR. SMYSER) In your personal 17 experience observing these pits, did the overflow 18 from these pits through these pipes contaminate the 19 environment? 20 MR. SELEY: Objection. Calls for expert 21 testimony. 22 A Absolutely. 23 Q (BY MR. SMYSER) You next indicate that 24 these pits were used for permanent disposal. Why is 25 that significant to you? First --</p>	73
	<p>1 MR. SELEY: Same objection. 2 Q (BY MR. SMYSER) First, I guess I need to 3 ask you what you meant by used for permanent 4 disposal? 5 MR. SELEY: Same objection. Calls for 6 expert testimony. 7 A What I meant by that is these pits had the 8 wastes dumped into them but were never -- that the 9 waste that was put into these pits was never moved. 10 It was never pumped out, it was never taken to a 11 treatment facility. Once it was put in the pits, it 12 was left there. So it was intended to be a permanent 13 way to dispose of the waste. 14 MR. SELEY: Move to strike. 15 Q (BY MR. SMYSER) Now, let's look at the 16 next slide. Now, this slide is unlabeled, but could 17 you tell us what the schematic here is intended to 18 demonstrate? 19 MR. SELEY: Objection. Calls for expert 20 testimony. Speculative. Lacks foundation. 21 A Yes. This schematic is intended to show 22 the ways in which the contamination can spread from 23 these Texaco pits out into various components of the 24 environment. 25 MR. SELEY: Move to strike.</p>	
	<p>1 Q (BY MR. SMYSER) Okay. Let's look at this 2 slide in a little more detail. I think you can point 3 on the screen and it will show up, if I'm not 4 mistaken. 5 THE DEPONENT: There we go. Does it move? 6 MR. SMYSER: Does it move? 7 THE DEPONENT: Oh, I wasn't supposed to do 8 that. 9 MR. SPALDING: To draw you need to click 10 the circle right here. 11 THE DEPONENT: Can I just move the pointer 12 as well? 13 MR. SPALDING: No. You can draw. 14 THE DEPONENT: No. 15 MR. SMYSER: It's never that easy. 16 A Okay. 17 Q (BY MR. SMYSER) Okay. Can you show us on 18 the screen where the oil -- oil pit is? 19 A Yes. 20 MR. SELEY: Objection. Lacks foundation. 21 A In this schematic, this -- maybe not. 22 MR. SPALDING: It might be better to use 23 the circle tool. 24 THE REPORTER: I'm sorry, I can't hear 25 you.</p>	

74	<p>1 MR. SMYSER: It might be better to use the 2 circle tool. 3 THE DEPONENT: Sorry, I'm not getting it. 4 THE VIDEOGRAPHER: Push down firm and 5 drag. There you go. 6 THE DEPONENT: Got it. 7 A So this area, this here represents the pit 8 at this site. 9 Q (BY MR. SMYSER) Okay. What is -- what 10 are the contents of the pit? 11 MR. SELEY: Objection. Calls for expert 12 testimony and calls for speculation. 13 Go ahead. 14 A In this schematic, we can see three 15 different kinds of waste. There's the drilling mud 16 labeled at the bottom, the water, contaminated water 17 in the pit. That could either be water from the pit 18 or, again, rainwater that is accumulated over time, 19 I'm sorry, water from the well, and then a top layer 20 of oil. 21 Q (BY MR. SMYSER) And are the contents of 22 pits of this type within your own personal experience 23 down there in Ecuador, and reading documents and 24 based on your work on this project? 25 MR. SELEY: Objection. Vague. Lacks</p>	76	<p>1 its way into the river, has it contaminated the 2 river? 3 MR. SELEY: Objection. Calls for expert 4 testimony. Speculation. 5 A If the water is contaminated, yes. 6 Q (BY MR. SMYSER) And based on your 7 experience visiting pits like this with discharge 8 into rivers, did you observe whether or not the local 9 populace bathed in the rivers? 10 MR. SELEY: Objection. Lacks foundation. 11 Calls for speculation. 12 A Yes, I've seen people bathing in the 13 rivers there. I've seen them doing laundry in the 14 rivers. I've seen them just sort of hanging out by 15 the rivers, especially on hot days, swimming. 16 Q (BY MR. SMYSER) And are those in rivers 17 near one of these depicted oil pits with goose neck 18 pipe discharges of water, contaminated water into the 19 river? 20 MR. SELEY: Objection. Vague. Lacks 21 foundation. Calls for speculation. 22 A The places where I've seen people in the 23 river have always been at road crossings, so the road 24 will go over the river. And that's where I'm driving 25 by and I see the people there. I haven't taken the</p>
75	<p>1 foundation. 2 A Yes, from my -- the descriptions of 3 Texaco's operations, this is typical of the waste 4 they put in the pits. And I've seen the oil and the 5 water in pits. I don't think I've seen drilling mud 6 in pits, personally. 7 MR. SELEY: Move to strike to the extent 8 it calls for improper expert testimony. 9 Q (BY MR. SMYSER) And you have a gooseneck 10 pipe there. Is that the pipe we've been talking 11 about? 12 A Yes. 13 MR. SELEY: Objection. 14 Q (BY MR. SMYSER) And what does it show 15 about how the water is discharged from the pit? 16 MR. SELEY: Objection. Speculation. 17 Calls for expert testimony. 18 A What this is depicting is that the pipe 19 has one end in the pit, then in this particular 20 example, it runs through what's the side of the pit 21 or the berm that goes around the pit. 22 And then the other end empties out into a 23 river drainage where that water eventually makes its 24 way into the river. 25 Q (BY MR. SMYSER) And if the water makes</p>	77	<p>1 time to try to track, say, when we see people in the 2 river, try to track where the closest pit is 3 upstream, the closest gooseneck pipe that's 4 discharging into that river. So I don't think I can 5 say myself I've put the two together and how close 6 they are, but I've certainly seen people in the river 7 and I've seen pit pipes dumping into the river. But 8 I've never taken the time to figure out how close the 9 two are to each other. 10 Q (BY MR. SMYSER) Okay. Based on your 11 experience in the area, would it be your expectation 12 that inhabitants would bathe in rivers that contain 13 contaminated water discharge from pits like this? 14 MR. SELEY: Objection. Calls for 15 speculation, calls for expert testimony. Lacks any 16 foundation. 17 A Yes. Yes. And I can say that because the 18 water, contaminated water, that discharges from the 19 pits makes its way through small streams to bigger 20 streams to the rivers. And there are well sites and 21 pits throughout this area. There are roads and towns 22 and people downstream of all these areas where there 23 are oil wells. 24 So the water that flows out of these pits 25 would make it downstream to places in rivers where</p>

78	<p>1 people are bathing.</p> <p>2 MR. SELEY: Move to strike.</p> <p>3 Q (BY MR. SMYSER) Let me ask you now to</p> <p>4 tell us on this schematic what is the purpose of the</p> <p>5 area labeled contaminated plume?</p> <p>6 A That depicts a plume of contaminants</p> <p>7 that's leaching out of the pit, over the pit contents</p> <p>8 and getting into groundwater.</p> <p>9 MR. SELEY: Move to strike as improper</p> <p>10 expert testimony.</p> <p>11 Q (BY MR. SMYSER) How did you determine</p> <p>12 that there were contaminated plumes underneath these</p> <p>13 pits? What information enabled you to make this</p> <p>14 determination?</p> <p>15 MR. SELEY: Objection. Calls for expert</p> <p>16 testimony. Calls for speculation. Lacks foundation.</p> <p>17 A To be clear, this isn't my figure, but I</p> <p>18 also have made the conclusion about contaminated</p> <p>19 groundwater.</p> <p>20 There are data that were collected at and</p> <p>21 near pits that show there is contamination in</p> <p>22 groundwater.</p> <p>23 MR. SELEY: Objection. Move to strike.</p> <p>24 Q (BY MR. SMYSER) Was it your opinion at</p> <p>25 the time that the groundwater was contaminated</p>	80
79	<p>1 because of plumes such as depicted on this schematic</p> <p>2 carrying chemicals from the reserve pit into the</p> <p>3 groundwater?</p> <p>4 MR. SELEY: Objection. Calls for</p> <p>5 speculation. Lacks foundation. Calls for expert</p> <p>6 testimony.</p> <p>7 A I have to qualify my answer. That the</p> <p>8 data that I've seen don't necessarily track the</p> <p>9 presence of the contamination back to a specific</p> <p>10 source. At any well site there could be other</p> <p>11 sources of contamination that ends up in the</p> <p>12 groundwater. It could be pits. It could be spills,</p> <p>13 recent or old spills. It could be other things</p> <p>14 related to the operation.</p> <p>15 So I haven't seen data that I can point to</p> <p>16 to say the contamination in this groundwater came</p> <p>17 from that pit and no other place. But certainly, the</p> <p>18 contamination in the pits, the data I've seen, it</p> <p>19 would at least contribute to the groundwater</p> <p>20 contamination.</p> <p>21 Q And I guess that's what I would like to</p> <p>22 focus on for half a second. Because I assume that</p> <p>23 the reason you use this slide is because you have</p> <p>24 some -- or formed some opinion at the time that this</p> <p>25 was at least one method by which groundwater would</p>	81
	<p>1 obviously are taking the groundwater and using that</p> <p>2 as drinking water. And if that groundwater is</p> <p>3 contaminated, then that's another way that people are</p> <p>4 exposed to it.</p> <p>5 MR. SELEY: Move to strike.</p> <p>6 Q (BY MR. SMYSER) And does the schematic</p> <p>7 portray a water well contamination?</p> <p>8 MR. SELEY: Objection. Lacks foundation.</p> <p>9 A The slide shows that this -- in this</p> <p>10 particular case, I would say this contaminated plume</p> <p>11 is just reaching this particular water well depicted</p> <p>12 in here. Some, it's gone under the river. Some has</p> <p>13 discharged into the river, and it's now extending</p> <p>14 just into the -- just into the well.</p> <p>15 Q (BY MR. SMYSER) And based on your</p> <p>16 background, experience, training and work at sites</p> <p>17 like this, did you form an opinion as to whether this</p> <p>18 kind of contamination could occur, water well</p> <p>19 contamination could occur?</p> <p>20 MR. SELEY: Objection. Calls for expert</p> <p>21 testimony.</p> <p>22 A Yes, and the --</p> <p>23 Q (BY MR. SMYSER) So you did form an</p> <p>24 opinion, what was your opinion?</p> <p>25 MR. SELEY: Same objection.</p>	

82	<p>1 A Yes, it could occur. And the reason why I</p> <p>2 formed that opinion is, again, the evidence that the</p> <p>3 groundwater is contaminated.</p> <p>4 Q (BY MR. SMYSER) If you would, let's go to</p> <p>5 the next slide. And this is called pit usage in the</p> <p>6 U.S. And I need to ask you, in the course of your</p> <p>7 work on pits, did you -- you may have already</p> <p>8 answered this. I don't want to be too repetitious,</p> <p>9 but did you have occasion to investigate how pits</p> <p>10 were used by the oil industry in the United States</p> <p>11 during the period of time that Texaco operated in the</p> <p>12 concession?</p> <p>13 A Yes.</p> <p>14 Q And what did you determine, as reflected</p> <p>15 in this slide, about how pit usage was in the United</p> <p>16 States during the time that Texaco operated in the</p> <p>17 concession?</p> <p>18 MR. SELEY: Objection. Calls for expert</p> <p>19 testimony.</p> <p>20 A Pits for storage of well waste at the time</p> <p>21 that Texaco was operating in Ecuador and even</p> <p>22 currently are common. That pits themselves are used</p> <p>23 and have been used in the U.S. But there are, as I</p> <p>24 spoke to earlier, key differences that in the U.S. --</p> <p>25 Q (BY MR. SMYSER) What are those key</p>	84	<p>1 United States, regulations and industry guidance</p> <p>2 going back many decades indicate that pits were used</p> <p>3 for temporary storage. Why is that?</p> <p>4 MR. SELEY: Objection. Calls for expert</p> <p>5 testimony.</p> <p>6 A This is an interesting history. If you go</p> <p>7 back into the regulatory history in the U.S., in the</p> <p>8 early 1900s, pits were used in particular to dump</p> <p>9 produced water. And the hope was, if you put the</p> <p>10 waste in a pit, then that contamination is taken care</p> <p>11 of. But it was soon found that, in fact, dumping the</p> <p>12 waste in the pits eventually led to environmental</p> <p>13 contamination. A lot of places, especially in the</p> <p>14 U.S., that can contaminate the groundwater. So</p> <p>15 regulations developed and industry practice developed</p> <p>16 to use the pits when they're used for temporary</p> <p>17 storage.</p> <p>18 Q And when was this time period?</p> <p>19 MR. SELEY: Objection. Calls for expert</p> <p>20 testimony.</p> <p>21 A I've read some documents, some regulations</p> <p>22 at the state level where the movement, both within</p> <p>23 the industry and then the environmental standards of</p> <p>24 toward, if pits are used, they need to be designed to</p> <p>25 not contaminate the environment, and generally</p>
83	<p>1 differences?</p> <p>2 MR. SELEY: Objection. Calls for expert</p> <p>3 testimony.</p> <p>4 A Key differences between the regulations</p> <p>5 and practices in the U.S. versus how Texaco operated</p> <p>6 in Ecuador are that, if pits are used, they must be</p> <p>7 designed to prevent contamination of the environment.</p> <p>8 Q (BY MR. SMYSER) And how do you do that?</p> <p>9 MR. SELEY: Objection. Calls for expert</p> <p>10 testimony.</p> <p>11 A It depends on the specifics of the pit, of</p> <p>12 the place where the pit is used and constructed. It</p> <p>13 can mean that a liner is needed underneath the pit</p> <p>14 and that is to keep the waste in the pit, keep it</p> <p>15 from getting into groundwater.</p> <p>16 It would almost certainly mean that there</p> <p>17 is not a pipe placed in the side of the pit, so that</p> <p>18 as it fills up with waste or contaminated water it</p> <p>19 dumps in the environment surrounding the pit.</p> <p>20 MR. SELEY: Move to strike.</p> <p>21 A It can also have an impact on what gets</p> <p>22 put into a pit and what does not get put into a pit,</p> <p>23 again, depending on the specifics of the situation.</p> <p>24 MR. SELEY: Move to strike.</p> <p>25 Q (BY MR. SMYSER) You indicate that in the</p>	85	<p>1 temporary storage. I've read documents where that</p> <p>2 movement was in roughly the 1940s in the U.S.</p> <p>3 Q (BY MR. SMYSER) And you also indicate</p> <p>4 that tanks were used instead of pits where possible.</p> <p>5 What do you mean by tanks?</p> <p>6 MR. SELEY: Objection. Calls for expert</p> <p>7 testimony.</p> <p>8 A What I mean by tanks here are big,</p> <p>9 temporary mobile tanks that can be placed at a well</p> <p>10 site so that as the waste is produced at the well,</p> <p>11 instead of putting it into a pit, they're put into</p> <p>12 these very large tanks and then can be pumped out of</p> <p>13 the tanks, dealt with off-site, maybe treated at the</p> <p>14 site and disposed if that needs to be done.</p> <p>15 I've seen tanks like that at Petroequador</p> <p>16 sites where they are currently more recently doing</p> <p>17 drilling.</p> <p>18 Q In the course of your work looking at</p> <p>19 Texaco's practices, did you ever determine whether or</p> <p>20 not Texaco used tanks instead of pits for disposal of</p> <p>21 waste?</p> <p>22 MR. SELEY: Objection. Calls for expert</p> <p>23 testimony. Calls for speculation.</p> <p>24 A Yes, the documents I've read that describe</p> <p>25 Texaco's operations are quite clear that they used</p>

<p style="text-align: right;">86</p> <p>1 pits and only pits for disposal of wastes at well 2 sites. 3 Q (BY MR. SMYSER) And that would not be in 4 compliance with what were the industry standards at 5 that time? 6 MR. SELEY: Objection. Calls for expert 7 testimony. Calls for speculation. Lacks foundation. 8 A Well, again, to qualify, the use of a pit 9 itself is not inconsistent with industry standard at 10 the time. The use of pits that were in essence 11 designed to contaminate, and the use of pits as 12 permanent waste disposal sites, that would be 13 inconsistent with industry standard at the time. 14 Q (BY MR. SMYSER) And Texaco used pits 15 designed to contaminate, in your words, and pits that 16 were used as permanent waste disposal sites during 17 the time it operated in the concession? 18 MR. SELEY: Objection. Calls for expert 19 testimony. Calls for speculation. Lacks foundation. 20 A Yes. Everything I've read says that's how 21 Texaco operated. 22 Q (BY MR. SMYSER) And that would not be in 23 compliance with what you understood to be industry 24 standards then in effect in the United States? 25 MR. SELEY: Objection. Calls for expert</p>	<p style="text-align: right;">88</p> <p>1 That is, their guidance -- it can be guidance on oil 2 well operations, guidance on handling waste, guidance 3 on health and safety, lots of different topics. 4 Q Did you have occasion during your work on 5 the Texaco Lago Agrio litigation to determine what 6 the American Petroleum Institute guidance was with 7 respect to the use of pits? 8 A Yes. This slide we're looking at here is 9 from a 1962 document. 10 Q What is the purpose of this slide? 11 MR. SELEY: Objection. Calls for expert 12 testimony. 13 A The purpose of this slide is to show that 14 as early as 1962, the oil industry's guidance for how 15 to operate an oil well has ways to control the waste 16 produced at an oil well, that were not used by 17 Texaco. And it helps show that the industry itself 18 recognized that the way that, say, Texaco operated is 19 substandard compared to the guidance they were 20 writing for themselves. 21 MR. SELEY: Move to strike. 22 Q (BY MR. SMYSER) And what in particular 23 does this slide show, if it does, regarding disposal 24 of or control of the waste produced at an oil well? 25 MR. SELEY: Objection. Calls for expert</p>
<p style="text-align: right;">87</p> <p>1 testimony. 2 A That's correct. 3 Q (BY MR. SMYSER) Okay. Let's go to the 4 next slide, if we could. This slide is headed 1962 5 guide from American Petroleum Institute. What is the 6 American Petroleum Institute? 7 A It is an organization that is funded by 8 the oil industry. And it does various things on 9 behalf of the oil industry in the U.S. 10 Q Among the things it does is to promulgate 11 standards that generally reflect the understanding of 12 the industry about various practices? 13 MR. SELEY: Objection. Calls for 14 speculation. Misstates facts. 15 A No, I would not say they promulgate 16 standards. Only government institutions can 17 promulgate standards. 18 Q (BY MR. SMYSER) Fair enough. How about 19 -- I'm sorry. What is your understanding that they 20 do with respect to guidelines or standards regarding 21 industry practice? 22 A I don't know what all the American 23 Petroleum Institute does, but what I have seen is 24 guidance documents where they are in essence 25 producing documents that reflect industry standards.</p>	<p style="text-align: right;">89</p> <p>1 testimony. 2 THE DEPONENT: Could you blow up the 3 legend, please? The legend at the lower right, could 4 you blow that up, please, a little bit? 5 Q (BY MR. SMYSER) Does that help or is that 6 still too blurry? 7 A I can read it, thanks. Okay. Thanks. 8 Can we go back to the -- this shows I think primarily 9 two things. One, the use of tanks. You can see 10 multiple tanks that are used for different aspects of 11 handling what comes up out of the well. And, again, 12 Texaco did not use tanks. And the use of tanks helps 13 protect environmental contamination. It keeps what 14 comes up out of the well contained rather than 15 putting it out into open pits. 16 The second key feature that I was trying 17 to show with this figure is -- can you go up to the 18 upper right, please? Yeah, that's good, that's good. 19 That's fine, thanks. 20 What this figure shows is that the 21 production water that came up out of the well with 22 the oil was reinjected underground. 23 Q (BY MR. SMYSER) How can you tell that 24 from that picture? 25 A I can tell that because I believe that</p>

90	<p>1 well there in the upper right is labeled as a salt --</p> <p>2 there it is, salt water disposal well. So salt water</p> <p>3 is -- the production water that comes up out of oil</p> <p>4 wells typically is very salty because of the</p> <p>5 underground formation it's in.</p> <p>6 So in this case the salt water disposal</p> <p>7 well, as it's called, is after -- is disposing of the</p> <p>8 production water after it is separated out from the</p> <p>9 crude and the gas.</p> <p>10 Q Is that called --</p> <p>11 MR. SELEY: Move to strike.</p> <p>12 Q (BY MR. SMYSER) Excuse me. Is that</p> <p>13 called reinjecting the production water?</p> <p>14 A Yes.</p> <p>15 Q And is it reinjected into a different</p> <p>16 location, formation, or depth than where the original</p> <p>17 oil and production water was produced from?</p> <p>18 MR. SELEY: Objection. Calls for expert</p> <p>19 testimony.</p> <p>20 A From what I've read, it can be in a</p> <p>21 different formation. It can be in the same</p> <p>22 formation.</p> <p>23 Q (BY MR. SMYSER) If it's in the same</p> <p>24 formation, is it reinjected in a way that it's</p> <p>25 calculated to be pumped back up again?</p>	92	<p>1 reinjection well. And then there are a couple in the</p> <p>2 foreground and one over there to the left of those</p> <p>3 couple in the foreground. Which are the ones which</p> <p>4 you would think of as being used for storage of</p> <p>5 production water before it's reinjected?</p> <p>6 THE DEPONENT: Could you blow up the</p> <p>7 legend again, please?</p> <p>8 A I don't remember the specifics.</p> <p>9 MR. SELEY: You're just asking him to</p> <p>10 identify it on this?</p> <p>11 MR. SMYSER: Sorry?</p> <p>12 MR. SELEY: You're just asking him to</p> <p>13 identify it on this diagram?</p> <p>14 MR. SMYSER: Yes.</p> <p>15 THE DEPONENT: Can you go back to the main</p> <p>16 figure and can you blow up the tank? Can I do that?</p> <p>17 Can you blow up that tank, please?</p> <p>18 A Yeah. So this is labeled as a salt water</p> <p>19 disposal tank. And so this would be a tank where the</p> <p>20 production water is being stored prior to its</p> <p>21 reinjection underground. And you can see it's in</p> <p>22 line with the reinjection well, which is off to the</p> <p>23 right of the screen right now, and then a temporary</p> <p>24 pond to store that water.</p> <p>25 MR. SELEY: Move to strike.</p>
91	<p>1 MR. SELEY: Objection. Calls for expert</p> <p>2 testimony.</p> <p>3 A Well, I would -- I don't know. I would</p> <p>4 guess, hopefully not. What I have read is that it</p> <p>5 can be used to help stimulate the production of --</p> <p>6 essentially, by using the water, you can help force</p> <p>7 the oil up out of the wells. But at any particular</p> <p>8 well, what consideration they would be put into</p> <p>9 exactly where and how to reinject, I don't think I</p> <p>10 could speak to it.</p> <p>11 Q (BY MR. SMYSER) Okay. What other</p> <p>12 purposes were served by your use of the slide?</p> <p>13 MR. SELEY: Objection. Calls for expert</p> <p>14 testimony.</p> <p>15 A I think those are the key features showing</p> <p>16 that in 1962, prior to Texaco starting operations in</p> <p>17 Ecuador, the oil industry standards and expectations</p> <p>18 for how to operate an oil well were very different</p> <p>19 than how Texaco operated.</p> <p>20 MR. SELEY: Move to strike.</p> <p>21 Q (BY MR. SMYSER) And which are the tanks?</p> <p>22 Which of the -- it looks to me like there's several</p> <p>23 tanks depicted here. There's three in a row over</p> <p>24 there where some men are standing on a catwalk.</p> <p>25 There's a big one that seems to be tied to the</p>	93	<p>1 MR. SMYSER: And I think we've come to a</p> <p>2 spot where the tape needs to be changed.</p> <p>3 THE VIDEOGRAPHER: Going off the record at</p> <p>4 11:17.</p> <p>5 (Recess taken from 11:17 a.m. to</p> <p>6 11:20 a.m.)</p> <p>7 THE VIDEOGRAPHER: Starts disk number</p> <p>8 three. It's 11:20. Back on the record.</p> <p>9 Q (BY MR. SMYSER) Mr. Beltman, is it your</p> <p>10 understanding that Texaco first began to drill in the</p> <p>11 concession in 1967?</p> <p>12 A It's my understanding that that's when the</p> <p>13 first production well went online.</p> <p>14 Q And is it also your understanding, based</p> <p>15 on this slide, that by 1962 the guide from the</p> <p>16 American Petroleum Institute indicated that the</p> <p>17 industry standard for disposal of production waste</p> <p>18 was to reinject it?</p> <p>19 MR. SELEY: Objection. Calls for expert</p> <p>20 testimony. Lacks foundation and calls for</p> <p>21 speculation.</p> <p>22 A For produced water, yes. Produced water</p> <p>23 is to be reinjected.</p> <p>24 Q (BY MR. SMYSER) Right. Okay. Let's go</p> <p>25 to the next slide. And you focused on produced</p>

94	<p>1 water, which is the title of this slide. What do 2 Texaco's own audits show regarding their practice 3 with respect to produced water? 4 MR. SELEY: Objection. Calls for expert 5 testimony. 6 A In their audits Texaco reports that they 7 discharged approximately 18 billion gallons of 8 produced water from their wells. 9 Q (BY MR. SMYSER) And as an environmental 10 scientist, and based on your background, training, 11 experience and work on this matter, do you have an 12 opinion as to whether or not that discharge of 18 13 billion gallons into Ecuador streams and rivers 14 comported with good industry practice? 15 MR. SELEY: Objection. Calls for expert 16 testimony. 17 A Yes, I do. 18 Q (BY MR. SMYSER) And what's your opinion? 19 MR. SELEY: Same objection. 20 A My opinion is that it did not comport with 21 practice to reduce or minimize environmental 22 contamination. 23 Q (BY MR. SMYSER) Okay. And was that your 24 opinion at the time you developed this slide show? 25 A Yes.</p>	96	<p>1 MR. SELEY: Same objections. 2 A My opinion was that it did contaminate the 3 streams and rivers into which the produced water was 4 discharged. 5 MR. SELEY: Move to strike. 6 Q (BY MR. SMYSER) And would that 7 contamination pose a threat to animal life in those 8 streams and rivers? 9 MR. SELEY: Objection. Calls for expert 10 testimony. Calls for speculation. 11 A Yes. I have looked at data for the 12 chemical composition of the produced water, and -- 13 Q (BY MR. SMYSER) What does the data of the 14 chemical composition of produced water show you? And 15 I think we do get to that in a little bit, but I'm 16 jumping the gun. 17 MR. SELEY: Objection. Calls for expert 18 testimony. 19 A What I recall is that for -- for the 20 ecology of the streams and rivers, the saltiness of 21 the water alone would cause toxicity, that the 22 produced water has a high salt content. The fish, 23 plants and vertebrates of the rainforest, streams and 24 rivers are not adapted to dealing with high salt 25 content. And that high salt content in water can</p>
95	<p>1 Q Would this practice -- was it your opinion 2 that this practice of discharging production water 3 into the streams and rivers of Ecuador would be 4 calculated to cause environmental harm to the 5 environment? 6 MR. SELEY: Objection. Calls for expert 7 testimony. Calls for speculation. 8 A I can't say whether it was calculated to 9 cause environmental harm. I don't know what their 10 incentives were, what their motivations were. I 11 believe it certainly did cause it. But whether it 12 was intentional or not, I can't say. 13 MR. SELEY: Move to strike. 14 Q (BY MR. SMYSER) Fair enough. Let me 15 reask that question, if I might. 16 Did you form an opinion at the time as to 17 whether or not the discharge of some 18 billion 18 gallons of production water from 1972 to 1990 into 19 Ecuador's streams and rivers contaminated the 20 environment in that rainforest? 21 MR. SELEY: Objection. Calls for expert 22 testimony. Calls for speculation. 23 A Yes. 24 Q (BY MR. SMYSER) And what was your 25 opinion?</p>	97	<p>1 kill freshwater organisms. 2 And the salt content of this produced 3 water, based on the data I've seen, would kill 4 freshwater organisms. 5 MR. SELEY: Move to strike. 6 Q (BY MR. SMYSER) And in the course of your 7 work and investigation of what happened in this area, 8 did you determine from reports from individuals 9 there, and any other sources, that, in fact, animal 10 life in the rivers and streams was affected adversely 11 by the discharge of production water into the 12 streams? 13 MR. SELEY: Objection. Calls for expert 14 testimony. Calls for hearsay. 15 A I recall reading some -- some anecdotal 16 observations, I would call them, of fish kills or 17 dead fish in rivers. What I recall is that that was 18 associated with an oil spill, not produced water 19 discharge itself. I can't recall right now that I've 20 heard or read anything about impacts to organisms 21 from produced water specifically. 22 Q (BY MR. SMYSER) Okay. Let's go to the 23 next slide. Oh, before we do, I'm sorry, could we go 24 back? What is depicted in that photograph in the 25 bottom right-hand side of the slide?</p>

98	<p>1 MR. SELEY: Objection. Lacks foundation. 2 Calls for speculation. 3 A This is not my photo. I can't say 4 specifically what this is depicting. 5 Q (BY MR. SMYSER) Why did you choose this 6 photo for this slide? 7 A I, like I said earlier, I've been to some 8 of the processing stations where the produced water 9 was discharged. But today, and when I visited the 10 site, the produced water isn't discharged anymore 11 into streams and rivers. It's reinjected. 12 So I don't have any photos myself of what 13 it would look like when over this period 18 billion 14 gallons of produced water was discharged into streams 15 and rivers. 16 This is -- my understanding is this is an 17 older photograph. So what I was trying to depict 18 here is this is what it could look like at that time 19 when they're discharging produced water directly into 20 streams and rivers. 21 MR. SELEY: Move to strike. 22 Q (BY MR. SMYSER) And you chose this photo 23 based on your background, training and experience as 24 what you thought would be a true and accurate 25 depiction of what discharge of produced waters from a</p>	100
99	<p>1 production plant into the streams and rivers from 2 1972 to 1990 would look like? 3 MR. SELEY: Objection. Calls for expert 4 testimony. Calls for speculation. Lacks foundation. 5 A I really don't know. The pipes that I've 6 seen, that, again, are not now producing -- or 7 discharging produced water, but used to, were 8 probably about this size or bigger. Where I've seen 9 the pipes, there are more than one, like in this 10 photo. But what I don't know is at that time, how 11 fast the water would be flowing out. It could be 12 flowing faster than what we see here. I just don't 13 know. I think it could have looked like this, but I 14 don't know. 15 MR. SELEY: Move to strike. 16 Q (BY MR. SMYSER) Let's go to the next 17 slide. This is more about oil field produced water. 18 And can you tell us generally why you used this 19 slide, what the purpose of it was? 20 MR. SELEY: Objection to the extent it 21 calls for expert testimony. 22 A The reason I used this slide is to help 23 explain what produced water is. I think people are 24 in general more familiar with oil coming out of oil 25 wells, but aren't familiar with produced water coming</p>	101
100	<p>1 out of oil wells. 2 Q (BY MR. SMYSER) And the illustration at 3 the bottom right has a red circle around what appears 4 to be the word water. Could you tell us what is the 5 purpose of that illustration in that circle? 6 A This illustration depicts what's happening 7 underground. There's the oil reservoir that is in 8 contact with the water, and then also you can see 9 above the oil there's a little pocket of gas. So all 10 three occur together underground. 11 And when oil is brought to the surface, 12 it's not just oil. It's produced water and gas as 13 well. 14 Q Let's go to the next slide, if we might. 15 Again, we're talking about produced water. Your 16 slide indicates that Petroequador began reinjecting 17 produced water. When did that happen -- 18 MR. SELEY: Objection. I'm sorry. I 19 apologize. Objection. Calls for expert testimony. 20 A The documents that I have read say they 21 began this soon after they took over operations in 22 1990. And those documents are the audits by Texaco 23 because the audits were actually conducted a couple 24 of years after 1990. 25 Q (BY MR. SMYSER) And what does</p>	101

102	<p>1 Q (BY MR. SMYSER) And would high levels of 2 petroleum hydrocarbons in produced water dumped into 3 streams and rivers be toxic to aquatic life in those 4 rivers? 5 MR. SELEY: Objection. Calls for expert 6 testimony. Calls for speculation. 7 A It depends on the concentrations. 8 Q (BY MR. SMYSER) Okay. 9 A The presence alone would not be toxic. 10 And I wasn't trying to suggest that in this slide, 11 but it would depend on the concentration. 12 Q Does your slide indicate that high levels 13 of petroleum hydrocarbons would be toxic to aquatic 14 life? 15 MR. SELEY: Objection. Calls for expert 16 testimony. 17 A I don't think so. I think what I was 18 doing in this slide was -- was saying that the 19 produced water, the data on the produced water, 20 showed that it was toxic to aquatic life. And at 21 that time the data that I had showing it was toxic 22 was the salt content. 23 In addition to the toxicity to aquatic 24 life caused by salt content alone, the point here is 25 that the produced water also had high levels of</p>	104	<p>1 oil would build up in the sediments downstream and 2 that can cause an environmental problem, just from 3 the buildup of oil over time. 4 The second reason it's important is that 5 many of these components in petroleum and that were 6 measured in the produced water are more toxic to 7 people when we drink them than they are to, say, fish 8 in the river. So it's important from that aspect as 9 well. 10 MR. SELEY: Move to strike. 11 Q (BY MR. SMYSER) And was it your opinion 12 at the time that these high levels of petroleum 13 hydrocarbons in the stream presented both of those 14 dangers that you just described to us? 15 MR. SELEY: Objection. Calls for expert 16 testimony. 17 A Yes, it was. The first danger, as I 18 described, was based on what is known about the 19 toxicity of salt to freshwater organisms. The second 20 danger to humans. I think there's a slide later on, 21 although I'm not a human health toxicologist myself, 22 in comparing the data on the produced water of the 23 petroleum hydrocarbon content, to EPA's standards for 24 the protection of human health, this produced water 25 had petroleum hydrocarbons in it that was much, much</p>
103	<p>1 petroleum hydrocarbons. 2 MR. SELEY: Move to strike. 3 Q (BY MR. SMYSER) I guess I'm trying to 4 figure out why it would be significant to you as an 5 environmental scientist that water contained high 6 levels of petroleum hydrocarbons, if there weren't 7 some adverse environmental effect from there being 8 high levels of petroleum hydrocarbons. 9 Could you explain that for me? 10 MR. SELEY: Objection. Calls for expert 11 testimony. 12 A I'll try. First of all, the data that we 13 have on the produced water with the high petroleum 14 hydrocarbons, this tells us that the produced water 15 was not only toxic to aquatic life because of the 16 salt content alone, but it had the oil components in 17 it. That's important for a couple of reasons. One, 18 over time, as these oil components in the water or in 19 some cases, just plain old oil mixed with the water, 20 when they're dumped in the environment, the oil can 21 accumulate in the rivers and streams downstream of 22 the dumping point. 23 So even if the water itself, aside from 24 the salt content, but the hydrocarbons are not high 25 enough concentration to, say, kill a fish, over time</p>	105	<p>1 higher than the EPA standards. And that indicates 2 that it is a danger. 3 MR. SELEY: Move to strike. 4 Q (BY MR. SMYSER) Let me ask you about the 5 photo on the right-hand side. Is this a photo that 6 you took? 7 A Yes. 8 Q And what is represented in that photo? 9 A These are four pipes at the processing 10 station Sacha Central, one of the processing stations 11 that Texaco built and operated. It's hard to tell 12 from the perspective on this photo, but each -- these 13 pipes are at least two feet in diameter, maybe 14 bigger. 15 And these are the pipes where the produced 16 water was discharged by Texaco from this particular 17 processing station. 18 MR. SELEY: Move to strike. 19 Q (BY MR. SMYSER) Where -- 20 MR. SELEY: Move to strike. It's 21 speculation. 22 Q (BY MR. SMYSER) Where is it being 23 discharged into? 24 A In this case, this is really the -- I 25 think --</p>

106	<p>1 Q If you know. I mean, I don't know if this</p> <p>2 is a river, a stream, or just a pool or what?</p> <p>3 A Yeah, I didn't -- there is no stream.</p> <p>4 This is the start. So there's not a stream flowing</p> <p>5 by, but this is, because of the water that is coming</p> <p>6 out. And this water, I was told, was essentially</p> <p>7 stormwater that is collected at the facility now as</p> <p>8 it rains and washes off the facility and comes out</p> <p>9 through these pipes now.</p> <p>10 But this is the start of whatever this</p> <p>11 waterway is, and I didn't walk down this stream. But</p> <p>12 I was told that this stream eventually joins up with</p> <p>13 a larger stream or river in the area of Sacha where</p> <p>14 people do live.</p> <p>15 Q You were told it eventually does join up</p> <p>16 with a stream like that?</p> <p>17 MR. SELEY: Objection.</p> <p>18 A Yes.</p> <p>19 Q (BY MR. SMYSER) Was this photo a true and</p> <p>20 accurate representation of what you saw there that</p> <p>21 day?</p> <p>22 A Yes.</p> <p>23 Q Let's go to the next slide. This</p> <p>24 indicates that U.S. regulations for onshore discharge</p> <p>25 of produced water date back to the '20s as we</p>	108	<p>1 essentially petroleum content in produced water, at</p> <p>2 various stations built and operated by Texaco. I</p> <p>3 took these data from the what is cited there the</p> <p>4 Fugro-McClelland 1992 report, which is one of the</p> <p>5 Texaco audits.</p> <p>6 And the purpose of this slide is to show</p> <p>7 the concentrations of TPH or oil content measured in</p> <p>8 the produced water at these stations at that time.</p> <p>9 Q (BY MR. SMYSER) The Fugro-McClelland 1992</p> <p>10 report was done by someone hired by Texaco?</p> <p>11 A That's what the report says, yes.</p> <p>12 Q Now, I can't read the legend on the side.</p> <p>13 It says TPH. And is that milligrams per liter?</p> <p>14 A Correct.</p> <p>15 Q And then what do those numbers represent</p> <p>16 on the side, the Y axis?</p> <p>17 A Those numbers on the Y axis represent the</p> <p>18 milligrams of TPH, or we can say milligrams of oil,</p> <p>19 contained in every liter of water for the</p> <p>20 measurements that were taken at that time.</p> <p>21 Q And there is a little arrow that is</p> <p>22 attached to the words Ecuador limites 0.325</p> <p>23 milligrams per liter TPH. What does that mean?</p> <p>24 MR. SELEY: Objection. Calls for expert</p> <p>25 testimony.</p>
107	<p>1 discussed earlier, but since then, what is the</p> <p>2 standard for how produced water is handled --</p> <p>3 MR. SELEY: Objection.</p> <p>4 Q (BY MR. SMYSER) -- by the industry?</p> <p>5 MR. SELEY: Objection. Calls for expert</p> <p>6 testimony.</p> <p>7 A What I was saying in this slide is that</p> <p>8 the primary standard is to not contaminate the</p> <p>9 environment with the produced water. And reinjection</p> <p>10 is the primary way in which that's avoided. In some</p> <p>11 cases, if the chemical composition of the produced</p> <p>12 water allows, it can be treated to meet standards,</p> <p>13 whether they're state standards or EPA standards, and</p> <p>14 then discharged to the surface. But primarily, it's</p> <p>15 reinjection back into the ground.</p> <p>16 Q (BY MR. SMYSER) Okay. Let's go to the</p> <p>17 next slide. Entitled Texaco produced water. The top</p> <p>18 of the bar graph has as a title, TPH in Agua de</p> <p>19 Formacion. I assume that means total petroleum</p> <p>20 hydrocarbons in formation water?</p> <p>21 A Yes, that is correct.</p> <p>22 Q And what is the purpose of this slide?</p> <p>23 MR. SELEY: Objection. Calls for expert</p> <p>24 testimony.</p> <p>25 A This is a slide that shows data on TPH,</p>	109	<p>1 A That is pointing out a concentration of</p> <p>2 0.325 milligrams per liter TPH, which at the time I</p> <p>3 was putting these slides together, it was my</p> <p>4 understanding that that's the Ecuadorian regulation</p> <p>5 for the maximum TPH content allowed in surface water</p> <p>6 like streams and rivers.</p> <p>7 Q (BY MR. SMYSER) Does that yellow line</p> <p>8 that stretches across, right above the X axis, meant</p> <p>9 to represent the 0.325 limit that you've just</p> <p>10 described to us?</p> <p>11 A Yes.</p> <p>12 Q And that would indicate that every site</p> <p>13 where the bar graph dark bar exceeds that yellow line</p> <p>14 that it has exceeded the Ecuadorian limit on the</p> <p>15 presence of TPH in water?</p> <p>16 MR. SELEY: Objection. Calls for expert</p> <p>17 testimony. Calls for a legal conclusion.</p> <p>18 A Yes, that's what that shows.</p> <p>19 Q (BY MR. SMYSER) And was that the purpose</p> <p>20 of this slide?</p> <p>21 A In part. Comparing it to the Ecuadorian</p> <p>22 standard is part of it, but --</p> <p>23 Q What's the other part?</p> <p>24 A The other part is, even aside from the</p> <p>25 Ecuadorian standard comparison, these data clearly</p>

110	<p>1 show that the water being discharged contained TPH. 2 And as I mentioned before, that's of concern, both 3 from an ecological health perspective and the human 4 health perspective. Just the fact that oil is being 5 discharged into streams and rivers is of concern. 6 MR. SELEY: Move to strike. 7 Q (BY MR. SMYSER) And each one of the sites 8 on the X axis, Aguarico, Atacpi, ABG, et cetera, what 9 are those sites? Are those well sites or are they 10 processing stations? 11 A They are processing stations. 12 Q Okay. And I think you told us previously 13 that the processing station is where the oil, the gas 14 and the formation water are separated and the water 15 is then discharged into the stream and river? 16 MR. SELEY: Objection. Calls for expert 17 testimony. 18 A That's correct. 19 Q (BY MR. SMYSER) Let's go to the next 20 slide. BTEX in Texaco produced water, what is BTEX? 21 A That's an acronym for the petroleum 22 compounds benzene, toluene, ethylbenzene and xylenes. 23 Q And why did you choose to focus on the 24 presence of benzene, toluene, ethylbenzene and 25 xylenes in produced water?</p>	112	<p>1 exposed to benzene complain about headaches, for 2 example, dizziness. But it is documented as a 3 carcinogen. 4 MR. SELEY: Move to strike. 5 Q (BY MR. SMYSER) And what does your data 6 indicate was the EPA benzene standard for the amount 7 of benzene that was acceptable in water? 8 MR. SELEY: Objection. Calls for expert 9 testimony. Lacks foundation. 10 A The EPA standard at that time and still is 11 for benzene in drinking water is 5 micrograms per 12 liter, which is 0.005 milligrams per liter. 13 Q (BY MR. SMYSER) And is that what UG 14 indicates, micrograms? 15 A Yes. 16 Q Okay. And what did your data show with 17 respect to Sacha Central, Shushufindi North and 18 Shushufindi South, regarding the presence of benzene 19 in the water? 20 MR. SELEY: Objection. Calls for 21 speculation. Lacks foundation. This isn't his data. 22 A These are data from samples collected and 23 analyzed by Jocknick, et al., 1994. It's a group of 24 researchers, my understanding is from Harvard, who 25 conducted the study in Ecuador at that time.</p>
111	<p>1 MR. SELEY: Objection to the extent it 2 calls for expert testimony. 3 A These compounds occur in oil and they also 4 occur in this particular oil. I have data that show 5 that they are in this particular oil in this field. 6 They're also among the more water-soluble compounds 7 in the oil. So if we're looking at water in contact 8 with oil such as the produced water that is then 9 discharged into the environment, these particular 10 compounds are ones we want to pay specific attention 11 to because they're quite soluble in water, which 12 means they can move from the oil into the water. 13 They're also toxic to humans, in particular, benzene 14 especially is quite toxic. 15 Q (BY MR. SMYSER) Why is benzene toxic to 16 humans, if you know? 17 MR. SELEY: Objection calls for expert 18 testimony. 19 Q (BY MR. SMYSER) Is it a carcinogen, does 20 it induce broken legs, dizziness, heart attacks, poor 21 basketball shots, what is your understanding of what 22 is wrong with benzenes for humans? 23 MR. SELEY: Same objection. 24 A My understanding is it's a carcinogen. It 25 also can cause neurologic effects. Many people</p>	113	<p>1 They collected samples of produced water 2 at these three stations, Sacha Central, Shushufindi 3 North, Shushufindi South. 4 And the data they report shows benzene 5 from the produced water from all three stations of 6 above a thousand micrograms per liter. And in the 7 case of Sacha Central, benzene is up to approximately 8 2,500 micrograms per liter in the produced water. 9 Q (BY MR. SMYSER) And would that have 10 been -- would a similar figure have been present in 11 produced water during the time that Texaco was 12 discharging produced water into the streams and 13 rivers of the Amazon rainforest? 14 MR. SELEY: Objection. Calls for complete 15 speculation. 16 Q (BY MR. SMYSER) Well, let me go at it 17 this way. The oil -- produced water comes from oil, 18 correct? 19 A It comes up out of the ground with the 20 oil, yes. 21 Q Out of the ground with the oil. The oil 22 that is going into Sacha Central comes from wells 23 that were either at the same site or very close to 24 wells that Texaco had in the concession from 1972 to 25 1990, correct?</p>

114	<p>1 MR. SELEY: Objection. Calls for 2 speculation.</p> <p>3 A These particular data we're looking at, 4 the report was published in 1994.</p> <p>5 Q (BY MR. SMYSER) Um-hum.</p> <p>6 A I don't remember when they collected the 7 samples. It would have been probably before 1994. I 8 don't even remember if it was before or after 9 operations moved from Texaco to Petroequador.</p> <p>10 So if these were not collected prior to 11 1990, I would expect them to be representative of the 12 produced water that was coming from those stations 13 because it's coming from the same wells, using the 14 same process essentially, as was happening during 15 Texaco's operations. But, I don't know, they may in 16 fact be data during Texaco's operations. I don't 17 remember.</p> <p>18 MR. SELEY: Move to strike.</p> <p>19 Q (BY MR. SMYSER) And you anticipated my 20 question, which is, would these be representative and 21 what you would expect as an environmental scientist 22 to be similar to the values that would have been 23 present when Texaco was operating the wells?</p> <p>24 MR. SELEY: Objection. Calls for 25 speculation. Calls for expert testimony.</p>	116	<p>1 also toxic.</p> <p>2 Q (BY MR. SMYSER) How about ethylbenzene? 3 MR. SELEY: Same objections.</p> <p>4 A Similar story as with toluene, it's one of 5 these family of all these similar compounds, BTEX, 6 fairly water soluble. It's present in oil. It's 7 present in this oil. It can get from oil into water 8 and this data show in fact it has gotten into the 9 produced water.</p> <p>10 Q (BY MR. SMYSER) And do you now have any 11 or did you then have any understanding of what the 12 EPA standard was?</p> <p>13 MR. SELEY: Same objections.</p> <p>14 A I don't remember. I don't think there is 15 one for ethylbenzene, but I'm not sure.</p> <p>16 Q (BY MR. SMYSER) How about xylenes? 17 MR. SELEY: Same objections.</p> <p>18 A Again, it's in this same family. These 19 data show that it's present in the produced water. 20 It's a petroleum hydrocarbon compound that can be 21 toxic to humans. I don't recall if when I put this 22 figure together I looked up what its EPA standard is.</p> <p>23 Q (BY MR. SMYSER) So you can't tell us 24 whether you had an opinion then as to whether the 25 amounts of toluene, ethylbenzene and xylene reflected</p>
115	<p>1 A From what I've read about the operations 2 of Texaco and Petroequador in the early 1990s, there 3 were no differences in those operations that would 4 cause the produced water to have any different 5 character or concentrations of contamination between 6 what was coming out of the ground when Petroequador 7 was operating and what was coming out of the ground 8 when Texaco was operating.</p> <p>9 MR. SELEY: Move to strike.</p> <p>10 Q (BY MR. SMYSER) What about the chemical 11 toluene? What is the significance of the use of 12 toluene in this sampling?</p> <p>13 MR. SELEY: Objection. Calls for expert 14 testimony.</p> <p>15 A Toluene is another chemical that like 16 benzene is fairly soluble in water. It means it can 17 dissolve in water, at least amongst all the other -- 18 all the compounds in oil. It, too, is toxic to 19 humans. I don't recall when I was putting this slide 20 together if I looked up -- I don't even know if it 21 has a drinking water standard from EPA.</p> <p>22 But -- so I can't say now whether these 23 concentrations that I was showing here also exceed a 24 standard or a health-based number for toluene. But I 25 do know that toluene at sufficient concentrations is</p>	117	<p>1 on these bar graphs was or was not considered to be 2 in violation of any particular standard?</p> <p>3 A I don't recall -- I don't recall if I did 4 a comparison then or not. I don't know.</p> <p>5 Q Okay. So you can't --</p> <p>6 A For those compounds.</p> <p>7 Q So you can't tell us whether the compounds 8 in these amounts presented a danger to human life?</p> <p>9 MR. SELEY: Objection. Calls for expert 10 testimony.</p> <p>11 A What I recall is when I put this slide 12 together, I was focusing on benzene. Benzene is a 13 compound that I think more people have heard about 14 and have heard about its toxicity. And benzene is 15 higher, is at higher concentrations in the produced 16 water samples here than the other compounds. And 17 benzene alone is enough to show that the produced 18 water greatly exceeds the EPA drinking water 19 standards.</p> <p>20 Q (BY MR. SMYSER) Let's go to the next 21 slide. This is perhaps the end of this series of 22 slides, these next two. Well, nope, I'm wrong about 23 that. The next three on other sources of 24 contamination. What are you indicating in this slide 25 as another source of contamination?</p>

118	<p>1 MR. SELEY: Objection to the extent it</p> <p>2 calls for expert testimony.</p> <p>3 A What I'm indicating here is that another</p> <p>4 of the sources of contamination was spills from</p> <p>5 pipelines. They were pipelines running from each oil</p> <p>6 well to production stations. They were pipelines</p> <p>7 running between the production stations. And, of</p> <p>8 course, the big pipeline running to the coast. And</p> <p>9 in this slide, there's a picture of a group of</p> <p>10 pipelines running along a road, that I took to depict</p> <p>11 that these pipelines were built above ground, that</p> <p>12 these -- it's not just one or two pipelines. In some</p> <p>13 places there are multiple pipelines. There might be</p> <p>14 -- there are at least ten running alongside the road</p> <p>15 here.</p> <p>16 And the information in Texaco's audits</p> <p>17 that I've read report that when Texaco operated, they</p> <p>18 did not have a program in place to detect oil spills</p> <p>19 or to respond to oil spills when they happened. The</p> <p>20 audits described that certainly when oil spills were</p> <p>21 noticed, they would shut down the pipeline, but they</p> <p>22 had no program in place to monitor for oil spills or</p> <p>23 respond to them and clean them up.</p> <p>24 Q I suspect it would be the case that when</p> <p>25 an oil spill occurred, you would expect that an oil</p>	120	<p>1 describe that at spills the workers would put dirt</p> <p>2 over the spills or maybe mix in, mix in something to</p> <p>3 absorb the oil on the ground. I mean, that's</p> <p>4 different than having a program in place to respond</p> <p>5 to and clean up oil spills. So I don't think from</p> <p>6 the audits, I don't recall that the audits indicate</p> <p>7 that when oil was spilled, nothing was done. The</p> <p>8 audits do report that in some cases something was</p> <p>9 done, but not a -- the audits describe -- they don't</p> <p>10 describe a cleanup program intended to remove the oil</p> <p>11 from the environment.</p> <p>12 Q (BY MR. SMYSER) In your experience with</p> <p>13 oil spill remediation, would dumping dirt on the oil</p> <p>14 be considered an appropriate remediation for an oil</p> <p>15 spill?</p> <p>16 MR. SELEY: Objection. Calls for</p> <p>17 speculation. Calls for expert testimony.</p> <p>18 Q (BY MR. SMYSER) Or would it have been at</p> <p>19 the time?</p> <p>20 MR. SELEY: Same objections.</p> <p>21 A It doesn't remove the oil. It doesn't get</p> <p>22 rid of the oil. Depending on -- it might help keep</p> <p>23 the oil there. It might immobilize the oil a little</p> <p>24 bit. But typically with a spill, the cleanup efforts</p> <p>25 are focused on getting the oil out of the</p>
119	<p>1 company would want to stop that oil from leaking from</p> <p>2 the pipeline as fast as possible?</p> <p>3 A I would assume.</p> <p>4 MR. SELEY: Objection. Calls for</p> <p>5 speculation.</p> <p>6 Q (BY MR. SMYSER) Do you know whether in</p> <p>7 your review of Texaco's audits and Texaco's documents</p> <p>8 Texaco had in place a program to clean up any oil</p> <p>9 waste that occurred because of -- oil contamination</p> <p>10 that occurred because of an oil pipeline spill?</p> <p>11 A Yes.</p> <p>12 Q And what did you learn?</p> <p>13 A The audit documents say that Texaco did</p> <p>14 not have a cleanup program in place.</p> <p>15 Q And without a cleanup program, the oil</p> <p>16 that escaped from the pipeline would just sit there</p> <p>17 in the environment?</p> <p>18 MR. SELEY: Objection. Calls for</p> <p>19 speculation.</p> <p>20 Q (BY MR. SMYSER) Degrade over whatever</p> <p>21 period of time I guess it degrades?</p> <p>22 A I recall --</p> <p>23 MR. SELEY: Objection. Calls for</p> <p>24 speculation. Calls for expert testimony.</p> <p>25 A I recall in the audit documents they do</p>	121	<p>1 environment.</p> <p>2 Q (BY MR. SMYSER) And as best you could</p> <p>3 determine, looking at the Texaco audits, you did not</p> <p>4 see efforts to remove the oil, get it out of the</p> <p>5 environment?</p> <p>6 MR. SELEY: Objection. Calls for</p> <p>7 speculation.</p> <p>8 A I don't recall -- I don't recall whether</p> <p>9 there may have been some instances where they</p> <p>10 describe removal of, say, oil-contaminated dirt. So</p> <p>11 I don't think I can say that nowhere in those audit</p> <p>12 documents did they describe that. But there's a lack</p> <p>13 of the cleanup program in general, says that when oil</p> <p>14 spills happen, they did not have a program to deal</p> <p>15 with the oil, including regular cleanup of oil</p> <p>16 spills.</p> <p>17 So I want to be careful -- I don't know if</p> <p>18 the audit documents never say that oil was removed,</p> <p>19 but it was not a regular response to an oil spill.</p> <p>20 Q (BY MR. SMYSER) Okay. I want to be</p> <p>21 careful, too. Would it be fair to say that your</p> <p>22 review of the audit documents indicated that, in a</p> <p>23 majority of circumstances you can remember, the</p> <p>24 program did not involve removing the oil from the</p> <p>25 environment?</p>

122	<p>1 MR. SELEY: Objection. Calls for 2 speculation.</p> <p>3 A What I recall from the documents is that 4 when you say majority, that suggests that they have a 5 list or description of multiple spill events and they 6 describe how Texaco responded to each one. That's 7 not what I recall from the audit documents.</p> <p>8 The audit documents focus on the lack of a 9 spill response program. That would mean that in 10 general, when spills happen, their focus is not on 11 cleaning up the environment. And it would also mean 12 that there was not much focus paid to cleaning up oil 13 spills. But, again, I want to be careful about what 14 I recall about the audits.</p> <p>15 I don't recall a list of oil spill events 16 with specific descriptions of responses. The focus 17 was more just on a lack of a spill response program.</p> <p>18 Q (BY MR. SMYSER) Okay. Let's go to the 19 next slide.</p> <p>20 MR. SELEY: Move to strike as speculation.</p> <p>21 Q (BY MR. SMYSER) Let's go to the next 22 slide. What is the significance of your observation 23 that Texaco poured oil on the roads?</p> <p>24 MR. SELEY: Objection. Lack of 25 foundation, calls for expert testimony.</p>	124	<p>1 getting exposed to the oil through the bottom of 2 their feet. And then they're also going to be 3 breathing it in as they're walking along these roads.</p> <p>4 MR. SELEY: Objection. Move to strike. 5 Sorry.</p> <p>6 Q (BY MR. SMYSER) Does human exposure to 7 oil on the roads through the bottom of their feet 8 present a danger to the humans who come in contact 9 with it?</p> <p>10 MR. SELEY: Objection. Calls for expert 11 testimony. It calls for speculation.</p> <p>12 A I don't know.</p> <p>13 Q (BY MR. SMYSER) All right. Why would it 14 be significant, then, to you, as an environmental 15 scientist concerned with potential hazards presented 16 to the environment, that oil was poured on the roads 17 and then humans came into contact with it?</p> <p>18 MR. SELEY: Objection to the extent it 19 calls for expert testimony.</p> <p>20 A The intent here was to help the -- help 21 the audience get a better understanding of how people 22 down there were exposed to oil. It was in several 23 different ways.</p> <p>24 And we may not typically think of people 25 walking along a dirt road being exposed to oil, but</p>
123	<p>1 THE REPORTER: I'm sorry.</p> <p>2 MR. SELEY: Objection. Lack of 3 foundation. Calls for expert testimony.</p> <p>4 Q (BY MR. SMYSER) In the course of your 5 work down there, did you determine that Texaco poured 6 oil on the roads?</p> <p>7 MR. SELEY: Same objection.</p> <p>8 A I've read reports, including Texaco's 9 audits, that describe how Texaco poured oil on the 10 dirt roads. In my experience, many of those roads 11 have since been paved, so I didn't see it firsthand.</p> <p>12 The reason why I think this is important 13 at that time is that the roads are the ways that 14 people get from one place to another. And from what 15 I've seen, typically by walking.</p> <p>16 Q (BY MR. SMYSER) In Ecuador? 17 A In this region in Ecuador. 18 Q Um-hum. 19 A There are -- you see many people walking 20 along the roads. It's a very poor area. I would 21 guess that most people don't have cars. And if you 22 want to go from one place to another, they walk. 23 And with the oil poured on the roads as 24 these pictures show, these people are walking 25 barefoot along these dirt roads with oil, they're</p>	125	<p>1 down there at that time, they were. It was to help 2 understand how people and oil were completely mixed 3 at that time down there.</p> <p>4 Q (BY MR. SMYSER) Did you have an 5 understanding as to whether or not a discharge of oil 6 onto roads like this used by humans walking on them 7 was a standard or substandard practice in the United 8 States oil industry at that time?</p> <p>9 MR. SELEY: Objection. Calls for expert 10 testimony. Calls for speculation.</p> <p>11 A No, I don't think I did. I didn't look at 12 that issue.</p> <p>13 Q (BY MR. SMYSER) Let's go to the next 14 slide. And what is the purpose of this slide? 15 MR. SELEY: Objection to the extent it 16 calls for expert testimony.</p> <p>17 A What this slides shows is one of the open 18 oil pits on fire. And one of the things I've read 19 is, again, in the Texaco audits, that in some cases 20 Texaco would set oil pits on fire. And by doing so, 21 they're, you can even see in this photo, introducing 22 a lot of air pollution.</p> <p>23 The oil isn't going to burn completely. 24 It's going to form this black smoke. And it's 25 another way that people who lived down there at that</p>

126	<p>1 time could be exposed to the contamination from the 2 oil field operations. 3 MR. SELEY: Move to strike. 4 Q (BY MR. SMYSER) And would air pollution 5 of this type present a hazard to either animal or 6 human life? 7 MR. SELEY: Objection. Calls for expert 8 testimony. Calls for speculation. 9 A I don't know. I don't know whether it 10 alone was a hazard. Certainly air pollution of this 11 type could be. I don't think I -- I haven't seen any 12 data on what people were breathing in because of open 13 burning of oil like this pit. So I don't know. 14 Q (BY MR. SMYSER) Do you know whether or 15 not burning oil in open pits was consistent with 16 standard or substandard practice in the U.S. oil 17 industry at the time? 18 MR. SELEY: Objection. Calls for expert 19 testimony. Calls for speculation. 20 A That practice is not one that I looked at 21 very carefully for standard practice in the U.S. at 22 that time. I do recall that the Texaco audits noted 23 it as a -- I don't think I can use the word 24 substandard, but it was a practice that they 25 highlighted as --</p>	128	<p>1 And I take it that you're identifying in 2 this slide the sources of the data on the 3 contamination? 4 MR. SELEY: Objection. Leading. 5 Q (BY MR. SMYSER) Is that right? 6 A Yes, this slide is intended to be an 7 introduction into the data that I have looked at on 8 contamination and really split the data into two 9 categories. 10 Q (BY MR. SMYSER) What are those two 11 categories? 12 A The, what I call here on the slide 13 historical studies. And what I meant by that is 14 historical in the sense of studies conducted prior to 15 the trial. 16 And then the second is the data collected 17 as part of the trial, including the judicial 18 inspection data, where plaintiff experts and Chevron 19 experts collected environmental data and Cabrera and 20 his team collected environmental data. 21 Q Okay. And I want to discuss those with 22 you, although you may or may not be aware that the 23 judge, in writing his sentencia, said he wasn't going 24 to consider the Cabrera material. Were you aware of 25 that?</p>
127	<p>1 Q (BY MR. SMYSER) Questionable? 2 MR. SELEY: Objection. 3 A Questionable. A practice that an auditor 4 of an oil field made special note of. 5 Q (BY MR. SMYSER) Okay. Let's go to the 6 next picture. I guess now we're getting ready to 7 switch into data on contamination. And I would like 8 to take a short break if we could. 9 MR. SELEY: Okay. 10 THE VIDEOGRAPHER: Going off the record at 11 12:07. 12 (Recess taken from 12:07 p.m. to 13 1:07 p.m.) 14 THE VIDEOGRAPHER: This starts disk number 15 four. It's 1:07. We're back on the record. 16 Q (BY MR. SMYSER) Mr. Beltman, when we took 17 our last break, we had, I think, completed the 18 section of your PowerPoint presentation on the 19 sources of contamination. And I think we're now 20 about to enter the next section in which you talk 21 about the data that you reviewed that was about the 22 contamination. 23 So if you don't mind, I would like to 24 start our discussion of that section with your slide 25 that is headed data on contamination.</p>	129	<p>1 A Yes, I read that part of his decision. 2 Q Okay. So I'm not going to spend any time 3 with you on the Cabrera material because he said he 4 didn't consider it in writing his sentencia. 5 So let's go to the next slide, if we 6 might. And what is the purpose of this slide? 7 A This slide, excuse me, is a listing of 8 sources of data collected prior to the trial. So 9 this is a summary of the historical studies I 10 described in that previous slide. 11 Q Okay. And were some of these studies 12 performed by people associated with or hired by 13 Chevron-Texaco? 14 A Yes. The first two listed there, HBT AGRA 15 and Fugro-McClelland are the audits that I described 16 earlier. And as part of those audits, they did 17 collect some environmental data. 18 Q Okay. And what about the Woodward-Clyde 19 International study? 20 A That study was also conducted by a 21 contractor to Chevron-Texaco. And this particular 22 document describes cleanup, some aspects of the 23 cleanup, that was conducted in the mid to late 1990s, 24 as well as data that were collected as part of that 25 cleanup work.</p>

130	<p>1 Q And then you list some studies that are in</p> <p>2 Spanish or appear to have been in Spanish from the</p> <p>3 Instituto de Epidemiologia y Salud Comunitaria</p> <p>4 Manuel Amunarriz. I'm sure I mispronounced that.</p> <p>5 And there seem to be two of those in 1999. Those are</p> <p>6 different studies, though; is that correct?</p> <p>7 A They're different publications. I don't</p> <p>8 remember now if they were separate data collections</p> <p>9 or if they're two different reports using the same</p> <p>10 data, I can't remember.</p> <p>11 Q And the last one is from, it looks like it</p> <p>12 was done by the Colegio Fisco-Misional. What is</p> <p>13 that?</p> <p>14 A I don't know.</p> <p>15 Q Okay. And did you read these studies or</p> <p>16 look at the data in these studies in the course of</p> <p>17 doing your work analyzing the data concerning</p> <p>18 contamination?</p> <p>19 MR. SELEY: Objection. Leading.</p> <p>20 A Yes, I did look at the data from these</p> <p>21 studies. I would say I looked more carefully at some</p> <p>22 of the studies than others.</p> <p>23 Q (BY MR. SMYSER) Which are the ones you</p> <p>24 looked most carefully at?</p> <p>25 A I looked at the data from the Texaco</p>	132	<p>1 Q And how many stations were sampled during</p> <p>2 the judicial inspections?</p> <p>3 MR. SELEY: Objection. Lack of personal</p> <p>4 knowledge.</p> <p>5 A 11.</p> <p>6 Q (BY MR. SMYSER) And the total of stations</p> <p>7 and wells sampled during the judicial inspection?</p> <p>8 MR. SELEY: Same objection.</p> <p>9 A 45.</p> <p>10 Q (BY MR. SMYSER) And where did you get the</p> <p>11 data on this table for the judicial inspections?</p> <p>12 A I don't recall. It would have been either</p> <p>13 from the judicial inspection reports or from a</p> <p>14 database we had of the data collected during those</p> <p>15 inspections. I can't remember which, which I looked</p> <p>16 at to get those numbers.</p> <p>17 Q All right. Let's go to the next slide, if</p> <p>18 we could. And what is the purpose of this slide,</p> <p>19 entitled judicial inspections?</p> <p>20 MR. SELEY: Objection to the extent it</p> <p>21 calls for expert testimony.</p> <p>22 A I put this slide together to help provide</p> <p>23 a better description of what was done during the</p> <p>24 judicial inspections. What this slide is pointing</p> <p>25 out is that during the judicial inspections, the</p>
131	<p>1 audits. In fact, we discussed some of those data</p> <p>2 prior to the break. The Jocknick data, the third</p> <p>3 study listed there, also looked at those data</p> <p>4 carefully and went through the Woodward-Clyde report</p> <p>5 and data quite carefully.</p> <p>6 Q Okay. And I would like to talk to you a</p> <p>7 little more in depth about each one of those studies,</p> <p>8 but I prefer to continue with our walk through your</p> <p>9 presentation. So let's go to the next slide. And</p> <p>10 this slide contains a table, but the title of it is,</p> <p>11 sites sampled during the trial.</p> <p>12 What is the purpose of this slide?</p> <p>13 MR. SELEY: Objection. Calls for expert</p> <p>14 testimony.</p> <p>15 A The purpose of this slide is now to focus</p> <p>16 on the data collected during the trial. And this</p> <p>17 table in this slide shows a breakout of how many</p> <p>18 wells were built and operated by Texaco, how many</p> <p>19 stations were built and operated by Texaco, and then</p> <p>20 how many sites total were sampled during the judicial</p> <p>21 inspections of the trial, and then by the court</p> <p>22 expert, Mr. Cabrera, as part of the trial.</p> <p>23 Q And of the judicial inspections from 2003</p> <p>24 to 2006, how many wells were sampled?</p> <p>25 A 34.</p>	133	<p>1 environmental sampling included sampling of soils, of</p> <p>2 sediment, of groundwater and surface water. That</p> <p>3 those samples were analyzed for different chemical</p> <p>4 components, including petroleum, some of the</p> <p>5 individual chemicals within petroleum, some metals.</p> <p>6 And I showed in this slide that when you</p> <p>7 add up all of the individual chemical analyses on</p> <p>8 these samples in the judicial inspections, it totaled</p> <p>9 64,000 analyses, roughly.</p> <p>10 Q (BY MR. SMYSER) Okay. When you say</p> <p>11 64,000 analyses, can you break that down for us a</p> <p>12 bit. Because I guess I'm not understanding, if there</p> <p>13 were 45 sites sampled and we come up with 64,000</p> <p>14 analyses, what is the correlation between those two?</p> <p>15 A There's an intermediate piece --</p> <p>16 Q Okay.</p> <p>17 A -- of numbers which is at each of those</p> <p>18 sites, multiple samples were collected. And I didn't</p> <p>19 show in this slide, but then within each sample that</p> <p>20 was collected, there would be more than one chemical</p> <p>21 analysis conducted. We get results from more than</p> <p>22 one chemical, essentially.</p> <p>23 So this isn't showing the number of</p> <p>24 samples that were taken out of the field and sent to</p> <p>25 a lab, but it's showing the number of chemical</p>

134	<p>1 results that were obtained during the judicial 2 inspections.</p> <p>3 Q Okay. And based on your background, 4 training and experience, would a 64,000 analysis 5 total yield a result that had competence or no 6 competence with respect to what those analyses found, 7 the results of those analyses?</p> <p>8 MR. SELEY: Objection. Calls for expert 9 testimony. Leading. Calls for speculation.</p> <p>10 A I would say you can't conclude much from 11 that number on its own. It depends on where those 12 samples were collected. It depends on how the 13 analyses were conducted, what was analyzed for.</p> <p>14 So we don't typically look at the raw 15 number of chemical analysis on its own to be 16 indicative of the validity or invalidity of sampling 17 results.</p> <p>18 Q (BY MR. SMYSER) Okay. I expected that, 19 but I also expected that the reason you had this 20 number here must have had some significance to you 21 either as an indicator of some degree of statistical 22 competence or some other purpose.</p> <p>23 And if so, could you tell us what that is?</p> <p>24 A Yeah, the purpose is that trying to point 25 out here that -- I mean, it goes with the previous</p>	136	<p>1 A So this represents the number of samples 2 removed from the environment and sent to analytical 3 laboratories for chemical analysis.</p> <p>4 Q (BY MR. SMYSER) There appear to be two 5 little footnotes down there at the bottom that I 6 can't quite see. What do those indicate about the 7 sampling. It looks like they are A and B, perhaps 8 from the matrix?</p> <p>9 A Yes.</p> <p>10 Q All right.</p> <p>11 A So it's providing some clarification. The 12 column there that is titled water, the footnote 13 indicates that those water samples include samples of 14 surface water, that would be streams, rivers, 15 wetlands. It includes samples of groundwater. And 16 it includes some samples of production water. So 17 we're just defining what we mean by water in that 18 row.</p> <p>19 The other there is, again, it's showing 20 that what we're grouping there in that row of other, 21 the footnote says, includes asphalt, leachate and 22 quality control samples.</p> <p>23 Q Okay. What does it indicate about the 24 total number of samples that Chevron took?</p> <p>25 A This shows that the total number of</p>
135	<p>1 slide. 93 sites were sampled total between the 2 judicial inspections and the court expert. That's a 3 lot of sites being sampled. At those samples -- at 4 those sites it generated 64,000 chemical results, 5 that's a lot of chemical results.</p> <p>6 The point is that there was quite a bit of 7 sampling and analysis done. And I don't want to -- I 8 can't conclude on that number alone whether that's 9 enough or not, but that -- it's a large number. 10 64,000 is a big number.</p> <p>11 Q Okay. And let's go to the next slide and 12 see if that helps us out on the question of samples. 13 What is the purpose of this slide called number of 14 samples?</p> <p>15 MR. SELEY: Objection to the extent it 16 calls for expert testimony.</p> <p>17 A This slide now shows the number of samples 18 collected.</p> <p>19 Q (BY MR. SMYSER) And what is a sample?</p> <p>20 A A sample is a chunk of soil or of sediment 21 or of water or it could be of crude oil. It's 22 something that's removed from the environment and 23 that is a sample that has been sent to the analytical 24 laboratory for chemical analysis.</p> <p>25 Q (BY MR. SMYSER) Okay.</p>	137	<p>1 samples Chevron collected during the judicial 2 inspections was 1,206.</p> <p>3 Q It looks like that was almost three times 4 as many samples as the plaintiffs took?</p> <p>5 A Yep, between two and three times more, 6 yes.</p> <p>7 Q Okay. Let's go to the next slide. Now, 8 these next series of slides seem to deal with TPH. 9 And would you remind us of what TPH stands for?</p> <p>10 A TPH stands for Total Petroleum 11 Hydrocarbons, which is a measure of the total oil in 12 the sample.</p> <p>13 Q And then you have some standards here. 14 What are these standards about?</p> <p>15 A The first standard is the Ecuadorian 16 standard of 1,000 milligrams of TPH per kilogram of 17 soil.</p> <p>18 Q When you say the Ecuador standard, what do 19 you mean by that?</p> <p>20 MR. SELEY: Objection. Calls for expert 21 testimony.</p> <p>22 A When I put this presentation together, my 23 understanding was that in Ecuador there is a standard 24 that sets 1,000 milligrams per kilogram as the upper 25 limit of allowable TPH in soil.</p>

138	<p>1 Q (BY MR. SMYSER) Okay. And what did you</p> <p>2 find with respect to the United States standard?</p> <p>3 MR. SELEY: Objection. Calls for expert</p> <p>4 testimony.</p> <p>5 A In the United States, oil contamination in</p> <p>6 soil tends to be regulated at the state level, and</p> <p>7 those standards vary from state to state. There is</p> <p>8 no single universal approach or number.</p> <p>9 I say here in this slide, also, that in</p> <p>10 the earlier days of state regulations, those</p> <p>11 regulations tended to be expressed as TPH. So it</p> <p>12 would be a concentration of TPH in soil. But more</p> <p>13 recently, there's been a shift to regulate individual</p> <p>14 components, individual chemical components, of the</p> <p>15 oil such as BTEX, as we discussed before, rather than</p> <p>16 regulate on a TPH basis.</p> <p>17 Q (BY MR. SMYSER) Of course, I'm interested</p> <p>18 in what the standard would have been during the time</p> <p>19 that Texaco operated the concession. And I assume,</p> <p>20 based on what you're telling us here, that that would</p> <p>21 have been measured in TPH rather than BTEX?</p> <p>22 MR. SELEY: Objection. Leading. Calls</p> <p>23 for expert testimony.</p> <p>24 Q (BY MR. SMYSER) Can you tell us whether</p> <p>25 or not that's correct?</p>	140	<p>1 milligrams per kilogram of TPH.</p> <p>2 Q With respect to the wells, the 81 wells</p> <p>3 sampled, what did the tests determine with respect to</p> <p>4 those two standards? The number of percentage of</p> <p>5 sites with TPH that exceeded the state standard, the</p> <p>6 100 milligrams per kilogram?</p> <p>7 MR. SELEY: Objection. Calls for expert</p> <p>8 testimony.</p> <p>9 A I don't think I characterized the 100</p> <p>10 milligram per kilogram as a state standard. From my</p> <p>11 review of state standards in the past, on the TPH</p> <p>12 basis, numbers range quite a bit. It depends on the</p> <p>13 state.</p> <p>14 I do recall that 100 milligrams per</p> <p>15 kilogram is fairly typical across states. Some</p> <p>16 states had at the time TPH standards lower, some had</p> <p>17 TPH standards higher. But it's a level of 100 is</p> <p>18 certainly indicative of many state standards.</p> <p>19 And what this table shows is that of the</p> <p>20 81 well sites sampled during the trial, every one of</p> <p>21 them had at least one soil sample with TPH above 100</p> <p>22 milligrams per kilogram. And 98 percent, which is</p> <p>23 either all but one or two of those, had TPH above a</p> <p>24 thousand milligrams per kilogram in the soil.</p> <p>25 Q And that last number represents the upper</p>
139	<p>1 A It's generally correct.</p> <p>2 MR. SELEY: Objection.</p> <p>3 A It's generally correct. I didn't do a</p> <p>4 state-by-state timeline analysis of the development</p> <p>5 of their standards and when standards were in place</p> <p>6 based on TPH, when they shifted to an individual</p> <p>7 chemical basis. It's possible that at that time some</p> <p>8 states were regulating individual chemicals, I don't</p> <p>9 know, but certainly the majority of states, the</p> <p>10 majority of standards were TPH-based standards.</p> <p>11 Q (BY MR. SMYSER) Okay. Let's go to the</p> <p>12 next slide, please. And it looks like on this slide</p> <p>13 you're examining the amount of Total Petroleum</p> <p>14 Hydrocarbons in the soil. Is that the purpose of</p> <p>15 this slide?</p> <p>16 MR. SELEY: Objection. Leading.</p> <p>17 A Yes.</p> <p>18 Q (BY MR. SMYSER) What is the purpose of</p> <p>19 this slide?</p> <p>20 A The purpose of this slide is to summarize</p> <p>21 the TPH data in terms of what it says about soil</p> <p>22 contamination with oil. And it's comparing the</p> <p>23 contamination at wells and stations against the</p> <p>24 Ecuadorian standard of a thousand mg's per kg,</p> <p>25 milligrams per kilogram TPH and a level of 100</p>	141	<p>1 threshold for Ecuador?</p> <p>2 MR. SELEY: Objection. Leading. Calls</p> <p>3 for expert testimony.</p> <p>4 A My understanding at that time was that the</p> <p>5 1,000 milligrams per kilogram of TPH soil is an</p> <p>6 Ecuadorian standard, is the upper limit for, I think</p> <p>7 the wording is sensitive ecosystems or sensitive</p> <p>8 habitat so it doesn't apply to all soils across this</p> <p>9 country but my understanding is it would apply to</p> <p>10 this area.</p> <p>11 Q (BY MR. SMYSER) Let's look at the next</p> <p>12 group which are stations. How many stations were</p> <p>13 sampled?</p> <p>14 A 12 stations were sampled during the trial.</p> <p>15 Q What did you find with respect to TPH</p> <p>16 contamination in the soil using those two previously</p> <p>17 identified standards?</p> <p>18 MR. SELEY: Objection. Calls for expert</p> <p>19 testimony.</p> <p>20 A That 92 percent of the sites of the</p> <p>21 stations had soils with TPH above 100 ppm, and the</p> <p>22 same percent, which I believe would be all but one of</p> <p>23 them, had soils above a thousand milligrams per</p> <p>24 kilogram TPH.</p> <p>25 Q (BY MR. SMYSER) And then you have a last</p>

142	<p>1 column there labeled total of the 93 samples. And</p> <p>2 what did you find with respect to the levels of</p> <p>3 contamination of TPH in soil in those two categories</p> <p>4 previously identified?</p> <p>5 A What this table shows is that 99 percent</p> <p>6 of the sites sampled had TPH above 100 milligrams per</p> <p>7 kilogram. And 97 percent, which is all but two of</p> <p>8 them, had TPH above a thousand milligrams per</p> <p>9 kilogram.</p> <p>10 Q Let's go to the next slide and this slide</p> <p>11 again is called TPH in soil. What is the purpose of</p> <p>12 this slide in the graph contained on --</p> <p>13 MR SELEY: Objection. Calls for expert</p> <p>14 testimony.</p> <p>15 A The purpose of this slide was to show the</p> <p>16 TPH soil data in a different way. What this is now</p> <p>17 showing is the highest concentration of TPH measured</p> <p>18 at each one of the, what was it, 93 sites sampled</p> <p>19 during the trial.</p> <p>20 The bars on this, the red bars, it's the</p> <p>21 highest concentration measured at each individual</p> <p>22 site. So each bar represents a site, a site that was</p> <p>23 sampled during the trial.</p> <p>24 And the purpose of this was to provide a</p> <p>25 perspective on how high the TPH contamination is in</p>	144	<p>1 testimony.</p> <p>2 A These sites are ordered from lowest</p> <p>3 concentration to highest. So they're not ordered by</p> <p>4 region or by field. They're just ranked from low to</p> <p>5 high. And the sites at the farthest right are the</p> <p>6 sites with the highest TPH concentration measured in</p> <p>7 soil.</p> <p>8 And I think you said the maximum there is</p> <p>9 a hundred thousand. It's actually a million.</p> <p>10 Q (BY MR. SMYSER) A million?</p> <p>11 A Parts per million. Which would be, of</p> <p>12 course, pure crude oil. So there's the sites at the</p> <p>13 farthest right, the highest concentrations measured</p> <p>14 at them were approaching a million parts per million</p> <p>15 in soil.</p> <p>16 Q As an environmental scientist and based on</p> <p>17 your experience, work history, knowledge of the</p> <p>18 field, how would you characterize a concentration of</p> <p>19 TPH in the soil above 10,000 parts per million?</p> <p>20 MR. SELEY: Objection. Calls for expert</p> <p>21 testimony.</p> <p>22 A It's a question that really can only be</p> <p>23 thought of in terms of what are we comparing it</p> <p>24 against. 10,000 milligrams per kilogram of TPH is</p> <p>25 1 percent oil in soil. In this case, that's ten</p>
143	<p>1 the soils that were sampled during the trial.</p> <p>2 Q So each bar represents what?</p> <p>3 A Each bar is the maximum TPH concentration</p> <p>4 sampled at one of the sites.</p> <p>5 Q Okay. And the dotted line next to</p> <p>6 Ecuadorian law?</p> <p>7 A That dotted line is at the level of 1,000</p> <p>8 parts per million, or milligrams per kilogram of TPH.</p> <p>9 Q And what does the graph indicate with</p> <p>10 respect to the number of sites sampled that were</p> <p>11 below the upper threshold permitted under Ecuadorian</p> <p>12 law?</p> <p>13 MR. SELEY: Objection. Calls for expert</p> <p>14 testimony.</p> <p>15 A What this graph shows is similar to the</p> <p>16 slide we just looked at. It shows that all sites but</p> <p>17 two had samples collected from them with TPH greater</p> <p>18 than a thousand milligrams per kilogram. Only two</p> <p>19 sites had soil with the highest concentration less</p> <p>20 than a thousand.</p> <p>21 Q (BY MR. SMYSER) What is the significance</p> <p>22 of the last two on the right-hand side of the graph</p> <p>23 where the number seems to be approaching 100,000</p> <p>24 parts per million?</p> <p>25 MR. SELEY: Objection. Calls for expert</p>	145	<p>1 times higher than the Ecuadorian standard.</p> <p>2 Beyond characterizing it as 10,000</p> <p>3 milligrams per kilogram or 1 percent oil in soil, I'm</p> <p>4 not -- or in reference to a standard or some</p> <p>5 benchmark, I'm not sure how to answer that question.</p> <p>6 Q (BY MR. SMYSER) Okay. If you were doing</p> <p>7 an environmental study for someone who is looking at</p> <p>8 obtaining some property and they had contamination in</p> <p>9 the property of Total Petroleum Hydrocarbons over</p> <p>10 10,000 parts per million, would that be something</p> <p>11 that you would feel important to disclose to the</p> <p>12 potential purchaser of the property?</p> <p>13 MR. SELEY: Objection. Calls for</p> <p>14 speculation. Incomplete hypothetical. Calls for</p> <p>15 expert testimony.</p> <p>16 A That's not the kind of work I do, property</p> <p>17 evaluations. But if I were to do that, yes, I would</p> <p>18 highlight that as an indication that there is some</p> <p>19 sort of petroleum contamination in the soil that they</p> <p>20 should pay attention to.</p> <p>21 MR. SELEY: Move to strike.</p> <p>22 Q (BY MR. SMYSER) At the time you did this</p> <p>23 graph, would you have considered a contamination</p> <p>24 above 10,000 parts per million as significant</p> <p>25 contamination of the property and the environment in</p>

146	<p>1 the rainforest by oil?</p> <p>2 MR. SELEY: Objection. Calls for expert</p> <p>3 testimony, and leading.</p> <p>4 A It depends on what you're comparing it to.</p> <p>5 If we're comparing it to the Ecuadorian standard of a</p> <p>6 thousand, yes, absolutely. It's ten times higher</p> <p>7 than that standard. Absent that, it's difficult to</p> <p>8 provide a generalization or a characterization</p> <p>9 without comparing it to something. And --</p> <p>10 Q (BY MR. SMYSER) Okay. What would you</p> <p>11 compare it to? I'm looking for guidance from you as</p> <p>12 a person who put this graph together to help me -- to</p> <p>13 put it into significance, apart from what the numbers</p> <p>14 just say, this is ten times greater than 1,000 and</p> <p>15 100 times greater than 100?</p> <p>16 MR. SELEY: Objection. Vague. Calls for</p> <p>17 expert testimony.</p> <p>18 A The key point of this graph is to compare</p> <p>19 it to the Ecuadorian standard. The Ecuadorian</p> <p>20 standard is -- it's established, my understanding, is</p> <p>21 to help protect the environment. It's at a thousand.</p> <p>22 And this graph shows that all but two of the sites</p> <p>23 sampled have oil in the soils well above that</p> <p>24 standard. So with this slide, I was focused on</p> <p>25 comparing it to the standard of a thousand.</p>	148	<p>1 MR. SELEY: Objection. Calls for expert</p> <p>2 testimony. Calls for speculation. Lacks foundation.</p> <p>3 A When I put this table together, the point</p> <p>4 is that for these wells, which are typical of all of</p> <p>5 the wells that were sampled, samples collected by the</p> <p>6 plaintiffs tend to show higher contamination and in</p> <p>7 this case, as percent of samples that exceed a</p> <p>8 thousand, compared to Chevron samples. The Chevron</p> <p>9 samples show less contamination. The plaintiffs'</p> <p>10 samples show more contamination.</p> <p>11 Q (BY MR. SMYSER) Let me ask you about two</p> <p>12 that stood out to me, which is Guanta 7 and Lago</p> <p>13 Agrio 2, where the table indicates 100 percent of the</p> <p>14 plaintiffs' sample showed contamination in excess of</p> <p>15 a thousand parts per million and zero of Chevron's</p> <p>16 samples showed a like contamination. Do you have any</p> <p>17 explanation for that?</p> <p>18 MR. SELEY: Objection. Calls for</p> <p>19 speculation. Calls for expert testimony.</p> <p>20 A I don't recall the data from those two</p> <p>21 well sites specifically. I do recall that I looked</p> <p>22 at this issue in general. I may have looked at the</p> <p>23 data for these two sites as part of that. Typically,</p> <p>24 the reason for the differences between the</p> <p>25 plaintiffs' data and Chevron's data comes from two</p>
147	<p>1 Q Okay. Let's look at the next slide. And</p> <p>2 this slide is entitled percentage samples greater</p> <p>3 than 1,000 parts per million TPH. What is the</p> <p>4 purpose of this slide?</p> <p>5 MR. SELEY: Objection. Calls for expert</p> <p>6 testimony.</p> <p>7 A The purpose of this slide, as I recall,</p> <p>8 was twofold. One is this is another way to show</p> <p>9 those same TPH data, only now it's showing the data</p> <p>10 on a site by site basis. We're actually naming the</p> <p>11 sites. And it's showing the percent of samples</p> <p>12 collected from a site that exceeded a thousand.</p> <p>13 So now the question isn't are there any</p> <p>14 samples that exceed a thousand at the site, but what</p> <p>15 percent of the samples at the site exceed a thousand.</p> <p>16 That's one purpose.</p> <p>17 The second purpose is to put side by side</p> <p>18 that aspect of the data, the percent of samples that</p> <p>19 exceed a thousand, for the data collected by the</p> <p>20 plaintiffs' experts and the data collected by</p> <p>21 Chevron's experts as a comparison.</p> <p>22 Q (BY MR. SMYSER) And what does the data</p> <p>23 show with respect to the comparison between the</p> <p>24 samples taken by the plaintiffs and the samples taken</p> <p>25 by Chevron's experts?</p>	149	<p>1 sources. One is where they sampled.</p> <p>2 Chevron tended to collect samples that</p> <p>3 were away from pits or away from the areas where the</p> <p>4 wells operated. Whereas the plaintiffs tended to</p> <p>5 collect samples closer to the pits, sometimes right</p> <p>6 on the pits.</p> <p>7 Chevron collected samples from pits, too,</p> <p>8 but when you look at the pattern overall, the Chevron</p> <p>9 samples tend to be from areas that are farther from</p> <p>10 the pits, and plaintiffs' are from areas closer to</p> <p>11 the pits.</p> <p>12 Another reason, as I recall from looking</p> <p>13 at the data, is a difference in the analytical</p> <p>14 methods between the plaintiffs and Chevron.</p> <p>15 Q (BY MR. SMYSER) What were the</p> <p>16 differences?</p> <p>17 MR. SELEY: Objection. Calls for expert</p> <p>18 testimony.</p> <p>19 A The plaintiffs reported using a method</p> <p>20 that is actually no longer allowed in the United</p> <p>21 States. These analyses were done in Ecuador. But</p> <p>22 it's a method that extracts very effectively all of</p> <p>23 the oil in a soil sample and then analyzes it.</p> <p>24 The method that Chevron used, the analyses</p> <p>25 were done here in the U.S., the method requires</p>

150	<p>1 different steps to extract different ranges of 2 petroleum in the soil. You can think of it as light 3 material in petroleum, medium and heavier components. 4 The method that Chevron used quantified 5 the light petroleum components in the soil and the 6 medium weight components of petroleum in the soil, 7 but did not measure the heavier components of oil in 8 the soil. 9 So the analytical method didn't capture 10 all of the oil contamination in the soil. 11 Q (BY MR. SMYSER) Are you aware of whether 12 there is an approved scientific basis for excluding 13 the heavy material from the analysis? 14 MR. SELEY: Objection. Calls for expert 15 testimony. Calls for speculation. 16 A I think that's probably too broad a way to 17 think of it. It depends on what answer -- what 18 question you're trying to answer. 19 Q (BY MR. SMYSER) Well, you indicated in 20 your testimony that the method Chevron used 21 quantified the light petroleum components in the soil 22 but did not measure the heavier components of oil in 23 the soil. 24 And so my question is, given that answer, 25 is there a scientific, acceptable scientific reason</p>	152	<p>1 myself. I don't think I knew what questions they 2 were posing specifically. 3 Q (BY MR. SMYSER) Okay. In the context of 4 these tests was it in your mind scientifically valid 5 for Chevron to exclude the testing for the heavier 6 petroleum products? 7 MR. SELEY: Objection. Leading. Calls 8 for expert testimony. Calls for speculation. 9 A I'm sorry, what was the phrase you used, 10 scientifically -- 11 Q (BY MR. SMYSER) I would like to use a 12 phrase that you would consider appropriate, not being 13 a scientist myself. I'm trying to determine if this 14 was a valid way to approach the issue, which was the, 15 I take it, the amount of contamination in the soil of 16 TPH? 17 MR. SELEY: Same objections. 18 A To analyze the soil and compare it to the 19 1,000 milligram per kilogram standard in Ecuador or 20 any standard or guideline based on TPH, not measuring 21 the heavy components of oil is incorrect, in my 22 opinion. 23 Q (BY MR. SMYSER) Okay. 24 MR. SELEY: Move to strike. 25 Q (BY MR. SMYSER) Now, it appears based on</p>
151	<p>1 for not including the heavier components of oil in 2 the soil when performing an analysis for TPH? 3 MR. SELEY: Objection. Calls for expert 4 testimony. Calls for speculation. 5 A There can be. It depends on the question 6 you're trying to address with the sampling. For 7 example, the -- I mentioned that state regulation of 8 TPH in soils has moved toward basing the standards on 9 measures of individual chemicals. 10 Those individual chemicals are in the 11 light and the medium fractions portions of petroleum. 12 So if that's what you're regulating on, there is less 13 or maybe no need to quantify what is in the heavier 14 fraction. 15 On the other hand, if the question is how 16 much oil is there in the soil, then you should 17 measure what's in all three fractions. 18 Q (BY MR. SMYSER) In the testing that 19 occurred in the judicial inspections, do you know 20 what the question was? 21 MR. SELEY: Objection. Calls for 22 speculation. 23 A No, I don't think I do know the specific 24 questions. I just thought of what questions these 25 data would be best used for when I analyzed them</p>	153	<p>1 this table that there were a number of sites in which 2 Chevron tests, even excluding the heavier oil 3 components, detected the presence of TPM (sic) in the 4 soil -- I mean TPH in the soil, in excess of 1,000 5 parts per million. 6 Can you explain that? 7 MR. SELEY: Objection. Calls for expert 8 testimony. Calls for speculation. 9 A What that means is that in these samples 10 that Chevron collected and analyzed there is greater 11 than a thousand ppms, or milligrams per kilogram of 12 TPH, that in just the light and medium fractions. So 13 those fractions alone, when you add them up, exceed a 14 thousand ppm TPH. 15 Q (BY MR. SMYSER) And if they had also 16 tested for the heavier oil products in those samples, 17 would you have or would you not have expected the 18 number of samples indicating the presence of 1,000 19 parts per million TPH in the soil to increase or 20 decrease? 21 MR. SELEY: Objection. Calls for 22 speculation. Calls for expert testimony. 23 A Increase. I can't be specific like how 24 many or at which site, but overall, when you do a 25 sampling program where you sample part of the</p>

154	<p>1 contamination versus all of it, you will see more</p> <p>2 when you sample for all of it.</p> <p>3 MR. SELEY: Move to strike.</p> <p>4 Q (BY MR. SMYSER) And so in these cases</p> <p>5 where the Chevron tests indicated more than a</p> <p>6 thousand parts per million of TPH in the soil, that</p> <p>7 would have exceeded what you understood to be the</p> <p>8 threshold standard established by Ecuadorian law?</p> <p>9 MR. SELEY: Objection. Calls for</p> <p>10 speculation. Calls for expert testimony.</p> <p>11 A Yes, that's correct.</p> <p>12 Q (BY MR. SMYSER) All right. Let's go to</p> <p>13 the next slide, if we might. Now, I'm afraid I</p> <p>14 looked at this slide and had a fair amount of</p> <p>15 difficulty figuring out what you were getting at</p> <p>16 here.</p> <p>17 Could you explain this slide to us? What</p> <p>18 is the purpose of the graphs on the side and the</p> <p>19 arrows running to the picture labeled Shushufindi</p> <p>20 well number 38?</p> <p>21 MR. SELEY: Objection. Calls for expert</p> <p>22 testimony.</p> <p>23 A Yes, I will. And I admit this, there's a</p> <p>24 lot going on with this slide. This slide shows some</p> <p>25 information for one of the wells, Shushufindi</p>	156	<p>1 Q (BY MR. SMYSER) What are the green dots?</p> <p>2 A What is also shown in that aerial</p> <p>3 photograph are the green dots, which are the</p> <p>4 locations based on a global positioning system, GPS,</p> <p>5 of where the plaintiffs' experts collected samples,</p> <p>6 soil samples at this site.</p> <p>7 And then the yellowish stars are, again,</p> <p>8 based on GPS coordinates, the locations where</p> <p>9 Chevron's experts collected soil samples.</p> <p>10 The data from those samples, specifically</p> <p>11 the TPH data, are shown in these series of graphs on</p> <p>12 the right.</p> <p>13 Q (BY MR. SMYSER) Okay. Before you get to</p> <p>14 those, you have a legend underneath the photograph</p> <p>15 that tells us the directions, north, west, east, and</p> <p>16 south. But it also has some feet and meters. And is</p> <p>17 that indicating the scale in the photograph of how</p> <p>18 far distances are in the photograph?</p> <p>19 A Yes, just for that aerial photograph, not</p> <p>20 the ones at the bottom.</p> <p>21 Q Right.</p> <p>22 A But, yes, for that upper one.</p> <p>23 Q Okay. So let's, if we could, let's go to</p> <p>24 the graphs under TPH and samples collected during</p> <p>25 trial. And let's look at the first graph. And would</p>
155	<p>1 well 38. This is a well that I have been to. I took</p> <p>2 the fixtures at the lower left of the pit, one of the</p> <p>3 pits where you can still see oil.</p> <p>4 This well was operated by Texaco and shut</p> <p>5 down prior to Petroequador taking over operations in</p> <p>6 the field.</p> <p>7 Q (BY MR. SMYSER) Did you -- these</p> <p>8 pictures, are they true and accurate representations</p> <p>9 of what you saw there when you were there?</p> <p>10 A Yes.</p> <p>11 Q Okay. Please continue.</p> <p>12 A In the upper left portion is an older</p> <p>13 aerial photograph -- I'm sorry, is it okay if you</p> <p>14 don't explode it. Okay. Thanks.</p> <p>15 It's an aerial photograph with a date of</p> <p>16 1986. And this shows outlined in black and then in</p> <p>17 the triangle where the well pad and the actual well</p> <p>18 is or actually, it still is there.</p> <p>19 And then outlined in these purple circles</p> <p>20 or ovals are the locations of the waste pits that</p> <p>21 Texaco built when they were operating the well site.</p> <p>22 So the idea here is to show the layout of</p> <p>23 the oil pad, the oil well itself, and then in this</p> <p>24 case, the three waste pits.</p> <p>25 MR. SELEY: Move to strike.</p>	157	<p>1 you tell us what that is indicating?</p> <p>2 MR. SELEY: Objection. Calls for expert</p> <p>3 testimony.</p> <p>4 A This first graph is depicting the TPH soil</p> <p>5 data collected from the location shown by the green</p> <p>6 circle that's connected to it with a black line. And</p> <p>7 the way that this graph shows it is, in this case</p> <p>8 we're now looking at TPH concentration going on the X</p> <p>9 axis up from left to right.</p> <p>10 So the farther we are to the right, the</p> <p>11 higher the TPH concentration. And on the Y axis is</p> <p>12 depicted the depth from which the soil sample was</p> <p>13 collected. And you can see the scale on that goes</p> <p>14 from zero, which would be right at the surface, down</p> <p>15 to 5 meters. So it's 5 meters below the surface.</p> <p>16 So we're showing here the depth of the</p> <p>17 sample as well as the TPH concentration in that</p> <p>18 sample.</p> <p>19 Q (BY MR. SMYSER) Okay. And what was the</p> <p>20 depth of the sample in the first graph?</p> <p>21 A In that first one at the top, it looks</p> <p>22 like the depth is at the surface and goes down to</p> <p>23 approximately half a meter, is what this shows.</p> <p>24 Q All right. And what did it indicate with</p> <p>25 respect to how much TPH was found in that sample?</p>

158	<p>1 A By eyeballing this, it looks like it was 2 just over 500 parts per million of TPH in that 3 sample. 4 Q Okay. Let's go to the next graph. 5 A And if I could just add -- 6 Q Sure. 7 A -- one more point is that what we're 8 showing here on these graphs are all the samples for 9 which we had data. So we aren't selectively showing 10 some samples. What that means is at that green dot 11 there was only one depth sampled, that top one, there 12 weren't any other samples collected. 13 Q Okay. Now, if you could, let's go to the 14 next graph. And I assume -- I'll let you tell us, 15 though -- I assume, this is the same program in that 16 it's samples from those green dots there? 17 A Yes. This is now showing the data for a 18 soil sample from a different green dot. This one 19 looks like it's close to or maybe on the edge of one 20 of the pits. The plot shows that it's from a depth 21 of around a meter deep below the surface and that in 22 that sample, the concentration, it was somewhere -- 23 it's a little bit hard to tell. What is happening 24 here is that the concentration is so high that we had 25 to break the X axis and extend it. Otherwise you</p>	160	<p>1 A I don't remember what standard they used 2 as -- I think what you're asking is the trigger for 3 cleanup, whether or not to clean a site up. I don't 4 remember what standard they used. I remember a 5 standard they used once they were doing the cleanup, 6 whether they knew they were done or not. But I don't 7 recall the standard used as a trigger. 8 Q (BY MR. SMYSER) Okay. Do you remember 9 whether, if I were to indicate to you that it was 10 5,000 parts per million of TPH, would that refresh 11 your recollection in any way? 12 MR. SELEY: Objection. Leading. 13 A That sounds reasonable. It might have 14 been 10,000. It was more than a thousand. The exact 15 number, I can't remember. 16 Q (BY MR. SMYSER) Okay. Do you remember 17 whether this Shushufindi well number 38 was a well 18 that Texaco remediated? 19 MR. SELEY: Objection. Misstates facts. 20 Calls for speculation. 21 A I don't remember. I don't think so, but I 22 don't remember for sure. 23 Q (BY MR. SMYSER) Okay. If the standard 24 for remediation was 10,000 parts per million of TPH, 25 would this sample indicate that this was a well that</p>
159	<p>1 wouldn't be able to see the data. It looks like it's 2 somewhat less than 200,000 parts per million of TPH 3 in this sample, but I can't tell. Maybe it's 4 150,000. It's in that ballpark. 5 Q Okay. 6 MR. SELEY: Move to strike as improper 7 testimony. 8 Q (BY MR. SMYSER) Now, let me ask you to 9 clarify a couple other data points. There is a 10 horizontal or vertical line running up from 1,000 11 that intersects the green line. What does that 12 represent? 13 MR. SELEY: Objection. Calls for expert 14 testimony. 15 A In this graph I put that line there to 16 represent the Ecuadorian standard of 1,000 milligrams 17 per kilogram of TPH in soil. 18 Q (BY MR. SMYSER) I'm going to sort of do a 19 brief aside with you. Do you remember what the 20 standard was that Texaco chose to determine whether 21 or not wells needed to be remediated under its 22 agreement with the Republic of Ecuador to remediate 23 wells when they left the concession? 24 MR. SELEY: Objection. Misstates facts. 25 Lacks foundation.</p>	161	<p>1 fell within that trigger point? 2 MR. SELEY: Objection. Calls for 3 speculation. Improper hypothetical. 4 A Yes. This sample is well above a standard 5 of 10,000 or 5,000 or 1,000. 6 Q (BY MR. SMYSER) Okay. Let's look at the 7 next graph, if we would. And, again, I assume this 8 is another sample close to the last one you 9 discussed. And would you tell us about that? 10 MR. SELEY: Objection. Calls for expert 11 testimony. 12 A This shows the results from two samples 13 collected at the same location, where it's the green 14 dot again connected by the black line of this graph. 15 One sample at this location was collected from the 16 surface, it looks like down to a little less than a 17 meter. And then there was another sample collected 18 from roughly one and a half meters down to two meters 19 down below the surface. 20 Q (BY MR. SMYSER) And what did the sampling 21 show? 22 MR. SELEY: Same objection. 23 A What this plot shows is that that top 24 sample had a TPH concentration of roughly 300,000 25 parts per million TPH. And then the sample from</p>

162	<p>1 roughly one and a half to two meters down had a 2 little over a thousand milligrams per kilogram TPH. 3 Q (BY MR. SMYSER) And let's go to the next 4 graph. Actually, let's do the last three of these 5 graphs together, if you don't mind. 6 A Okay. 7 Q What do they show in sum? 8 A And do you mean the last -- these last 9 three or the last -- 10 Q These last three, the next three in line 11 there. 12 A Thank you. 13 Q Those three. 14 A Yeah. 15 MR. SELEY: Same objection. 16 THE DEPONENT: I'm sorry, would you just 17 not -- yeah, it's easier. Thank you. 18 A So these show again three more samples 19 collected by the Demandante experts, or plaintiff 20 experts. These three are all from the larger pit at 21 the site, that area of the pit which is the pit shown 22 in the photo below. And these graphs show that the 23 samples collected had over 400,000 milligrams per 24 kilogram TPH. The second one had approximately 25 200,000 milligrams per kilogram TPH. And then the</p>	164	<p>1 time about the propriety of the location chosen by 2 the Demandantes for selection of their samples? 3 MR. SELEY: Objection. Leading. Calls 4 for speculation. Calls for expert testimony. 5 A Yes, part of the purpose of this -- 6 Q (BY MR. SMYSER) What was your opinion? 7 MR. SELEY: Same objections. 8 A Part of the purpose of showing the data 9 this way is to amplify the point I previously made, 10 that there is differences between the data the 11 plaintiffs' experts collected and the data Chevron's 12 experts collected. 13 The plaintiffs' data tend to show higher 14 levels of contamination than Chevron's data. And 15 this is -- I intended this to be a clear way to show 16 why that is. The plaintiffs collected samples from 17 around or closer to the pits, whereas Chevron's 18 samples are located outside of the pits. 19 Q (BY MR. SMYSER) You, yourself, did not do 20 any of the sampling collection; is that correct? 21 A That's correct. 22 Q Have you in the past in your work had 23 occasion to either collect samples yourself or direct 24 people to collect samples to determine whether or not 25 there's environmental contamination?</p>
163	<p>1 third one had about 300,000 milligrams per kilogram 2 of TPH. 3 Q (BY MR. SMYSER) And do those amounts of 4 TPH in the soil exceed that recommended by Ecuador? 5 MR. SELEY: Objection. Calls for expert 6 testimony. Calls for speculation. Misstates facts. 7 A Yes. 8 Q (BY MR. SMYSER) Okay. 9 A By a lot. 10 MR. SELEY: Move to strike. 11 Q (BY MR. SMYSER) And the last graph, what 12 is the last graph? 13 A The last graph at the bottom, it's a 14 little bit different than the others because it's 15 depicting here the results for the samples collected 16 by Chevron's experts, but it's doing it a different 17 way. You can see in the aerial photograph that 18 Chevron's experts collected soil samples from four 19 locations. And at all four locations, there were no 20 TPH detections in any of the samples they collected. 21 So we just showed this as one plot, even 22 though there are -- there's more than one sample, 23 obviously, but no TPH was detected in any of the 24 samples collected by Chevron's experts here. 25 Q Do you -- did you have an opinion at the</p>	165	<p>1 A Yes. 2 Q Okay. If you had been taking the samples, 3 directing someone to take the samples in Shushufindi 4 well number 38, would you have directed individuals 5 to take samples in the locations where Chevron took 6 the samples? 7 MR. SELEY: Objection. Incomplete 8 hypothetical. Calls for speculation. Calls for 9 expert testimony. 10 A It again gets to what question we're 11 trying to answer. In this case, if I can imagine 12 having been one of the experts, if the purpose of the 13 sampling is to understand or describe the 14 contamination at this well site that's present at the 15 time of the sampling because of past operations, I 16 would definitely sample from the pits. 17 Pits are known to be areas where waste was 18 dumped. They're known to be areas where there's 19 likely to be contamination. And I would definitely 20 sample from the areas of the pits and around the 21 pits. 22 Q (BY MR. SMYSER) Would you have also 23 sampled from other areas? 24 A Again, it depends on what the objective 25 is. If the objective is to determine if the pits are</p>

166	<p>1 contaminated, then, yes. I'm sorry, then the focus 2 would be on the pits. 3 If the objective is to understand 4 contamination over a wider area, then, yes, I would 5 go collect samples over a wider area. 6 Q Let's go to the next slide. Now, it looks 7 like in this slide you change from oil to 8 groundwater; is that correct? 9 A Yes, that's correct. 10 Q Would you explain the table here for us, 11 please? 12 MR. SELEY: Objection to the extent it 13 calls for expert testimony. 14 A This table summarizes the data on TPH in 15 groundwater. It separates out the data by data 16 collected by the Demandante experts during the 17 judicial inspections, data collected by Chevron's 18 experts during the judicial inspections and data 19 collected by the court expert. And it shows the 20 number of groundwater samples collected by each of 21 those parties. 22 And of those samples, the percent that had 23 TPH measured in them greater than the Ecuadorian 24 standard of 0.325 milligrams per liter of TPH. 25 Q (BY MR. SMYSER) And what did the table</p>	168	<p>1 collected by plaintiffs and collected by the Chevron 2 experts. 3 Q (BY MR. SMYSER) And based on review of 4 that data, did you form an opinion as to whether or 5 not Chevron used the same selective method of 6 sampling that was used in sampling the soil? 7 MR. SELEY: Objection. Calls for expert 8 testimony and leading. 9 A I concluded that -- 10 Q (BY MR. SMYSER) Did you form an opinion? 11 A I formed an opinion. I'm not sure if it's 12 specific to the way you asked the question, though. 13 Q Okay. What opinion did you form? 14 MR. SELEY: Objection. Calls for expert 15 testimony. 16 A The opinion I formed is that similar to 17 soil samples, one of the reasons why there's such a 18 dramatic difference in the amount of contamination 19 shown between the Demandantes data and Chevron's data 20 is where the samples were collected. That in 21 general, Chevron experts tended to collect 22 groundwater samples farther away from pits whereas 23 the plaintiffs' experts collected them closer to the 24 pits, at well sites. 25 MR. SELEY: Move to strike.</p>
167	<p>1 show with respect to the percentage of samples, the 2 Ecuadorian standard, as sampled by the Demandantes or 3 the Ecuadorian plaintiffs? 4 MR. SELEY: Objection. Calls for expert 5 testimony. 6 A What this table shows is that of the 7 groundwater samples collected by the plaintiffs' 8 experts, 59 percent had TPH measured in them above 9 the standard of 0.325 milligrams per liter. 10 Q (BY MR. SMYSER) And what does it indicate 11 with respect to the samples collected by Chevron? 12 MR. SELEY: Same objection. And the 13 document speaks for itself. 14 A It shows that of the samples collected by 15 Chevron, 1 percent had TPH measured in them above 16 0.325. 17 Q (BY MR. SMYSER) Did you see any data that 18 would give you an indication of where these samples 19 were taken, similar to the data that you showed us in 20 the previous slide that indicated where the soil 21 samples were taken? 22 MR. SELEY: Objection. Calls for 23 speculation. 24 A Yes, I've seen maps showing or aerial 25 photos showing locations of groundwater samples</p>	169	<p>1 Q (BY MR. SMYSER) Did you form an opinion 2 as to whether or not the percentage of TPH in the 3 water in excess of the limit set by Ecuador presented 4 an environmental hazard? 5 MR. SELEY: Objection. Calls for expert 6 testimony. Calls for speculation. 7 A No, I didn't. I didn't do any other 8 analysis other than comparing it to the Ecuadorian 9 standard. 10 Q (BY MR. SMYSER) Okay. Your next slide is 11 called Petroequador or Texaco? 12 What is the purpose of this slide? 13 MR. SELEY: Objection to the extent it 14 calls for expert testimony. 15 A The purpose of this slide is to provide 16 some background on -- on the issue of what we can say 17 about contamination at well sites in production 18 stations now as coming from either Texaco's 19 operations prior to 1990 or since Petroequador took 20 over after 1990. 21 Q (BY MR. SMYSER) How many -- what 22 percentage of the sites that had been built by Texaco 23 and by Petroequador, what percentage of them were 24 operated only by Texaco? 25 MR. SELEY: Objection. Lacks foundation.</p>

170	<p>1 Calls for speculation. Calls for expert testimony.</p> <p>2 A Could you rephrase the question, please?</p> <p>3 Q (BY MR. SMYSER) Sure. What percentage of</p> <p>4 the sites built by Texaco were operated by Texaco</p> <p>5 only?</p> <p>6 MR. SELEY: Same objection.</p> <p>7 A The records show that of the sites built</p> <p>8 and operated by Texaco, about 25 percent of them, as</p> <p>9 indicated on this slide, were shut down prior to</p> <p>10 Petroequador taking over. In other words, they</p> <p>11 were -- they stopped production. So production</p> <p>12 happened only during Texaco's time.</p> <p>13 Q (BY MR. SMYSER) And what would that show</p> <p>14 you with respect to whether or not any contamination</p> <p>15 at those sites was solely caused by Texaco or</p> <p>16 contributed to by Petroequador?</p> <p>17 MR. SELEY: Objection. Calls for</p> <p>18 speculation.</p> <p>19 A What it means is that once a well site is</p> <p>20 shut down and no longer producing, the sources of</p> <p>21 potential contamination at that well site have</p> <p>22 been -- have been removed. So if we go now and look</p> <p>23 at a well site that was operated by Texaco only and</p> <p>24 we find contamination, that tells us that that</p> <p>25 contamination was generated during operations by</p>	172	<p>1 well sites built by Texaco. None of those were</p> <p>2 initially drilled or developed by Petroequador.</p> <p>3 So the conclusion is that at these sites,</p> <p>4 since the majority of the contamination is going to</p> <p>5 happen at the initial drilling and development, not</p> <p>6 during production, even at well sites that were taken</p> <p>7 over by Petroequador, much of the contamination would</p> <p>8 have originated from the initial drilling and</p> <p>9 development by Texaco.</p> <p>10 MR. SELEY: Move to strike.</p> <p>11 Q (BY MR. SMYSER) Let me ask you, you</p> <p>12 indicate next that there were several improvements</p> <p>13 that Petroequador made over Texaco. What do you have</p> <p>14 reference to when you say improvements over Texaco as</p> <p>15 operator of the well, or what are you referencing?</p> <p>16 MR. SELEY: Objection to the extent it</p> <p>17 calls for expert testimony.</p> <p>18 A Yes, this is referring to how the</p> <p>19 operations were conducted by Petroequador compared to</p> <p>20 Texaco. And when Petroequador took over the field,</p> <p>21 the documents I've read show that they made several</p> <p>22 kinds of improvements. One we mentioned previously</p> <p>23 is that they reinjected all produced water deep</p> <p>24 underground as opposed to Texaco dumping it into the</p> <p>25 streams and rivers.</p>
171	<p>1 Texaco since the site hadn't been operated by</p> <p>2 Petroequador.</p> <p>3 Q (BY MR. SMYSER) You indicate that most</p> <p>4 well site contamination occurs during drilling and</p> <p>5 initial development, not ongoing production. Would</p> <p>6 you explain that, please?</p> <p>7 MR. SELEY: Objection. Calls for expert</p> <p>8 testimony. Lacks foundation.</p> <p>9 A My reading of how Texaco operated this oil</p> <p>10 field, once the wells were producing the</p> <p>11 oil-water-gas mixture, that was sent in essentially a</p> <p>12 closed system right to the processing stations.</p> <p>13 So once a well was operating, the</p> <p>14 opportunities for contamination to happen at the well</p> <p>15 site were reduced. There can still be contamination</p> <p>16 at the processing station, of course, but at the well</p> <p>17 site, once that well is in place and operating, it's</p> <p>18 essentially a closed system.</p> <p>19 Most of the contamination then at these</p> <p>20 wells is going to happen during the initial drilling</p> <p>21 and development of the well, to get it started in the</p> <p>22 first place.</p> <p>23 And this slide describes that. My</p> <p>24 understanding was that the 356 well sites upon which</p> <p>25 this, the case of the plaintiffs, was based were only</p>	173	<p>1 Another difference, and this is documented</p> <p>2 in the Texaco audits, is that Petroequador, soon</p> <p>3 after taking over operations, initiated programs to</p> <p>4 detect oil spills -- this would be primarily from</p> <p>5 pipelines -- and respond to them and clean them up.</p> <p>6 Petroequador also, they, themselves have</p> <p>7 continued to drill wells. They're not only operating</p> <p>8 some wells that Texaco drilled, but they're drilling</p> <p>9 some of their own. And those wells are, again, not</p> <p>10 part of the 356. But in their drilling and</p> <p>11 development operations, I have seen that they're</p> <p>12 using on-site tanks to handle the waste rather than</p> <p>13 the open pits that Texaco used.</p> <p>14 MR. SELEY: Move to strike.</p> <p>15 Q (BY MR. SMYSER) Let's go to -- let's go</p> <p>16 to the next slide. We're back to TPH in soil. What</p> <p>17 is the purpose of this slide with respect to Texaco</p> <p>18 only, and Texaco then Petroequador comparison?</p> <p>19 A The purpose of this slide was to summarize</p> <p>20 the TPH data on soil contamination broken out by two</p> <p>21 kinds of well sites. The well sites that were built</p> <p>22 by Texaco, operated by Texaco, but shut down prior to</p> <p>23 1990, versus contamination at well sites that were</p> <p>24 built by Texaco, operated by Texaco and then</p> <p>25 continued to be operated by Petroequador after 1990.</p>

174	176
<p>1 Q And what did the table indicate with 2 respect to the level of contamination at those two 3 groups of sites? 4 MR. SELEY: Objection. Calls for expert 5 testimony. 6 A This table summarizes the soil 7 contamination in terms of the percent of the sites 8 that have TPH in the soil greater than either 100 9 milligrams per kilogram or a thousand milligrams per 10 kilogram. 11 And what this shows is that there is 12 essentially no difference in the percent of sites 13 that are contaminated using these measures of 14 contamination, whether the sites were operated by 15 Texaco only, or operated by Texaco and then 16 Petroequador. 17 Q (BY MR. SMYSER) And what is -- 18 MR. SELEY: Move to strike. 19 Q (BY MR. SMYSER) And what is the 20 significance of that finding in terms of the source 21 of the contamination and how the contamination 22 occurred? 23 MR. SELEY: Objection. Calls for expert 24 testimony. Calls for speculation. Lacks foundation. 25 A I think -- I think what this table shows</p>	<p>1 arguments that because of that cleanup that was 2 conducted in the 1990s, their liability is reduced or 3 eliminated. 4 And that first bullet point there gets to 5 just pointing out that there are legal issues related 6 to the agreement between the Republic of Ecuador and 7 Texaco about the release. I have heard the attorneys 8 for the plaintiffs talk about whether that release 9 applies to their clients or not. 10 I don't know about those issues. But when 11 I put this slide together, I just wanted to point out 12 that there are legal issues, totally separate from 13 the scientific issues about the cleanup. 14 Q (BY MR. SMYSER) Well, then, with respect 15 to the scientific issues, do you address those 16 somewhat in this slide? 17 MR. SELEY: Same objections. 18 A Yes. 19 Q (BY MR. SMYSER) Okay. What did you 20 conclude with respect to those scientific issues as 21 to why the cleanup was ineffective? 22 MR. SELEY: Same objections. Leading. 23 A What this slide is showing, there's a 24 bullet there that says reasons why the cleanup was 25 ineffective. There are several different reasons.</p>
175	177
<p>1 is that when the sampling was conducted during the 2 trial, essentially every site operated by Texaco and 3 then shut down prior to Petroequador taking over was 4 contaminated. Certainly, all were contaminated if 5 you look at a standard of a hundred. Almost all were 6 contaminated based on a standard of a thousand 7 milligrams per kilogram. 8 In other words, these sites were 9 contaminated when Texaco left them, and you cannot 10 see any additional contamination from Petroequador 11 when you summarize the data in this way. 12 MR. SELEY: Move to strike. 13 Q (BY MR. SMYSER) Let's look at the next 14 slide. As we discussed earlier, Texaco undertook to 15 do a pit cleanup in the 1990s. Do you remember that? 16 A Yes. 17 Q What was the purpose of this slide in 18 connection with that evaluation of that pit cleanup? 19 MR. SELEY: Objection to the extent it 20 calls for expert testimony or legal conclusions. 21 A This slide summarizes some points I wanted 22 to make about that cleanup. 23 Q What were those points? 24 MR. SELEY: Same objections. 25 A The points have to do with Chevron's</p>	<p>1 Q (BY MR. SMYSER) And what were those 2 reasons? 3 MR. SELEY: Same objections. 4 A One of the reasons is that it's not always 5 clear when people hear about Texaco's cleanup in the 6 1990s, that when they did this cleanup they actually 7 conducted activities at only about 16 percent of the 8 pits that they built and left, based on the total 9 number of pits that Mr. Cabrera reports. 10 So 84 percent of the pits that they built 11 and left, nothing was done. And aside from what was 12 done to clean up the contamination at the 16 percent, 13 the fact that 84 percent went untouched alone says 14 that that cleanup was ineffective. 15 Q (BY MR. SMYSER) Okay. 16 MR. SELEY: Move to strike. 17 Q (BY MR. SMYSER) We previously discussed, 18 or I tried to remember the trigger point for when 19 Texaco decided to clean up a pit. Would you explain 20 whether or not this next slide has any reference to 21 that, or what is the purpose of that bullet point? 22 MR. SELEY: Objection. Sorry. Objection 23 to the extent it calls for expert testimony. 24 A This bullet point is speaking to once they 25 were conducting a cleanup at a site, they were doing</p>

178	<p>1 something, taking out oil, moving dirt. Once they 2 were doing it, how they knew when they were done. 3 Again, I can't remember. This doesn't 4 refresh my memory if there was a different trigger to 5 make the decision about a cleanup or not but once 6 something was happening at a site, this is how they 7 knew whether they were done or not. 8 Q (BY MR. SMYSER) Okay. And how did they 9 know whether they were done or not? What was the 10 test or the standard by which they measured 11 whether -- they concluded that they were done with 12 the cleanup? 13 MR. SELEY: Objection. Calls for expert 14 testimony. Foundation. 15 A There were two standards. Initially, 16 there was a single standard of TPH concentrations in 17 what is called the TCLP test, or Toxicity 18 Characteristic Leaching Procedure test of less than a 19 thousand milligrams per liter. 20 Then, from the documents I have read, 21 after the cleanup had been conducted for a while, a 22 second standard was added of 5,000 ppm or milligrams 23 per kilogram of TPH in soil. 24 Q (BY MR. SMYSER) If we look back at the 25 graph we looked at previously, and using that</p>	180	<p>1 change the tape. 2 THE DEPONENT: Is it okay if we take a 3 short break? 4 MR. SMYSER: Sure, of course. 5 THE DEPONENT: Okay. 6 THE VIDEOGRAPHER: We're off the record at 7 2:21. 8 (Recess taken from 2:21 p.m. to 9 2:32 p.m.) 10 THE VIDEOGRAPHER: Back on the record, 11 starting disk five at 2:32. 12 MR. SELEY: Before you move on to your 13 next question, I would like to put on the record 14 something we discussed at the break. And I'm -- 15 we've been going about four hours on this slide 16 presentation. And I don't see any relevance to this 17 testimony at all to count 9. 18 I'm going to object to all this testimony 19 as irrelevant to count 9. And I don't see why we're 20 spending so much time going through this. But that's 21 my objection and I want to object to all the 22 testimony that is provided on this slide 23 presentation, with the exception of the personal 24 observations that Mr. Beltman testified about. 25 Q (BY MR. SMYSER) When we took our break,</p>
179	<p>1 standard of 5,000 ppm TPH by which Texaco measured 2 whether or not it cleaned up its pits, can you 3 indicate roughly, maybe you can even draw on the 4 graph, roughly where that 5,000 mark would be and 5 what the number of wells would exceed that cleanup 6 standard? 7 MR. SELEY: Objection. This is completely 8 improper testimony. There is no foundation that 9 those standards apply to any of these samples taken, 10 to any of the pits that are represented on this graph 11 at all. 12 And there is no indication that these are 13 composite samples as appropriate under the standards 14 of the remedial action plan that Texaco implemented. 15 So this is a -- this is an improper question. 16 Q (BY MR. SMYSER) You can answer. 17 A I don't think I can show on there where 18 the 5,000 level is because this is a logarithmic 19 scale. And I can't -- it's somewhere between the 20 thousand here and the 10,000 here, but where exactly 21 it falls, I don't think I can draw on that. I can't 22 eyeball logarithmic scales very well. 23 Q Fair enough, I can't either. 24 THE VIDEOGRAPHER: I'm sorry. 25 MR. SMYSER: Tape? Sorry, we have got to</p>	181	<p>1 we were looking at this slide that had the graph on 2 it. This is a slide, if you recall, we had the 3 logarithmic issue with. Do you know whether or not 4 the bar graphs here, each one of which represents an 5 individual sample site, whether those sample sites 6 were wells that were operated by Texaco, by 7 Petroecuador, or by both? 8 MR. SELEY: Objection to the extent it 9 calls for expert testimony. 10 A This graph is showing data from all the 11 sites sampled during judicial inspections and 12 Mr. Cabrera's sampling and it's a mix, both sites 13 operated by Texaco only and Texaco, then 14 Petroecuador. 15 Q (BY MR. SMYSER) Okay. And does it 16 indicate that an overwhelming majority of the sites 17 sampled -- well, tell me, does an overwhelming 18 majority of the sites sampled exceed 10,000 parts per 19 million in the soil? 20 MR. SELEY: Objection. 21 Q (BY MR. SMYSER) -- of TPH in the soil? 22 MR. SELEY: Sorry. Objection calls for 23 expert testimony. Calls for speculation. Lacks 24 foundation. 25 A Yes, much more than 50 percent of sites</p>

182	<p>1 have TPH above 10,000 parts per milligram. I would</p> <p>2 call that an overwhelming majority.</p> <p>3 MR. SELEY: Move to strike.</p> <p>4 Q (BY MR. SMYSER) Okay. Let's move back to</p> <p>5 the slide that we were on before.</p> <p>6 A Okay.</p> <p>7 Q The last point you have on the slide is</p> <p>8 poor confirmatory sampling. Can you explain that for</p> <p>9 us, please?</p> <p>10 MR. SELEY: Objection. Calls for expert</p> <p>11 testimony.</p> <p>12 A The point I was trying to make here is</p> <p>13 that, again, just at the pits where Texaco did</p> <p>14 something, the 16 percent of the total. Although,</p> <p>15 when they did this sampling at the time of cleanup,</p> <p>16 they got results that allowed them to declare that</p> <p>17 they were finished and clean, we know from looking at</p> <p>18 samples collected during the judicial inspection that</p> <p>19 at some of these sites they essentially missed</p> <p>20 contamination when they sampled.</p> <p>21 When they did their confirmatory sampling,</p> <p>22 we can see in the judicial inspection data that some</p> <p>23 of these sites still have high concentrations of TPH.</p> <p>24 MR. SELEY: Move to strike.</p> <p>25 Q (BY MR. SMYSER) And it's your</p>	184	<p>1 comparison show?</p> <p>2 MR. SELEY: Objection. Calls for expert</p> <p>3 testimony. Calls for speculation. Lacks foundation.</p> <p>4 A This table is summarizing the TPH</p> <p>5 contamination at the sites as a percent of the sites</p> <p>6 that have TPH greater than either 100 milligrams per</p> <p>7 kilogram or a thousand milligrams per kilogram. And</p> <p>8 there's essentially no difference of whether a site</p> <p>9 was remediated by Texaco or not when you compare the</p> <p>10 data against those two numbers.</p> <p>11 MR. SELEY: Move to strike.</p> <p>12 Q (BY MR. SMYSER) What does that indicate</p> <p>13 to you about the efficacy of the remediation by</p> <p>14 Texaco with respect to the elimination of TPH in</p> <p>15 soil?</p> <p>16 MR. SELEY: Objection. Calls for expert</p> <p>17 testimony. Leading. Calls for speculation. Lacks</p> <p>18 foundation.</p> <p>19 A That tells me that the Texpet remediation</p> <p>20 or Texaco remediation done in the mid-1990s did not</p> <p>21 remove TPH from those sites. There is still TPH</p> <p>22 present in the soil.</p> <p>23 MR. SELEY: Move to strike.</p> <p>24 Q (BY MR. SMYSER) Was that your opinion at</p> <p>25 the time?</p>
183	<p>1 understanding that the judicial inspections, that the</p> <p>2 data from the judicial inspections, was part of the</p> <p>3 record of the case?</p> <p>4 A Yes.</p> <p>5 Q Let's go to the next slide, please. This</p> <p>6 is called TPH in soil, which is a reprise of another</p> <p>7 title on an earlier slide, but I have a suspicion</p> <p>8 that you have a separate intent with this slide.</p> <p>9 What is the intent behind this slide?</p> <p>10 MR. SELEY: Objection to the extent it</p> <p>11 calls for expert testimony. The document speaks for</p> <p>12 itself.</p> <p>13 A My intent when I put this slide together</p> <p>14 was to summarize the TPH in soil data in now a</p> <p>15 slightly different way, to evaluate the TPH in soil</p> <p>16 data, based on whether sites were remediated by</p> <p>17 Texaco, that is the 16 percent at those sites where</p> <p>18 something happened at 16 percent of the pits, versus</p> <p>19 sites that were not -- where no remediation was</p> <p>20 conducted by Texaco in the 1990s.</p> <p>21 The question here is, by summarizing the</p> <p>22 data this way, do we see any difference? Do we see</p> <p>23 sites that were remediated as cleaner or not compared</p> <p>24 to those that were not?</p> <p>25 Q (BY MR. SMYSER) And what did your</p>	185	<p>1 A Yes.</p> <p>2 MR. SELEY: Same objections.</p> <p>3 Q (BY MR. SMYSER) Now, let's look at the</p> <p>4 next slide. What is the title of this slide?</p> <p>5 A The title is table 1, Texpet cleanup pits</p> <p>6 with TPH concentrations greater than 5,000 ppm.</p> <p>7 Q What does that mean?</p> <p>8 MR. SELEY: Objection. Lacks foundation.</p> <p>9 A What that means, when I put this table</p> <p>10 together, I was showing data from pits that were</p> <p>11 sampled during the trial at some point and focused</p> <p>12 only on those 16 percent of the total pits where</p> <p>13 Texaco did some sort of remediation activity.</p> <p>14 So we're now -- no, I'm sorry, I take that</p> <p>15 back. That's not correct.</p> <p>16 Okay. Okay. I'm sorry. So the Texpet</p> <p>17 cleanup pits phrase at the top, what that's referring</p> <p>18 to is that every pit in this table listed was a pit</p> <p>19 that was identified in the remedial action plan as</p> <p>20 being within the scope of Texaco's cleanup. Some of</p> <p>21 those pits they did do cleanup activities, some they</p> <p>22 did not. But they were all within what was called</p> <p>23 the scope of the cleanup.</p> <p>24 Q Whose remedial action plan are we</p> <p>25 referring to?</p>

186	<p>1 MR. SELEY: I'm sorry. I didn't hear</p> <p>2 that?</p> <p>3 Q (BY MR. SMYSER) Whose remedial action</p> <p>4 plan are we referring to? In your previous answer</p> <p>5 you said it was a pit that was identified in a</p> <p>6 remedial action plan as being within the scope of</p> <p>7 Texaco's cleanup. So I'm just curious as to whose</p> <p>8 remedial action plan you're referring to?</p> <p>9 A What I recall is that this came from the</p> <p>10 Woodward-Clyde report, a Texaco-Chevron contractor.</p> <p>11 MR. SMYSER: Okay. Do you have the</p> <p>12 Woodward-Clyde report.</p> <p>13 (Exhibit 2 marked.)</p> <p>14 Q (BY MR. SMYSER) Let me hand you what has</p> <p>15 been marked as Exhibit 2 and ask if you can identify</p> <p>16 that for us.</p> <p>17 MR. GREEN: You don't have an extra copy,</p> <p>18 for me, Counsel, do you?</p> <p>19 MR. SMYSER: I don't right now. I'm</p> <p>20 sorry.</p> <p>21 MR. GREEN: Is there something else I can</p> <p>22 use?</p> <p>23 MR. SMYSER: Here, you can use this one.</p> <p>24 MR. GREEN: No, no -- I mean, I certainly</p> <p>25 don't want to carry it home.</p>	188	<p>1 Q Yes, I asked about the remedial action</p> <p>2 plan, that's correct.</p> <p>3 A Okay. I don't think -- I don't think of</p> <p>4 this as the remedial action plan. This is a report.</p> <p>5 But I don't know if the data that we talked about as</p> <p>6 to whether or not a site was within the scope of the</p> <p>7 plan is also contained in this report. It may be.</p> <p>8 They may have a table in here about what sites were</p> <p>9 in the scope and what were not.</p> <p>10 Q Okay. What role, if anything -- if any,</p> <p>11 did the Woodward-Clyde report play in your</p> <p>12 preparation of the slide we were discussing regarding</p> <p>13 Texpet cleanup of the TPH concentrations greater than</p> <p>14 5,000 parts per million?</p> <p>15 A I don't recall. I don't recall what, if</p> <p>16 anything, in that table came from this report.</p> <p>17 Q Okay. This Exhibit 2 has a fair amount of</p> <p>18 handwriting on it in various places through this. Do</p> <p>19 you know whose handwriting that is, by any chance?</p> <p>20 A I see handwriting on the back side of the</p> <p>21 cover page on that letter. I don't recognize that</p> <p>22 handwriting. I see handwriting on page BII, and that</p> <p>23 looks to me like Ann Maest's handwriting.</p> <p>24 Q Who is Ann Maest?</p> <p>25 A She is a managing scientist at Stratus</p>
187	<p>1 A This is a report by Woodward-Clyde that</p> <p>2 they prepared after the Texaco cleanup was conducted,</p> <p>3 and it's a report about that cleanup.</p> <p>4 Q (BY MR. SMYSER) Did you review that</p> <p>5 report in connection with your work on the Lago Agrio</p> <p>6 litigation and your work in preparing your slide</p> <p>7 presentation that we've been discussing?</p> <p>8 A Yes, I did review this report.</p> <p>9 Q Did you rely on it?</p> <p>10 MR. SELEY: Objection. Vague.</p> <p>11 A I --</p> <p>12 Q (BY MR. SMYSER) Did you rely on the data</p> <p>13 contained within it in the course of doing your work</p> <p>14 in the Lago Agrio litigation?</p> <p>15 MR. SELEY: Same objection.</p> <p>16 A Yes, I did rely on these. I did look at</p> <p>17 these data, I did rely on these data.</p> <p>18 Q (BY MR. SMYSER) And when we were talking</p> <p>19 earlier, a second ago, about the slide and you</p> <p>20 referenced that the Woodward-Clyde report was part of</p> <p>21 what comprised the data on that slide, is it this</p> <p>22 report that you were referring to?</p> <p>23 A I don't know. I don't remember. I</p> <p>24 thought what we were referring to is the remedial</p> <p>25 action plan.</p>	189	<p>1 Consulting who worked on this project with me.</p> <p>2 Q Okay.</p> <p>3 A On the next page, the first page of the</p> <p>4 executive summary, I don't recognize that</p> <p>5 handwriting. Page ES 2, I don't recognize that.</p> <p>6 Q Okay. Well, I'll stop you there.</p> <p>7 A Okay.</p> <p>8 Q I don't want to go through the entire</p> <p>9 document page by page to determine whose handwriting</p> <p>10 is there, but I appreciate that. Of what</p> <p>11 significance was the Woodward-Clyde report to you?</p> <p>12 MR. SELEY: Objection. Vague.</p> <p>13 A This report is what I relied on to</p> <p>14 understand what Texaco did in their cleanup, in terms</p> <p>15 of both the activities of the cleanup and the data</p> <p>16 that they collected, all after the cleanup.</p> <p>17 So this is essentially a report post</p> <p>18 cleanup about what they did and what they measured.</p> <p>19 Q (BY MR. SMYSER) And what did you conclude</p> <p>20 after reading this report about the efficacy and the</p> <p>21 completeness of the cleanup done by Texaco?</p> <p>22 MR. SELEY: Objection. Calls for expert</p> <p>23 testimony. Calls for speculation. Lacks foundation</p> <p>24 and leading.</p> <p>25 A I don't remember. I don't remember if I</p>

190	<p>1 made any conclusions based on this document alone.</p> <p>2 Q (BY MR. SMYSER) Fair enough. Let's go</p> <p>3 back to the slide, if we might. And you were in the</p> <p>4 process of explaining to us what this slide showed.</p> <p>5 And I think the logic behind the selection of the</p> <p>6 field names, the wells as listed here, could you do</p> <p>7 that for us?</p> <p>8 MR. SELEY: Objection. Calls for</p> <p>9 speculation. Vague. Calls for expert testimony, I</p> <p>10 think.</p> <p>11 A Sure. Maybe it would help to just go</p> <p>12 column by column.</p> <p>13 Q (BY MR. SMYSER) Sure.</p> <p>14 MR. SELEY: Same objection.</p> <p>15 A What we're showing here are on the</p> <p>16 farthest left, are the names of the fields, the</p> <p>17 different oil fields within the concession. And then</p> <p>18 next is the well name and number. So it's what field</p> <p>19 that well is located in and then the specific number</p> <p>20 for that well within the field.</p> <p>21 Then pit number, at each well site pits</p> <p>22 were numbered starting with pit number 1. I don't</p> <p>23 know, I can't recall whose pit numbering this refers</p> <p>24 to. It probably refers to the pit numbering assigned</p> <p>25 to the pits by Woodward-Clyde, since this is getting</p>	192	<p>1 designation for each pit, whether no further action</p> <p>2 was required, in which case they were essentially</p> <p>3 done and didn't need to touch the pit, or whether if</p> <p>4 it's no in this column, that means that something was</p> <p>5 done at that pit to conduct a cleanup. And this was</p> <p>6 a designation assigned by Texaco as they proceeded</p> <p>7 with the cleanup process.</p> <p>8 MR. SELEY: Move to strike.</p> <p>9 Q (BY MR. SMYSER) And what does the</p> <p>10 remediation complete column indicate?</p> <p>11 MR. SELEY: Same objections.</p> <p>12 A That's a term that, again, comes from the</p> <p>13 cleanup documents. And it's indicating that where</p> <p>14 it's a yes, remediation complete, that means that</p> <p>15 it's a site where no further action was not required</p> <p>16 or to reverse the double negative, further action was</p> <p>17 required and that they did complete that further</p> <p>18 action, that remediation, yes.</p> <p>19 Where it's no under that column, what that</p> <p>20 means is that every one of those is a site where no</p> <p>21 further action was completed, so there was no -- I'm</p> <p>22 sorry, no further action was required, so there was</p> <p>23 no remediation completed at that pit.</p> <p>24 Q (BY MR. SMYSER) Let me ask you, my copy</p> <p>25 of this document does not indicate the legend for</p>
191	<p>1 back to the remediation. But I do recall that</p> <p>2 different parties assigned different numbering</p> <p>3 systems. But this is probably Woodward-Clyde's</p> <p>4 numbering system.</p> <p>5 In RAP refers again to the remedial action</p> <p>6 plan. We can see there is yes all the way down here.</p> <p>7 That means every one of the pits that's listed here</p> <p>8 was within the scope of the cleanup, was identified</p> <p>9 in the cleanup contract as being a site where Texaco</p> <p>10 had cleanup responsibility.</p> <p>11 Q (BY MR. SMYSER) What does the no further</p> <p>12 action column mean?</p> <p>13 A The no further action --</p> <p>14 MR. SELEY: Objection to the extent it</p> <p>15 calls for expert testimony. Speculation. Lacks</p> <p>16 foundation.</p> <p>17 Q (BY MR. SMYSER) I don't want you to</p> <p>18 speculate what the column no further action, what</p> <p>19 purpose it served on your slide, okay. Go ahead.</p> <p>20 MR. SELEY: Same objections. Lacks</p> <p>21 foundation.</p> <p>22 A The no further action is a designation</p> <p>23 assigned to pits in one of the documents describing</p> <p>24 the cleanup. It could have been the remedial action</p> <p>25 plan, although I don't recall. But there was a</p>	193	<p>1 footnote A, B and C under those three columns of --</p> <p>2 in the remedial action plan, no further action and</p> <p>3 remediation complete. I don't know whether your</p> <p>4 column does or whether you have a memory as to what</p> <p>5 those refer to. Could you help me with that?</p> <p>6 A My copy does not have that at the bottom.</p> <p>7 I think when I prepared this slide, I copied this</p> <p>8 table from another document that I had prepared, and</p> <p>9 I don't recall what those footnotes --</p> <p>10 Q Okay.</p> <p>11 A -- refer to.</p> <p>12 Q And what about the next column? It says</p> <p>13 maximum TPH (ppm).</p> <p>14 MR. SELEY: Same objections.</p> <p>15 A That column lists TPH concentrations in</p> <p>16 ppm for each of the pits. By maximum, that would</p> <p>17 mean the highest TPH concentration measured at that</p> <p>18 pit.</p> <p>19 Q (BY MR. SMYSER) Okay. And then we have a</p> <p>20 column called source for maximum TPH. And what is</p> <p>21 the purpose of the data listed under that column?</p> <p>22 MR. SELEY: Same objections.</p> <p>23 A This column is identifying whether the</p> <p>24 maximum TPH value just to the left comes from</p> <p>25 either -- in this case Examen Percial is the court</p>

194	<p>1 expert work of Mr. Cabrera, whether it comes from</p> <p>2 Texaco, which is actually Chevron's experts in the</p> <p>3 judicial inspections, or Demandantes, which means</p> <p>4 sampling by the plaintiffs' experts in the judicial</p> <p>5 inspections.</p> <p>6 Q (BY MR. SMYSER) Okay. And the well</p> <p>7 operated by column, the last column?</p> <p>8 MR. SELEY: Same objections.</p> <p>9 A That indicates whether the well was</p> <p>10 operated only by Texaco, in which case it says just</p> <p>11 Texaco, or whether the well was operated by Texaco</p> <p>12 and then taken over by Petroecuador, in which case it</p> <p>13 says Texaco-Petroecuador.</p> <p>14 Q (BY MR. SMYSER) Okay. I would like to</p> <p>15 look at three examples from this table that show the</p> <p>16 source for maximum TPH as being from Texaco and the</p> <p>17 well operated by Texaco. I think you'll see there</p> <p>18 are three of those.</p> <p>19 A Yes, I see them.</p> <p>20 Q Okay. And I think they cover Sacha 57,</p> <p>21 Sacha 94, pit 1, and Sacha 94, pit 2; is that</p> <p>22 correct?</p> <p>23 A That's what I see, too.</p> <p>24 Q And what do those three examples show with</p> <p>25 respect to whether or not the maximum TPH exceeds the</p>	196	<p>1 A As far as I know.</p> <p>2 MR. SELEY: Objection. Calls for</p> <p>3 speculation.</p> <p>4 A As far as I know, yes.</p> <p>5 Q (BY MR. SMYSER) Now, the next series of</p> <p>6 slides involves the Cabrera report. I'm going to</p> <p>7 skip over those because of what I told you earlier.</p> <p>8 The judge said he didn't use the Cabrera report in</p> <p>9 his sentencia. And there are three slides at the end</p> <p>10 that seem to deal with cancer deaths.</p> <p>11 If you would start with the cancer death</p> <p>12 slides, what is the purpose of that slide?</p> <p>13 MR. SELEY: Objection. Calls for expert</p> <p>14 testimony.</p> <p>15 A This one?</p> <p>16 Q (BY MR. SMYSER) Yeah.</p> <p>17 A This slide is describing the calculation</p> <p>18 of the dollar value associated with what are called</p> <p>19 excess cancer deaths that is reported in the Cabrera</p> <p>20 report.</p> <p>21 Q I believe the second bullet point</p> <p>22 indicates that it's also from the literature?</p> <p>23 MR. SELEY: Objection. Leading.</p> <p>24 A Yeah, I don't understand exactly that</p> <p>25 second bullet point.</p>
195	<p>1 5,000 parts per million limit set by Texaco itself?</p> <p>2 MR. SELEY: Objection. Calls for expert</p> <p>3 testimony. Calls for speculation. Misstates facts.</p> <p>4 Incomplete hypothetical.</p> <p>5 A In all three of those examples that you're</p> <p>6 highlighting, the maximum TPH in a sample is greater</p> <p>7 than 5,000 parts per million.</p> <p>8 Q (BY MR. SMYSER) And that evidence of the</p> <p>9 TPH concentration greater than 5,000 parts per</p> <p>10 million is from Texaco itself?</p> <p>11 MR. SELEY: Objection. Same objections.</p> <p>12 A Well, to -- to be clear, I think the</p> <p>13 column that's labeled source for maximum TPH,</p> <p>14 although it says Texaco, Chevron would probably be</p> <p>15 more accurate. These were Chevron's experts doing</p> <p>16 the judicial inspection.</p> <p>17 Q (BY MR. SMYSER) And this is evidence that</p> <p>18 Chevron took and is in the record in this case?</p> <p>19 MR. SELEY: Same objections.</p> <p>20 A I can't say that those data are in the</p> <p>21 record. I'm not sure what is in the record and what</p> <p>22 isn't, but they would be in the Chevron judicial</p> <p>23 inspection expert reports.</p> <p>24 Q (BY MR. SMYSER) Okay. To your knowledge,</p> <p>25 judicial inspection reports are in the record?</p>	197	<p>1 Q (BY MR. SMYSER) Okay.</p> <p>2 A I guess -- I'm sorry.</p> <p>3 Q Go ahead.</p> <p>4 A What the second bullet point is</p> <p>5 highlighting is where -- where I looked for estimates</p> <p>6 of the excess cancer deaths, which would be the</p> <p>7 number of deaths that are caused by cancer in people</p> <p>8 in the region that, absent oil exposure, would not</p> <p>9 have happened.</p> <p>10 And I looked at two sources for that, the</p> <p>11 epidemiological studies in the literature and a</p> <p>12 survey in the Cabrera report.</p> <p>13 MR. SELEY: Objection. Move to strike.</p> <p>14 Q (BY MR. SMYSER) The third bullet point</p> <p>15 there indicates value per statistical life from --</p> <p>16 and what is USEPA?</p> <p>17 A That would be United States Environmental</p> <p>18 Protection Agency.</p> <p>19 Q And what is that table or standard or</p> <p>20 statistical value from the United States</p> <p>21 Environmental Protection Agency?</p> <p>22 MR. SELEY: Objection. Calls for expert</p> <p>23 testimony, and calls for speculation.</p> <p>24 A My understanding is that USEPA has adopted</p> <p>25 a dollar value for what is called statistical life,</p>

198	<p>1 and they use that dollar value in cost benefit 2 analyses of regulations. 3 For example, if a regulation is going to 4 save X number of people from dying early, it's a way 5 to put a dollar value on the benefits of that 6 particular regulation. 7 Q Do you recall what that value was? 8 MR. SELEY: Object. Objection. Calls for 9 expert testimony. Calls for speculation. Lacks 10 foundation. 11 A I think the last I knew what it was, it 12 was just over \$8 million. 13 Q (BY MR. SMYSER) Per life? 14 A Per life, yes. 15 MR. SELEY: Same objections. 16 Q (BY MR. SMYSER) Let's go to the next 17 slide. It's entitled, number of cancer cases per 18 family. What families do you have reference to 19 there? 20 MR. SELEY: Objection. Calls for expert 21 testimony. Calls for speculation. Lacks foundation. 22 A These are data that come from annex L of 23 the Cabrera report. And that annex describes a 24 survey of people who live in the area of the 25 concession. And the survey, amongst the pieces of</p>	200	<p>1 distance family lives from oil well. Can you explain 2 those two values for us? 3 MR. SELEY: Objection to the extent it 4 calls for expert testimony. Otherwise the document 5 speaks for itself. 6 A Yes. I was taking the data from annex L 7 of the Cabrera report. And in the surveys of people 8 they asked many different kinds of questions. One 9 question was about incidences of cancer in their 10 family. Another question was about how close the 11 family lived from an oil well. 12 And what is shown here are the data 13 showing that the closer a family lives to an oil 14 well, the higher the chance that that family had a 15 case of cancer reported by the survey respondent. 16 MR. SELEY: Move to strike. 17 Q (BY MR. SMYSER) And what are the numbers 18 at the bottom of the graph? 19 MR. SELEY: Same objections. 20 A The numbers represent how far away from a 21 well the family lived. It ranges from, there are 22 four different categories. Less than 250 meters from 23 the well, 250 to 500 meters, 500 meters to two 24 kilometers or over two kilometers from a well. 25 Q And do you have any information as to what</p>
199	<p>1 information they collected in that survey, was the 2 number of cancer cases in the family of the person 3 being surveyed. 4 I don't recall specifically how they 5 defined family, whether it was immediate family or 6 extended family, but it refers to the family of the 7 person being surveyed. 8 Q And the families -- 9 MR. SELEY: Move to strike. 10 Q (BY MR. SMYSER) And the families at issue 11 are the families that were living in areas around the 12 Texaco oil wells or production stations? 13 MR. SELEY: Objection. Leading. Calls 14 for speculation. Lacks foundation. Calls for expert 15 testimony. 16 A What I recall from annex L is that the 17 survey was only of people who lived in the area of 18 the concession. I don't recall if they surveyed any 19 people outside of the concession, but the focus was 20 within the concession. 21 Q (BY MR. SMYSER) Okay. And what does the 22 graph show us? I see on the one axis we've got 23 percent of families? 24 A Yes. 25 Q And then on the other axis we've got</p>	201	<p>1 kind of cancers were being measured here? 2 MR. SELEY: Objection. Calls for expert 3 testimony. Calls for speculation. Lacks foundation. 4 A I don't recall what is -- what is reported 5 in annex L about the kinds of cancers. I may have 6 information on that if I were to look at annex L, but 7 I don't remember as I sit here right now. 8 Q (BY MR. SMYSER) And in summation, what 9 does the data show about the prevalence of cancer 10 among families who live closer as opposed to farther 11 away from the wells? 12 MR. SELEY: Objection. Calls for expert 13 testimony, calls for speculation, lacks foundation. 14 A These data, they're grouped into how many 15 cases of cancer the respondent identified in the 16 family. So if we look at, there are -- the instances 17 where the respondent said there was one cancer case 18 in their family, for the families that live within 19 250 meters of an oil well, 20 percent of those 20 families had cancer; whereas, as you go out to over 21 two kilometers away, the percent drops to a little 22 over 10 percent. 23 The change is even more dramatic if you 24 look at the two or more cases. So these are cases -- 25 these are instances in which the person being</p>

202	204
<p>1 surveyed said in their family they have two or more 2 cases of cancer.</p> <p>3 For those who lived closest to the wells 4 it's a little under 10 percent of those families; 5 whereas moving out farther away from the wells, it 6 drops to, oh, it looks like perhaps 2 percent in that 7 range, roughly, maybe 1 percent of the families of 8 the survey respondents who lived over 2 kilometers, 9 reported two or more cases of cancer in their family.</p> <p>10 MR. SELEY: Move to strike.</p> <p>11 Q (BY MR. SMYSER) Did you form an opinion 12 at the time as to whether or not the Texaco petroleum 13 activities played any role in these increased cancer 14 rates among the families --</p> <p>15 MR. SELEY: Objection. Leading. Calls 16 for expert testimony.</p> <p>17 Q (BY MR. SMYSER) -- as a statistical 18 matter?</p> <p>19 MR. SELEY: I apologize. Objection. 20 Leading. Calls for expert testimony.</p> <p>21 A No, not as a statistical. I didn't do a 22 statistical analysis of these data, nor did I do a 23 statistical analysis of a potential link between 24 these data and contamination from Texaco.</p> <p>25 Q (BY MR. SMYSER) Let's go to the next</p>	<p>1 100,000 people as a function of age in women, and 2 whether women are exposed, they live in exposed areas 3 or non-exposed, as they classified them in the study. 4 Regardless of where they were living, their cancer 5 rate increases as they get older, which we would 6 expect. But the rate increases more in the women 7 they identified as exposed to oil, living in exposed 8 areas.</p> <p>9 So that the cancer rate shown on this plot 10 is higher for women who live in the oil-exposed areas 11 versus those living in the non-exposed areas.</p> <p>12 Q (BY MR. SMYSER) All right. Did you have 13 an opinion at the time as to whether or not that rise 14 of cancer rates among women in oil-exposed areas was 15 tied to Texaco's actions producing oil in those areas 16 at the time?</p> <p>17 MR. SELEY: Objection. Calls for expert 18 testimony. Calls for speculation. No foundation.</p> <p>19 A I recall after reading through the paper 20 and some companion papers by the same authors, that I 21 found their data and their story, if you will, about 22 higher cancer rates within exposed people to be 23 compelling.</p> <p>24 I don't think they specifically identified 25 the Texaco operations as the cause. I don't think I</p>
203	205
<p>1 slide, if we can. This slide, again, is called 2 cancer rates in women. And I assume this has 3 reference to women in the concession, but maybe I'm 4 wrong.</p> <p>5 Could you tell us what category of women 6 you're referring to in that slide?</p> <p>7 MR. SELEY: Objection. Lacks foundation. 8 Calls for speculation.</p> <p>9 A This is a graph that I copied out of a 10 paper in the literature written by Hurtig and San 11 Sebastian, published in 1992.</p> <p>12 What I recall from that study is they 13 looked at data in the cancer cases in the cancer 14 registry in Quito. So it's the national records of 15 cancer cases, cancer record database. And they 16 compared the rates of cancer between people living 17 out in the rainforest area, who lived in what they 18 called areas exposed to oil and areas not exposed to 19 oil.</p> <p>20 Q And what does the graph indicate with 21 respect to cancer incidence rates among women who 22 were exposed and non-exposed?</p> <p>23 MR. SELEY: Objection. Calls for expert 24 testimony. Calls for speculation. Lacks foundation.</p> <p>25 A The graph shows the cancer rate per</p>	<p>1 thought about or analyzed Texaco operations versus, 2 say, Petroecuador operations as the cause. But I did 3 find their conclusions about the higher cancer rates 4 in people living in the oil, area of oil operations, 5 to be higher than people living outside those areas, 6 to be compelling.</p> <p>7 Q (BY MR. SMYSER) Leaving aside for the 8 moment the issue of whether oil operations by 9 Petroecuador post 1990 may have contributed to any 10 rise in the cancer rates, did you form an opinion as 11 to whether or not the Texaco oil operations played 12 any role in the increase in the cancer rates among 13 women who were exposed to oil?</p> <p>14 MR. SELEY: Objection. Calls for expert 15 testimony. Calls for speculation. Lacks foundation.</p> <p>16 A Yes, I did.</p> <p>17 Q (BY MR. SMYSER) And what was your 18 opinion?</p> <p>19 MR. SELEY: Same objections.</p> <p>20 A My opinion was that it was likely that the 21 exposure to the carcinogens caused by Texpet 22 operations at least contributed to the higher rates 23 of cancer.</p> <p>24 Q (BY MR. SMYSER) Let's turn to the next 25 slide.</p>

206	<p>1 MR. SELEY: Move to strike.</p> <p>2 Q (BY MR. SMYSER) This is the last slide in</p> <p>3 this presentation. And you pose a question,</p> <p>4 Chevron's positions re: scientific evidence? What</p> <p>5 did you mean by that question?</p> <p>6 MR. SELEY: Objection to the question.</p> <p>7 Calls for expert testimony.</p> <p>8 A When I put this slide together, the</p> <p>9 purpose was to point out what I thought Chevron's</p> <p>10 positions might be when it comes to all the</p> <p>11 scientific evidence that I had just gone through in</p> <p>12 this presentation.</p> <p>13 That Chevron is likely to have responses</p> <p>14 and these are my thoughts about what those responses</p> <p>15 might be.</p> <p>16 MR. SELEY: Move to strike as speculation.</p> <p>17 Q (BY MR. SMYSER) Okay. So this was your</p> <p>18 list of arguments that you understood Chevron might</p> <p>19 make in an effort to counteract the data and evidence</p> <p>20 that we've been examining for several hours today?</p> <p>21 MR. SELEY: Objection. Calls for</p> <p>22 speculation.</p> <p>23 A Yes.</p> <p>24 MR. SELEY: And leading.</p> <p>25 Q (BY MR. SMYSER) I would like to turn back</p>	208	<p>1 Q And in your slide you have reference to</p> <p>2 this. Is this the report you have reference to as</p> <p>3 HBT AGRA report in your slide?</p> <p>4 A Yes.</p> <p>5 Q Okay.</p> <p>6 (Exhibit 4 marked.)</p> <p>7 Q (BY MR. SMYSER) Let me hand you Exhibit 4</p> <p>8 and ask you if you can identify that for us.</p> <p>9 MR. SELEY: Craig, can I ask you, did we</p> <p>10 provide these documents to you, Exhibit 3 and</p> <p>11 Exhibit 4?</p> <p>12 MR. MURPHY: I don't know the answer to</p> <p>13 that.</p> <p>14 MR. SELEY: Okay. I don't recognize some</p> <p>15 of the multiple Bates stamps on here.</p> <p>16 MR. SMYSER: It says CA 1069438 and I</p> <p>17 don't know what CA, which identifier that is.</p> <p>18 MR. SELEY: Yeah.</p> <p>19 MR. SMYSER: Sorry.</p> <p>20 A This is a report by Fugro-McClelland,</p> <p>21 which is the results of their audit of Texaco's field</p> <p>22 operations. Again, I have looked at a report at</p> <p>23 least similar to this. I don't remember the Bates</p> <p>24 stamping and the confidential at the bottom. And</p> <p>25 this is what is referenced in the table in the</p>
207	<p>1 to the slide called investigations conducted in the</p> <p>2 Napo concession prior to trial?</p> <p>3 MR. SELEY: Do you know roughly what page</p> <p>4 that is?</p> <p>5 MR. SMYSER: It's about two-thirds of the</p> <p>6 way through.</p> <p>7 MR. MURPHY: 173.</p> <p>8 MR. SELEY: Sorry, 173.</p> <p>9 Q (BY MR. SMYSER) Are you with me?</p> <p>10 A Yes.</p> <p>11 Q We touched on this briefly about reports</p> <p>12 that you relied on that were from investigations</p> <p>13 conducted in the Napo concession prior to the trial.</p> <p>14 Do you remember that?</p> <p>15 A Yes.</p> <p>16 (Exhibit 3 marked.)</p> <p>17 Q (BY MR. SMYSER) And I would like to hand</p> <p>18 you Exhibit 3 and ask if you can identify this for</p> <p>19 us.</p> <p>20 A This looks to be the audit report prepared</p> <p>21 by HBT AGRA for Texaco, although I haven't looked at</p> <p>22 every single page. I've seen a copy of this that</p> <p>23 hasn't had the Bates stamping and confidential</p> <p>24 stamping at the bottom, but it's at least similar to</p> <p>25 this.</p>	209	<p>1 presentation we were talking about.</p> <p>2 Q (BY MR. SMYSER) And you read these</p> <p>3 reports and relied upon them in the course of your</p> <p>4 work on the Lago Agrio litigation?</p> <p>5 MR. SELEY: Objection. Leading.</p> <p>6 Q (BY MR. SMYSER) Tell me whether or not</p> <p>7 you reviewed them.</p> <p>8 A Assuming these are the same that I have,</p> <p>9 because these are not the exact same copies, yes, I</p> <p>10 did review them, I did rely on them.</p> <p>11 Q Okay. What can you tell us about</p> <p>12 Fugro-McClelland, as to who they are? Can you tell</p> <p>13 us anything briefly about them?</p> <p>14 A I don't know much about them. I think</p> <p>15 they are a consulting company, but beyond that I</p> <p>16 can't really say.</p> <p>17 Q How about HBT AGRA?</p> <p>18 A I don't know much about them either.</p> <p>19 Q Okay.</p> <p>20 (Exhibit 5 marked.)</p> <p>21 Q (BY MR. SMYSER) Let me hand you what has</p> <p>22 been marked as Exhibit 5 and ask if you can identify</p> <p>23 Exhibit 5 for us.</p> <p>24 A This is an e-mail that I sent to Steven</p> <p>25 Donziger that has attached to it two separate</p>

210	<p>1 documents. One is -- the first document is a series</p> <p>2 of statements or quotes, if you will, that we pulled</p> <p>3 from the Fugro-McClelland document. And the second</p> <p>4 document is the same for the HBT AGRA audit report.</p> <p>5 Q And you prepared those documents?</p> <p>6 A I prepared the document on the HBT AGRA</p> <p>7 report. My recollection is that Ann Maest prepared</p> <p>8 the document on Fugro-McClelland.</p> <p>9 Q Did you approve the document that you sent</p> <p>10 Mr. Donziger prepared by Ms. Maest on the</p> <p>11 Fugro-McClelland Inc. audit?</p> <p>12 MR. SELEY: Objection. Vague.</p> <p>13 A I'm sorry, was the word approve?</p> <p>14 Q (BY MR. SMYSER) Yeah, accept, authorize,</p> <p>15 are you sending it on as something that you authorize</p> <p>16 as part of the work, or is it a rogue document?</p> <p>17 A No, I reviewed this before I sent it, I</p> <p>18 recall that. And I knew what it was when I was</p> <p>19 sending it.</p> <p>20 Q Okay. Let me review a little bit of these</p> <p>21 documents with you, if I might. Let's turn to page 1</p> <p>22 of the first document, which is the audit prepared by</p> <p>23 Fugro-McClelland with notes thereof. And as I</p> <p>24 understand it, in each one of these boxes is a quote</p> <p>25 from the report.</p>	212	<p>1 statements in these audit reports that, in our</p> <p>2 opinion, we thought might be helpful to show what</p> <p>3 Texaco's own audits showed about their operations and</p> <p>4 the contamination that it caused.</p> <p>5 Q And was it an effort to distill down some</p> <p>6 of the length of these several hundred page reports</p> <p>7 and to provide the segments of the report that you or</p> <p>8 Ms. Maest thought would be significant to the issues</p> <p>9 presented by the arguments surrounding Texaco's</p> <p>10 alleged contamination of the environment?</p> <p>11 MR. SELEY: Objection. Misstates the</p> <p>12 testimony. Vague. Leading.</p> <p>13 A Yes, it was an effort. We -- I know I</p> <p>14 read the entire HBT AGRA document, and I think Ann</p> <p>15 read the entire Fugro document and it did take some</p> <p>16 time.</p> <p>17 MR. SELEY: I apologize, I didn't mean to</p> <p>18 interrupt for a second. We've lost our live feed</p> <p>19 here. It looks like there was some -- there was an</p> <p>20 objection missed. Thank you.</p> <p>21 MR. SMYSER: We're back.</p> <p>22 MR. SELEY: It looks like we're back on,</p> <p>23 thanks.</p> <p>24 MR. SMYSER: Okay.</p> <p>25 Q (BY MR. SMYSER) Let's go to the second</p>
211	<p>1 MR. SELEY: Objection. Leading.</p> <p>2 Q (BY MR. SMYSER) Is that what your</p> <p>3 understanding is?</p> <p>4 A That is my understanding, yes.</p> <p>5 Q Okay. Would you read the second box under</p> <p>6 E-1 there for us, please.</p> <p>7 MR. SELEY: Objection. I mean, there's</p> <p>8 better evidence than this. It's Exhibit 3 and</p> <p>9 Exhibit 4, rather than Exhibit 5, which seems to be</p> <p>10 some effort to reproduce material from the actual</p> <p>11 reports. I think it's more proper if you want him to</p> <p>12 look at the reports and describe the reports that he</p> <p>13 actually look and describe the reports.</p> <p>14 Q (BY MR. SMYSER) Can you read that for me,</p> <p>15 please?</p> <p>16 A The audit, excuse me, the audit identified</p> <p>17 hydrocarbon contamination requiring mediation at all</p> <p>18 production facilities and a majority of the drill</p> <p>19 sites.</p> <p>20 MR. SELEY: Objection. Hearsay. The</p> <p>21 document -- or quotes taken out of context.</p> <p>22 Q (BY MR. SMYSER) What was the purpose of</p> <p>23 selecting quotes from the longer report to send to</p> <p>24 Mr. Donziger?</p> <p>25 A We did this to highlight for Mr. Donziger</p>	213	<p>1 box under E-2. The first sentence provides that all</p> <p>2 produced water from the production facilities</p> <p>3 eventually discharged to creeks and streams except</p> <p>4 for one facility which used a percolation pit.</p> <p>5 Can you tell us what the one facility was</p> <p>6 that used a percolation pit?</p> <p>7 A No, I can't.</p> <p>8 Q Okay.</p> <p>9 A I don't remember. And I don't think that</p> <p>10 I ever knew because I didn't read this document.</p> <p>11 Q Okay. Was the rest of this audit sentence</p> <p>12 that I just read, that produced water was eventually</p> <p>13 discharged to creeks and streams consistent or not</p> <p>14 consistent with what you learned in the course of</p> <p>15 your work on this matter?</p> <p>16 MR. SELEY: Objection. Calls for</p> <p>17 speculation. Language taken out of context.</p> <p>18 A Yes, that's consistent with my</p> <p>19 understanding of how Texaco operated.</p> <p>20 Q (BY MR. SMYSER) The last sentence of that</p> <p>21 same box reads, facility modifications will be</p> <p>22 required at those facilities to bring the discharges</p> <p>23 into compliance with the current regulatory</p> <p>24 standards.</p> <p>25 Did you learn whether or not Texaco in the</p>

214	<p>1 course of its remediation ever brought any of the</p> <p>2 facilities into compliance with the current</p> <p>3 regulatory standards?</p> <p>4 A That sentence I think is referring to the</p> <p>5 production facilities when it says at those</p> <p>6 facilities. And I don't recall Texaco doing anything</p> <p>7 at the production facilities as part of its cleanup</p> <p>8 to improve their operations. So no, as far as I</p> <p>9 know, they didn't do anything like that.</p> <p>10 Q If you look at 5-1 and 5-4, the last</p> <p>11 sentence of that provides that environmental impact</p> <p>12 studies were not prepared for exploratory drilling</p> <p>13 conducted in the consortium after 1976.</p> <p>14 Were you or were you not aware that the</p> <p>15 environmental law, decree number 374, 1976, required</p> <p>16 environmental impact studies?</p> <p>17 MR. SELEY: Objection. Object to this</p> <p>18 whole line of questions as to relevance and the</p> <p>19 objection that it's taken out of context.</p> <p>20 A When I reviewed this, I certainly would</p> <p>21 have been aware of it, but I don't remember sitting</p> <p>22 here right now.</p> <p>23 Q (BY MR. SMYSER) What are environmental</p> <p>24 impact studies, incidentally?</p> <p>25 A My understanding is that they are</p>	216	<p>1 though, that it retained the crude oil, from my</p> <p>2 observations. Because I have seen instances of oil</p> <p>3 contamination where those pipes come out of the pits</p> <p>4 and downstream of there.</p> <p>5 So from my observations it has not</p> <p>6 retained the crude oil.</p> <p>7 MR. SELEY: Move to strike as speculative,</p> <p>8 lacks foundation.</p> <p>9 Q (BY MR. SMYSER) Based on your own</p> <p>10 personal observation, you saw that on occasions,</p> <p>11 crude oil would flow from the pit?</p> <p>12 MR. SELEY: Objection. Vague.</p> <p>13 A Yeah, I don't think I could say I've seen</p> <p>14 the crude oil flowing while it's flowing, but I've</p> <p>15 seen the crude oil downstream of the pit, downstream</p> <p>16 of the pipe, that could only have come from the pipe.</p> <p>17 MR. SELEY: Objection. Or sorry, move to</p> <p>18 strike.</p> <p>19 Q (BY MR. SMYSER) Let's turn the page and</p> <p>20 go to 6-25, the box immediately above 6-26. It says,</p> <p>21 in general spills of hydrocarbons and chemicals were</p> <p>22 not cleaned up. Instead, they were covered with a</p> <p>23 sand.</p> <p>24 Is that consistent with what you saw about</p> <p>25 how or learned about how oil spills were handled by</p>
215	<p>1 predictions of how certain operations or facilities</p> <p>2 will impact the environment. And in some cases it</p> <p>3 can also be predictions of how the action might</p> <p>4 impact people through impacts to the environment.</p> <p>5 Q Okay.</p> <p>6 MR. SELEY: Move to strike. Lacks</p> <p>7 foundation. Speculative.</p> <p>8 Q (BY MR. SMYSER) Would you turn over to</p> <p>9 6-10, please, the next page. The first box there</p> <p>10 says, some of the pits contain siphons which allowed</p> <p>11 collected water to be released while retaining the</p> <p>12 crude oil. Contamination beyond the pits was</p> <p>13 observed at some areas. The contamination usually</p> <p>14 occurred as a result of pit overflow, burn failure or</p> <p>15 releases through the siphon.</p> <p>16 Did your own personal observations confirm</p> <p>17 the accuracy of that statement?</p> <p>18 MR. SELEY: Objection. Lacks any</p> <p>19 foundation whatsoever.</p> <p>20 A The siphons that are being referred to</p> <p>21 must be the pipes, what I called the pipes earlier,</p> <p>22 that were built into the side of the pits. And, yes,</p> <p>23 siphons, as it says here, which allowed collected</p> <p>24 water to be released while retaining the crude oil, I</p> <p>25 did see those at many pits. It's not consistent,</p>	217	<p>1 Texaco?</p> <p>2 MR. SELEY: Objection. Calls for</p> <p>3 speculation. Lacks foundation.</p> <p>4 A Yes, this is consistent with what I</p> <p>5 learned about how Texaco dealt with spills.</p> <p>6 Q (BY MR. SMYSER) And was that an</p> <p>7 acceptable standard on how to deal with spills at</p> <p>8 that time?</p> <p>9 MR. SELEY: Objection. Calls for expert</p> <p>10 testimony. Lacks foundation. Calls for speculation.</p> <p>11 A I don't know. Again, it's a</p> <p>12 spill-by-spill basis. I think I testified earlier</p> <p>13 that it was standard to have some sort of spill</p> <p>14 response program in place, which Texaco did not. But</p> <p>15 on a spill-by-spill basis, I don't think I could</p> <p>16 answer that.</p> <p>17 Q (BY MR. SMYSER) Okay. Let's turn the</p> <p>18 page and go to 6-33. The second box says,</p> <p>19 hydrocarbon contamination was identified at a</p> <p>20 majority of the well sites. According to the 1974</p> <p>21 Ecuadorian law and regulation of the discharge of</p> <p>22 pollutants that are dangerous to the environment and</p> <p>23 human health is prohibited. Based on regulatory</p> <p>24 requirements contamination which still exhibits the</p> <p>25 ability to release dangerous pollutants to the</p>

218	<p>1 environment must be remediated.</p> <p>2 And my question is, based on your</p> <p>3 examination of the sites that were -- contained</p> <p>4 hydrocarbon contamination, were they remediated</p> <p>5 pursuant to Ecuadorian law?</p> <p>6 MR. SELEY: Objection. Calls for</p> <p>7 speculation. Lacks foundation. Calls for expert</p> <p>8 testimony.</p> <p>9 A I observed -- I observed petroleum</p> <p>10 contamination just with my eyes at sites that Texaco</p> <p>11 reported to be cleaned up, and where they conducted</p> <p>12 cleanup activities. So I know just from visual</p> <p>13 observation that there's still oil at sites where</p> <p>14 Texaco did cleanup.</p> <p>15 Whether, as it says here, the pollutants</p> <p>16 are dangerous to the environment and human health,</p> <p>17 I -- for one, that's not something that can be</p> <p>18 observed visually. And secondly, I don't recall that</p> <p>19 I've looked at the data specifically from that</p> <p>20 perspective, other than what we've talked about</p> <p>21 before with the produced water.</p> <p>22 Q (BY MR. SMYSER) And your data on produced</p> <p>23 water would indicate that a satisfactory remediation</p> <p>24 was not achieved in terms of eliminating the TPH</p> <p>25 contamination from the environment?</p>	220	<p>1 So I think it was -- if your question was,</p> <p>2 is it specific to where the oil wells were located,</p> <p>3 it was more than just the oil wells themselves.</p> <p>4 Q A broader assessment?</p> <p>5 A Yes, a broader assessment.</p> <p>6 Q 2.4, you indicate and quote that the</p> <p>7 orient is located within the Amazon basin which is</p> <p>8 known for its biological diversity.</p> <p>9 What area are you referring to or does the</p> <p>10 quote refer to as the orient or oriente?</p> <p>11 MR. SELEY: Objection. Calls for</p> <p>12 speculation. Lacks foundation.</p> <p>13 A This quote is what HBT AGRA wrote. My</p> <p>14 understanding of the oriente is it's another way to</p> <p>15 refer to this part of Ecuador. It's the eastern part</p> <p>16 of Ecuador out in the -- it's past the Andes out in</p> <p>17 the Amazon basin, and it's sometimes referred to as</p> <p>18 the oriente in this area. So this is the area where</p> <p>19 the concession is located.</p> <p>20 Q (BY MR. SMYSER) You next have a quote the</p> <p>21 Amazon is characterized by its richness in diverse</p> <p>22 fauna and flora. Many wildlife species are endemic</p> <p>23 to the Ecuador or the Amazon basin.</p> <p>24 What role, if any, did that observation</p> <p>25 play in your decision to use the 1,000 parts per</p>
219	<p>1 MR. SELEY: Objection. Misstates</p> <p>2 testimony. Misstates facts. Calls for expert</p> <p>3 testimony.</p> <p>4 A If the TPH data -- or I'm sorry, the data</p> <p>5 on production water certainly showed that Texaco is</p> <p>6 discharging into the environment water that had high</p> <p>7 salt content, high TPH content. I don't know of any</p> <p>8 efforts to remediate the contamination that resulted</p> <p>9 from that discharge.</p> <p>10 MR. SELEY: Move to strike.</p> <p>11 Q (BY MR. SMYSER) Let me direct your</p> <p>12 attention to your -- the start of your quotes from</p> <p>13 the HBT 1993 AGRA report. You first note that they</p> <p>14 call the document an environmental assessment of the</p> <p>15 consortium oil fields.</p> <p>16 Was it your understanding that the</p> <p>17 evaluation included oil wells and production</p> <p>18 stations, or was the evaluation only limited to the</p> <p>19 oil field where the oil was being produced, if that</p> <p>20 distinction makes sense?</p> <p>21 A I don't remember now what the whole scope</p> <p>22 was. I remember they report on wells. They report</p> <p>23 on conditions at production sites, production</p> <p>24 facilities. They also reported on conditions at</p> <p>25 camps where workers were housed.</p>	221	<p>1 million TPH standard established by Ecuadorian law,</p> <p>2 which I believe you previously testified to only</p> <p>3 applied in areas where there was a delicate</p> <p>4 environment?</p> <p>5 MR. SELEY: Objection. Misstates</p> <p>6 testimony. Lacks foundation. Calls for speculation.</p> <p>7 A The instances where I compared data from</p> <p>8 the area with the 1,000 parts per million standard,</p> <p>9 it was not my decision to use the 1,000 parts per</p> <p>10 million standard. I was told by plaintiff attorneys</p> <p>11 that that's the standard that's appropriate.</p> <p>12 I think I testified also that my</p> <p>13 understanding was, that's the standard that's</p> <p>14 appropriate because it's the standard that applies to</p> <p>15 sensitive ecosystems or some similar translation.</p> <p>16 And a quote like this points out that this</p> <p>17 is in an area of high species diversity, very high</p> <p>18 ecological value.</p> <p>19 THE REPORTER: Is or is not?</p> <p>20 THE DEPONENT: I'm sorry?</p> <p>21 THE REPORTER: That this isn't an area or</p> <p>22 is an area?</p> <p>23 THE DEPONENT: Is in an area. Sorry.</p> <p>24 THE REPORTER: Thank you.</p> <p>25 Q (BY MR. SMYSER) Do you think, regardless</p>

222	<p>1 of what the plaintiffs' lawyers told you, do you 2 think application of a thousand parts per million 3 standard was appropriate in evaluating the TPH 4 concentration level? 5 MR. SELEY: Objection. Calls for expert 6 testimony. Calls for a legal conclusion. 7 A I think what's appropriate or not 8 appropriate depends on what the objective is. And my 9 understanding from the plaintiff attorneys is that 10 the thousand parts per million is appropriate as a 11 legal standard, but I don't have a conclusion about 12 that. 13 Q (BY MR. SMYSER) Okay. As an 14 environmental scientist, if you were asked to pick a 15 standard to determine the TPH concentrations in this 16 area, how would you go about selecting the standard? 17 MR. SELEY: Objection. Calls for 18 speculation. Incomplete hypothetical. 19 A I would first think, or get information 20 about why I'm comparing the contamination to a 21 standard. Am I doing it to find out if there is any 22 contamination at all? Am I doing it to find out if 23 there is a contamination above a legal standard? Am 24 I doing it to find out, such as in the Superfund 25 program, what are the 400 or so worst sites anywhere</p>	224	<p>1 correct? 2 A That's correct. 3 Q If you'll look down the page to page 4.2 4 it says, decree number 1459 passed in September 27, 5 1971, colon. 6 And before I read, the information 7 regarding decree number 1459 passed in September 8 1971, was that a piece of information you obtained 9 independently or was that a piece of information 10 which you obtained from the HBT AGRA report? 11 MR. SELEY: Objection. Vague and 12 compound. 13 A I don't remember. It's not in a quote in 14 this document, so I don't remember if I'm just making 15 it easier to get to the quote that I then provide or 16 whether I knew separately somehow that that's where 17 the quote applies to. 18 I would guess that that decree is 19 described in the HBT AGRA document, but I don't 20 recall. 21 Q Okay. And the quote provides the operator 22 was required to adopt all necessary measures for the 23 protection of the flora, fauna, and other natural 24 resources and to prevent pollution of the water, the 25 atmosphere, and the land.</p>
223	<p>1 that we have enough money to clean up? So it would 2 depend on why I'm doing it. 3 I don't think I could answer that question 4 without the why and the why would be the first thing 5 I would think about. 6 Q (BY MR. SMYSER) Okay. If the why were to 7 determine whether or not the contamination complied 8 with an appropriate legal standard for the level of 9 contamination in that area, how would you go about 10 selecting a standard? 11 MR. SELEY: Objection. Calls for 12 speculation. Incomplete hypothetical. 13 A It depends on what my familiarity would be 14 with the legal standards and the legal -- the 15 regulatory standards. 16 In the U.S., for example, I think I have 17 enough experience that I think I would, depending on 18 the contamination situation, I think I would know 19 which standards apply. In a place like Ecuador, I 20 would have to get that information from attorneys as 21 to what standards apply. 22 Q (BY MR. SMYSER) Okay. And in this 23 instance, the attorneys you relied on to give you 24 that standard were the plaintiffs' attorneys who 25 represented the people who lived in the area; is that</p>	225	<p>1 Do you see that quote? 2 A Yes, I do. 3 Q Based on your work, background, training 4 and experience, did you form an opinion as to whether 5 the operator, Texaco, adopted all the necessary 6 measures for the protection of the flora, fauna and 7 other natural resources? 8 MR. SELEY: Objection. Calls for expert 9 testimony. Calls for speculation. Lacks foundation. 10 No relevance. 11 A Yes, I did. 12 Q (BY MR. SMYSER) And what was your 13 opinion? 14 MR. SELEY: Same objections. 15 A My opinion is that Texaco as the operator 16 did not adopt all necessary measures. 17 Q (BY MR. SMYSER) For the protection of the 18 flora, fauna and other natural resources? 19 MR. SELEY: Objection. 20 A Correct, and to prevent the pollution of 21 the water, the atmosphere, and the land. 22 MR. SELEY: Objection. Leading. Move to 23 strike. 24 Q (BY MR. SMYSER) That was going to be my 25 next question. Did you form an opinion as to whether</p>

226	<p>1 or not Texaco as operator adopted all necessary 2 measures to prevent pollution of the water, 3 atmosphere and the land? 4 MR. SELEY: Objection. Leading. Calls 5 for expert testimony. Lacks foundation and 6 speculation. 7 A Yes, I did have an opinion about that. 8 And my opinion was that they did not adopt all 9 necessary measures to prevent pollution of the water, 10 the atmosphere and the land. 11 MR. SELEY: Move to strike. 12 Q (BY MR. SMYSER) Let's go to the next 13 page, if we could, 5-10. The second entry for 5-10 14 is regarding the sewage at Lago Agrio. Do you see 15 that? 16 A Yes. 17 Q And it says, prior to this, 1992, sewage 18 was released on land or stored in pits that emptied 19 into the local river, end quote. 20 What sewage does that have reference to, 21 do you know? 22 MR. SELEY: Objection. Calls for 23 speculation. 24 A I don't remember. I would have to go back 25 to the report and look. I do recall that the report</p>	228	<p>1 facilities. No testing is conducted on the 2 wastewater prior to disposal into the river, except 3 at Shushufindi where wastewater bioacid testing has 4 been conducted since 1990. 5 Is that consistent with what you learned 6 during your work and examination of these camps and 7 the streams? 8 MR. SELEY: Objection. Lacks foundation. 9 Misstates facts. Calls for speculation. Calls for 10 expert testimony. 11 A Yes, this is consistent both with what I 12 learned about how waste was handled, in that it was 13 not treated and dumped directly into streams and 14 rivers. And also I don't recall seeing any data 15 other than the data we've talked about already today 16 on the nature of that waste, the toxicity or its 17 suitability for discharge. I don't recall there 18 being any monitoring or testing. 19 Q Just to be clear -- 20 MR. SELEY: Move to strike. 21 Q (BY MR. SMYSER) I'm sorry. Just to be 22 clear, the waste we're talking about here, we are not 23 just talking about oil field waste. We're talking 24 about waste from the laundry, car wash and sewage; is 25 that right?</p>
227	<p>1 had information about the camps or the places where 2 workers stayed, but I don't remember if this is 3 referring to that or not. 4 Q (BY MR. SMYSER) Let's go down to 5.10, 5 the large block of type there. It says that waste 6 water streams from the stations and camps included 7 produced water, sewage, wash water from the laundry, 8 and car wash, runoff from the process area, surface 9 drains, and floor drains. 10 Does that help refresh your recollection 11 as to whether or not we're talking about wastewater 12 from the stations and camps owned by Texaco? 13 MR. SELEY: Objection. Lacks foundation. 14 A Certainly in that sentence we are talking 15 about that. I would have to go back to the sequence 16 of paragraphs and sentences to see -- 17 Q (BY MR. SMYSER) Okay. 18 A -- if that's referring to that in the 19 prior sentence we were talking about. 20 Q Okay. Let's continue with that paragraph. 21 These streams are either diverted back to the 22 produced water system or collected in a system of 23 ditches throughout the camp which discharge into 24 nearby streams. There are no evaporation ponds or 25 other wastewater impoundment areas at the main</p>	229	<p>1 MR. SELEY: Objection. Lacks foundation. 2 Calls for speculation. 3 A That's right. That's included in this 4 list of the waste sources. 5 Q (BY MR. SMYSER) And as an environmental 6 scientist, would it have been appropriate -- did you 7 form an opinion as to whether it would be appropriate 8 for a company like Texaco operating a plant to 9 discharge its sewage, wash water from its laundry and 10 car wash into the drains and streams of Ecuador? 11 MR. SELEY: Objection. Calls for expert 12 testimony. Leading. Lacks foundation. Calls for -- 13 well, let's leave it at that. 14 A I don't -- I don't have an opinion about 15 raw, untreated discharge from a car wash or a 16 laundry. I don't know enough about what that looks 17 like and the chemicals. 18 But raw sewage, it is my opinion that 19 dumping raw sewage into rivers and streams is not 20 environmentally responsible. 21 MR. SELEY: Move to strike as improper 22 expert testimony. 23 Q (BY MR. SMYSER) If you would look at 24 5-11, it states no groundwater monitoring program was 25 in place prior to 1990 at any of the stations. Was</p>

230	<p>1 that consistent with what you found during your work</p> <p>2 on this project?</p> <p>3 MR. SELEY: Objection. Calls for expert</p> <p>4 testimony.</p> <p>5 A Yes. I don't recall seeing any</p> <p>6 groundwater monitoring data or evidence of a program</p> <p>7 in place while Texaco was operating.</p> <p>8 Q (BY MR. SMYSER) If you would turn to the</p> <p>9 next page. Look at the top of that page. It's</p> <p>10 titled re sewage at Auca station --</p> <p>11 A I'm sorry to interrupt. Can we take</p> <p>12 another little break?</p> <p>13 Q Sure, of course.</p> <p>14 THE VIDEOGRAPHER: We're off the record at</p> <p>15 3:46.</p> <p>16 (Recess taken from 3:46 p.m. to 3:58 p.m.)</p> <p>17 THE VIDEOGRAPHER: Back on the record at</p> <p>18 3:58. Starting disk five.</p> <p>19 Q (BY MR. SMYSER) Mr. Beltman, when we took</p> <p>20 a break, I was directing your attention to the</p> <p>21 memorandum you prepared for Mr. Donziger regarding</p> <p>22 your selection of quotes from the, I believe it was</p> <p>23 one of the two reports, the ABT (sic) AGRA report.</p> <p>24 Do you remember that?</p> <p>25 A I do. HBT.</p>	232	<p>1 MR. SELEY: Move to strike.</p> <p>2 Q (BY MR. SMYSER) On 5-11, the next</p> <p>3 paragraph you say, numerous creeks -- you don't say,</p> <p>4 pardon me, the report says and you've selected this</p> <p>5 quote. Numerous creeks and rivers flow through the</p> <p>6 concession area, produced water, runoff from vehicle</p> <p>7 and equipment washing, surface runoff from releases</p> <p>8 from stations, as well as outflow from pits diverted</p> <p>9 or discharged into these streams.</p> <p>10 Was that consistent with what you saw</p> <p>11 yourself when you were working on this project?</p> <p>12 MR. SELEY: Objection. Lacks foundation.</p> <p>13 A Yes, I saw numerous creeks and rivers as</p> <p>14 this quote describes, and I also saw instances</p> <p>15 where -- where outflow from pits through the pipes</p> <p>16 that we talked about before was discharged into the</p> <p>17 streams.</p> <p>18 I can't say that I've seen personally --</p> <p>19 well, I haven't seen produced water discharged into</p> <p>20 streams of course because Petroecuador reinjects all</p> <p>21 of it.</p> <p>22 I can't say I've seen runoff from vehicle</p> <p>23 and equipment washing either. I have seen the</p> <p>24 surface runoff from the Sacha Central station that we</p> <p>25 talked about earlier.</p>
231	<p>1 Q Sorry, HBT.</p> <p>2 A To be accurate, yes.</p> <p>3 Q And we were talking about the quote you</p> <p>4 had at 5-10 re the sewage at the Auca station at the</p> <p>5 top right there. And the quote says: At Auca the</p> <p>6 sewage stream is designed so that it flows into a</p> <p>7 cistern and then is released into the jungle. The</p> <p>8 sewage effluent is not analyzed before release.</p> <p>9 Based on your experience as an</p> <p>10 environmental scientist, was that an appropriate way</p> <p>11 to handle sewage from the Auca station?</p> <p>12 MR. SELEY: Objection. Calls for expert</p> <p>13 testimony. Calls for speculation. Lacks foundation</p> <p>14 and no relevance to count 9. And if you don't mind,</p> <p>15 I have a continuing objection on relevance.</p> <p>16 A Yes, I did.</p> <p>17 Q (BY MR. SMYSER) And what was your opinion</p> <p>18 about that?</p> <p>19 A My opinion, I can't say my opinion is</p> <p>20 specific to the practices at the Auca station, but</p> <p>21 after reading through all this audit report, I do</p> <p>22 recall the opinion that the way that Texaco handled</p> <p>23 their sewage at all of their stations was</p> <p>24 environmentally irresponsible. It would cause</p> <p>25 pollution in the environment.</p>	233	<p>1 MR. SELEY: Move to strike.</p> <p>2 Q (BY MR. SMYSER) If you'll look down that</p> <p>3 page to 5-14, the third quote on 5-14, where it says,</p> <p>4 prior to 1990 (drilling) muds containing lithium</p> <p>5 sulfur and other heavy metals were disposed of in</p> <p>6 sump pits.</p> <p>7 What are sump pits?</p> <p>8 MR. SELEY: Objection. Calls for</p> <p>9 speculation.</p> <p>10 A I don't know what they're referring to</p> <p>11 specifically here, but my understanding from how the</p> <p>12 oil field is operated is that that's what I was</p> <p>13 calling pits earlier. So a sump pit or a pit is</p> <p>14 these pits at the well sites where Texaco dumped</p> <p>15 things like drilling muds.</p> <p>16 MR. SELEY: Move to strike everything</p> <p>17 after I don't know.</p> <p>18 Q (BY MR. SMYSER) And what is lithium</p> <p>19 sulfur, if you know?</p> <p>20 A I know what lithium is. It's an element.</p> <p>21 I know what sulfur is. It's an element. I'm not</p> <p>22 familiar with lithium sulfur together.</p> <p>23 Q Okay. Let's go down to the last quote, if</p> <p>24 we could. 5-15. The quote selected says, in all</p> <p>25 cases activities likely to cause contamination were</p>

234	<p>1 identified from pre 1990 operational practices. 2 Therefore the consortium field oil operations prior 3 to 1990 were potentially not in compliance with 4 Ecuadorian law and regulations. 5 My question to you is, did you form an 6 opinion at the time, during your work on this matter, 7 as to whether or not the operations prior to 1990 8 when Texaco was the operator were potentially not in 9 compliance with Ecuadorian law and regulations? 10 MR. SELEY: Objection. Calls for expert 11 testimony. Calls for legal conclusions. Calls for 12 speculation. Lacks foundation. 13 A I don't recall specifically forming 14 opinions on the topic of compliance with the 15 regulations. That wasn't one of the things that I 16 was asked to evaluate. Certainly the information I 17 looked at and the opinions I developed had to do with 18 Texaco's operations being substandard and causing 19 environmental pollution. But compliance with laws 20 and regulations within Ecuador at the time, I didn't 21 focus on that. 22 Q (BY MR. SMYSER) Okay. Let's go to the 23 next page of your memo, the next three or four pages. 24 And they seem to be a facsimile reproduction of 25 perhaps sections from the report.</p>	236	<p>1 if they're summaries, it would have been an easy way 2 through cut and paste to highlight for Mr. Donziger 3 some of the key findings of the audit. 4 Q Okay. Let's look at the first page there. 5 And I'm not sure quite what it says. It says 6 wastewater, waterways water discharges, local river 7 used for, what is that word? 8 A Potable. 9 Q Oh, potable, and processed water. What 10 does that mean? 11 MR. SELEY: Objection. Calls for 12 speculation. 13 A Potable means -- potable water means -- 14 potable water is drinking water. So that means the 15 local river is used for drinking water. 16 MR. SELEY: Move to strike. 17 Q (BY MR. SMYSER) And if you look down the 18 page, it says surface runoff discharged into local 19 streams. Would those be the same streams that were 20 used for potable water? 21 MR. SELEY: Objection. Calls for 22 speculation. No foundation. 23 A I don't know what they're referring to 24 specifically here, but from what I have seen, the 25 streams that run along and near processing facilities</p>
235	<p>1 Do you remember that? 2 A I do remember this. What these actually 3 are -- this is a Word document we're looking at, a 4 hard copy of a Word document. And I had an 5 electronic version of the HBT AGRA report, Adobe 6 Acrobat, so I just highlighted some pieces and copied 7 them directly into the Word document. So these are 8 cut and paste straight out of the HBT AGRA report. 9 Q Okay. So instead of quoting, you just cut 10 and pasted? 11 A Correct. 12 Q And sent that to Mr. Donziger? 13 A Correct. 14 Q And I take it the underlining is your 15 underlining? 16 MR. SELEY: Objection. Leading. 17 A I don't think it is. I don't think it is 18 because again this was an electronic version. And I 19 wouldn't have been drawing outlines like that on an 20 electronic version. 21 Q (BY MR. SMYSER) Okay. Why did you select 22 these pages to send to Mr. Donziger, if you remember? 23 A I don't recall exactly. What these tables 24 appear to be are summaries of audit findings on 25 different practices during Texaco's operations. So</p>	237	<p>1 and well sites where contamination from say surface 2 runoff would end up are the same streams that people 3 bathe in and wash their clothes in and swim in. And 4 from what I've read, they also, some people use those 5 as their drinking water sources. 6 MR. SELEY: Move to strike everything 7 after I don't know. 8 Q (BY MR. SMYSER) And it indicates that the 9 sewage was not tested or treated prior to disposal 10 into a river? 11 MR. SELEY: Objection. Calls for 12 speculation. 13 A That's right, that's what it says. 14 Q (BY MR. SMYSER) And was that consistent 15 with what you learned as you worked on the project? 16 MR. SELEY: Objection. Calls for 17 speculation. Lacks foundation. Calls for expert 18 testimony. 19 A Yes, that's consistent. 20 Q (BY MR. SMYSER) It also indicates no 21 testing prior to discharge of wastewater. Was that 22 consistent with what you learned when you worked on 23 the project? 24 MR. SELEY: Same objections. 25 A Yes, I didn't find any evidence that</p>

238	240
<p>1 Texaco did any testing of any discharges. 2 Q (BY MR. SMYSER) Let's go over several 3 pages to well site management. The top of it says 4 well site management on the left-hand side. 5 MR. SPALDING: Got it. 6 Q (BY MR. SMYSER) And if you would go about 7 one-third of the way down, do you see the quote 8 there, it says workover and completion fluids 9 disposed of in on-site pits produced water disposed 10 of into the jungle rivers. 11 Is that consistent with what you, 12 yourself, saw when you were working on the project? 13 MR. SELEY: Objection. Calls for 14 speculation. Lacks foundation. No personal 15 knowledge. 16 A Again, I didn't see the produced water 17 itself being disposed of into any jungle rivers since 18 Petroecuador now reinjects. I did see in the past 19 where Texaco did dispose of produced water into 20 jungle rivers. So I didn't see any evidence of this 21 practice while it was happening, but I saw the 22 evidence of the facilities when it did happen. 23 MR. SELEY: Move to strike. 24 Q (BY MR. SMYSER) Did you see evidence that 25 that practice had happened in the past?</p>	<p>1 next sentence, and I realize this also may be 2 something that you didn't personally observe, but 3 I'll ask you anyway. It says spraying of lease roads 4 with crude oil, no tank bottoms. 5 What does that mean? 6 MR. SELEY: Objection. Calls for 7 speculation. Lacks foundation. 8 A What that means to me is that they're 9 summarizing the practice we talked about earlier 10 where Texaco sprayed dirt roads with crude oil to 11 keep the dust down in part. I've also seen documents 12 saying it was a way to get rid of excess or waste 13 oil, too. 14 MR. SELEY: Move to strike. 15 Q (BY MR. SMYSER) And if Texaco engaged in 16 that practice, was that in accord with industry 17 standards at that time? 18 MR. SELEY: Objection. Incomplete 19 hypothetical. Calls for speculation. Calls for 20 expert testimony. Lacks foundation. And leading. 21 A I don't know. I don't think I looked at 22 that practice specifically. 23 Q (BY MR. SMYSER) Fair enough. If you look 24 down the page, it says no protection of water 25 resources. Do you see that quote?</p>
239	241
<p>1 MR. SELEY: Same objection. 2 A That's kind of a hard question to answer. 3 What I saw in person were -- were very large 4 discharge pipes at processing stations. But of 5 course I didn't see the water coming out because I 6 wasn't there in the past, but I do know from looking 7 at other information that those are the pipes where 8 the water was discharged. 9 Q Right? 10 MR. SELEY: Move to strike the last 11 clause. 12 Q (BY MR. SMYSER) And I think that's why I 13 tried to ask the question in a way that had reference 14 to the past. Did you -- did you or did you not see 15 evidence that in the past these pipes had been used 16 to discharge produced water into the streams 17 directly? 18 MR. SELEY: Same objections. Calls for 19 speculation. Lacks foundation. Calls for expert 20 testimony. 21 A Yes. All the evidence I've seen says that 22 Texaco dumped all their production water directly 23 into streams and rivers. 24 MR. SELEY: Move to strike. 25 Q (BY MR. SMYSER) If you'll look at the</p>	<p>1 A Yes. 2 Q Did you form an opinion yourself in the 3 course of your work on the project that would allow 4 you to agree or disagree with that conclusion stated 5 in this report? 6 A Yes. 7 Q And what was your opinion? 8 MR. SELEY: Objection. Calls for 9 speculation. Calls for expert testimony. 10 A My opinion is that the way that Texaco 11 operated their oil field, not only provided no 12 protection of water resources, but caused pollution 13 of water resources. 14 So it's -- I would go farther than just 15 saying no protection. There actually was pollution 16 caused by those activities. 17 MR. SELEY: Move to strike. 18 Q (BY MR. SMYSER) Let me ask you to go over 19 several pages to 6-5, the page that starts 6-5. And 20 incidentally, I take it these numbers are your effort 21 to put a signpost as to where the quote in general 22 might be found in the report? 23 A Yes, those would be the page numbers in 24 the report. 25 Q Okay. If you would look at the second</p>

242	<p>1 sentence there that says, the concession is situated</p> <p>2 in an area that was essentially undisturbed</p> <p>3 rainforest prior to the development.</p> <p>4 Is that consistent with your understanding</p> <p>5 of what the situation was in the rainforest prior to</p> <p>6 Texaco's arrival?</p> <p>7 MR. SELEY: Objection. Calls for</p> <p>8 speculation. Calls for expert testimony. Lacks</p> <p>9 foundation.</p> <p>10 A Yes, it is.</p> <p>11 Q (BY MR. SMYSER) Was that your opinion at</p> <p>12 the time?</p> <p>13 MR. SELEY: Same objections. And vague.</p> <p>14 A Well, my opinion would be whether -- I</p> <p>15 don't know if I had an independent opinion. I've</p> <p>16 seen other documentation that that was the case,</p> <p>17 but --</p> <p>18 Q (BY MR. SMYSER) Okay.</p> <p>19 A I haven't developed an independent opinion</p> <p>20 other than the things I've read.</p> <p>21 Q Okay. Well, did you have an understanding</p> <p>22 at the time you were working down there that prior to</p> <p>23 Texaco's arrival this was undisturbed rainforest?</p> <p>24 MR. SELEY: Same objections.</p> <p>25 A Mostly. I do recall some mention of some</p>	244	<p>1 note contaminants that had migrated beyond the</p> <p>2 confines of a pit when you were doing your work on</p> <p>3 this project?</p> <p>4 MR. SELEY: Objection. Calls for expert</p> <p>5 testimony. Lacks foundation. And leading.</p> <p>6 A Yes, there are data collected from, as</p> <p>7 it's worded here, beyond the confines of a pit that</p> <p>8 showed that there's contamination in those areas.</p> <p>9 Q (BY MR. SMYSER) If you would look down to</p> <p>10 6-13, the third 6-13 where it says well site spills</p> <p>11 have occurred at 158 of the 163 asset (sic) sites,</p> <p>12 what do you understand that to mean?</p> <p>13 MR. SELEY: Objection. Calls for</p> <p>14 speculation. Lacks foundation.</p> <p>15 Q (BY MR. SMYSER) I'm sorry. Excuse me.</p> <p>16 What did you understand at the time you selected this</p> <p>17 quote to send to Mr. Donziger to mean?</p> <p>18 MR. SELEY: Objection. Calls for</p> <p>19 speculation. Lacks foundation.</p> <p>20 A I see that I put a note in here after that</p> <p>21 quote and this would be my own writing that says,</p> <p>22 note, they only assessed 163 of the well and station</p> <p>23 sites but said it was a random sample. What that</p> <p>24 tells me is that I was at that time identifying this</p> <p>25 quote that as part of the audit, they audited not</p>
243	<p>1 plantations in the area. I recall they're described</p> <p>2 as being fairly small scale. Other than that, yes,</p> <p>3 my understanding was it was undisturbed.</p> <p>4 Q (BY MR. SMYSER) If you would drop down to</p> <p>5 6.12 on that page, the first one. The quote from the</p> <p>6 Texaco report, the report prepared for Texaco, I'm</p> <p>7 sorry, says: Oil field development and production</p> <p>8 activities have caused contamination of soil and</p> <p>9 water at locations throughout the concession.</p> <p>10 Contamination of soil and water was observed at well</p> <p>11 sites, production stations and along roadways, flow</p> <p>12 lines, and secondary pipelines.</p> <p>13 Could you tell us whether, based on your</p> <p>14 observation and work on this project, that statement</p> <p>15 comports with what you observed and found?</p> <p>16 MR. SELEY: Objection. Misstates facts.</p> <p>17 Calls for expert testimony. Calls for speculation.</p> <p>18 Lacks foundation. And leading.</p> <p>19 A Yes, that's consistent with the data I've</p> <p>20 seen and with my understanding and opinions.</p> <p>21 Q (BY MR. SMYSER) The next 6-13 says,</p> <p>22 spills which have migrated off the well sites and</p> <p>23 contaminants which have migrated beyond the confines</p> <p>24 of a pit have also been noted.</p> <p>25 And let me ask you, did you or did you not</p>	245	<p>1 every single one of the sites that we've talked</p> <p>2 about, that they audited 163 of those sites.</p> <p>3 And they themselves concluded that they</p> <p>4 saw spills at 158 of those sites.</p> <p>5 MR. SELEY: Move to strike.</p> <p>6 Q (BY MR. SMYSER) Let's move to 6-15 down</p> <p>7 the page, the first 6-15. A total of 126 open or</p> <p>8 closed pits contain oily waste. Oily waste is</p> <p>9 confined within 50 of the pits and was found to be</p> <p>10 migrating in 76 cases.</p> <p>11 What did that mean to you at the time?</p> <p>12 MR. SELEY: Objection. Calls for</p> <p>13 speculation. Lacks foundation. The document speaks</p> <p>14 for itself.</p> <p>15 A I don't recall what I understood it to</p> <p>16 mean at the time. I think it's pretty</p> <p>17 straightforward. It probably meant to me then</p> <p>18 similar what it means now, is that they looked at --</p> <p>19 of the pits they looked at they found 126 that had</p> <p>20 oily waste. And in some cases they described the</p> <p>21 oily waste as confined to the pits and in some cases</p> <p>22 they described it as migrating beyond the pits.</p> <p>23 MR. SELEY: Move to strike everything</p> <p>24 after I don't recall.</p> <p>25 Q (BY MR. SMYSER) Let's go over to 6-20.</p>

246	<p>1 It's the penultimate page of your memo to 2 Mr. Donziger. And I direct your attention to the 3 section you wrote, pits at stations (they audited 80 4 of them). 5 Is that your writing? 6 A Yes, that's my writing. It's not in 7 quotes, so I think that's my writing. 8 Q Right. In quotes is, oily sludge is 9 present in all of the pits, unquote. 10 Did you understand that to mean that oily 11 sludge was present in all 80 of the pits that they 12 audited? 13 MR. SELEY: Objection. Calls for 14 speculation. Lacks foundation. 15 A Yeah, that note that I wrote is 16 identifying the quotes that followed to be specific 17 to the pits at stations, as distinguished from pits 18 at well sites. 19 So pits at stations, they looked at 80 of 20 them, audited 80 of them. And it would have been my 21 understanding that all of the pits would refer to 22 those 80. 23 Q (BY MR. SMYSER) The next quote says, 24 produced water is being discharged to the environment 25 in all cases.</p>	248	<p>1 report? 2 A If it's not in quotes, then I am 3 paraphrasing or summarizing what the report is 4 saying. So here I'm saying that the report 5 determined that 41 percent of the well sites had a, 6 and the quote means, their term, high, unquote, 7 impact. 8 Q And what does high impact equal under 9 their definition in the report? 10 MR. SELEY: Objection. Calls for 11 speculation. Lacks foundation. The report speaks 12 for itself. 13 A In this -- in this passage -- I don't see 14 a starting quote. I see an end quote. So I'm not 15 sure of this -- the next two lines there, what's 16 mine, if any, and what's theirs. But what it says 17 here is that high impact is environmental damage that 18 may require extensive mitigative action or may be of 19 long-term duration before recovery. Contaminants 20 appear to have migrated out of the pit. 21 Q (BY MR. SMYSER) Well, let me ask you -- 22 MR. SELEY: Move to strike everything 23 after what's theirs. 24 Q (BY MR. SMYSER) Let me ask you, that 25 quote or that word, environmental damage that may</p>
247	<p>1 Is that consistent with what your 2 understanding was -- 3 MR. SELEY: Objection. 4 Q (BY MR. SMYSER) -- of how Texaco handled 5 produced water? 6 MR. SELEY: Objection. Calls for 7 speculation. Lacks foundation. 8 A Yes, that was consistent with my 9 understanding. 10 Q (BY MR. SMYSER) The next part is 11 contamination in soil and water below the discharge 12 pipe was noted in all cases. 13 Is that consistent with what you observed 14 at the time? 15 MR. SELEY: Objection. Leading. Calls 16 for speculation. Lacks foundation. 17 A It's consistent with my understanding. 18 It's consistent with observations I've made myself as 19 well. 20 Q (BY MR. SMYSER) If you would go down to 21 6-24, wherein you write, 41 percent of the well sites 22 were determined to have, a quote, high, unquote, 23 impact. 24 Can you explain what you meant by that? I 25 take it you were interpreting something from the</p>	249	<p>1 require extensive mitigative action or may be of 2 long-term duration before recovery, contaminants 3 appear to have migrated out of the pit, was or was 4 not consistent with what you observed and the 5 opinions you reached at the time you were working on 6 this project? 7 MR. SELEY: Objection. Calls for 8 speculation. Lacks foundation. Calls for expert 9 testimony. And leading. 10 A Yes, that is consistent with my 11 observation, certainly of long-term duration. I 12 observed oil still present at sites where operations 13 stopped decades prior. And it's consistent with my 14 understanding about requiring extensive mitigative 15 action. 16 Q (BY MR. SMYSER) Okay. 17 MR. SELEY: Move to strike. 18 Q (BY MR. SMYSER) Let's go to 6-24, which 19 is at the bottom of the page. And you have reference 20 to table 6.6, which is a summary list of liability at 21 the pits. And we have a list of liabilities that you 22 quoted, it looks like individual quotes. 23 And the list begins with liabilities 24 associated with separation pits were generally rated 25 as high. Let me ask you, did you have an opinion at</p>

250	<p>1 the time as to whether or not liabilities associated</p> <p>2 with the separation pits were generally rated as</p> <p>3 high?</p> <p>4 MR. SELEY: Objection. Calls for</p> <p>5 speculation. Calls for expert testimony. Lacks</p> <p>6 foundation.</p> <p>7 A I don't recall if I did at the time or</p> <p>8 not.</p> <p>9 Q (BY MR. SMYSER) The next quote says,</p> <p>10 widespread contamination of land below discharge.</p> <p>11 Did you have an opinion at the time as to whether or</p> <p>12 not that was accurate?</p> <p>13 MR. SELEY: Objection. Calls for</p> <p>14 speculation. Lacks foundation. Calls for expert</p> <p>15 testimony.</p> <p>16 A This, the way this particular phrase, the</p> <p>17 widespread contamination of land below discharge, I</p> <p>18 don't recall having any reason to not believe that as</p> <p>19 their conclusion or to question their audit. I don't</p> <p>20 recall having any separate basis or opinion for that</p> <p>21 statement, other than what's in the audit.</p> <p>22 Q (BY MR. SMYSER) The next observation that</p> <p>23 you quote is contamination of channel below</p> <p>24 discharge. Did you have an opinion at the time as to</p> <p>25 whether or not that was accurate?</p>	252	<p>1 Q (BY MR. SMYSER) Okay. Let's shift gears</p> <p>2 here for a second now.</p> <p>3 (Exhibit 6 marked.)</p> <p>4 Q (BY MR. SMYSER) Let me hand you what has</p> <p>5 been marked as Exhibit 6.</p> <p>6 MR. SELEY: Do we need to keep holding on</p> <p>7 to 5, or are we moving on?</p> <p>8 MR. SMYSER: I'm sorry?</p> <p>9 MR. SELEY: Are we still holding on to 5</p> <p>10 or --</p> <p>11 MR. SMYSER: No, we're done with 5.</p> <p>12 Q (BY MR. SMYSER) Can you generally</p> <p>13 identify this for us, please?</p> <p>14 A This is what I think is a portion of a</p> <p>15 report that Stratus prepared at the request of our</p> <p>16 clients, the plaintiff attorneys. And I was involved</p> <p>17 in the preparation of this report.</p> <p>18 Q You were or were not involved?</p> <p>19 A I was.</p> <p>20 Q Okay.</p> <p>21 A The copy I have, it looks like chapter 2</p> <p>22 is incomplete.</p> <p>23 Q I'll represent to you that I think there</p> <p>24 are other pages missing from this copy of the report.</p> <p>25 This is the copy we obtained from the record in</p>
251	<p>1 MR. SELEY: Objection. Calls for</p> <p>2 speculation. Lacks foundation. Calls for expert</p> <p>3 testimony.</p> <p>4 A I don't know. I would have to go -- I</p> <p>5 mean, it sounds like it's referring to a specific</p> <p>6 channel and maybe a specific discharge. I don't know</p> <p>7 if I had an opinion about if it is referring to a</p> <p>8 specific channel or discharge. I don't know if I had</p> <p>9 an opinion about that or not.</p> <p>10 Q (BY MR. SMYSER) Okay. Let me ask you,</p> <p>11 incidentally, why you quoted this list of, summary</p> <p>12 list of liabilities of pits for Mr. Donziger.</p> <p>13 A Well, in looking through this list, there</p> <p>14 is quite a few -- quite a few problems, sources of</p> <p>15 contamination that the audits identified when they</p> <p>16 summarized what they call their liability. And I</p> <p>17 highlighted these for Mr. Donziger, because, again,</p> <p>18 it points out what the audits concluded about sources</p> <p>19 of contamination into the environment from Texaco</p> <p>20 operations.</p> <p>21 Q And these were conclusions made by an</p> <p>22 auditor hired by Texaco?</p> <p>23 MR. SELEY: Objection. Misstates facts.</p> <p>24 A If I recall, that's what the report says,</p> <p>25 yes.</p>	253	<p>1 Ecuador. And let me in that regard --</p> <p>2 A Okay.</p> <p>3 Q -- let me direct you to the stamp on the</p> <p>4 front. Do you see that stamp down there?</p> <p>5 A I do.</p> <p>6 Q Can you read what it says?</p> <p>7 A It looks like H. Corte Provincial de</p> <p>8 Justicia Secretary of Presidencia Sucumbios.</p> <p>9 Q Right.</p> <p>10 A I'm sorry, if I could complete my prior</p> <p>11 answer.</p> <p>12 Q Oh, I'm sorry, I didn't mean to interrupt</p> <p>13 you.</p> <p>14 A I don't recognize the last three pages of</p> <p>15 what I have or four, it starts annex L 13 and</p> <p>16 something about Secretary of State and geotech's</p> <p>17 translations, I don't recognize those three pages. I</p> <p>18 don't know what that is.</p> <p>19 Q Okay. I'll represent to you, if you look</p> <p>20 at the certification on the last page, that those</p> <p>21 pages are concerning the translation of the document</p> <p>22 from English into Spanish for filing in the Court.</p> <p>23 Do you see that?</p> <p>24 A Yes.</p> <p>25 Q Does that seem reasonable to you?</p>

254	<p>1 A I'll accept your representation.</p> <p>2 Q Okay. Fair enough. And if you thumb</p> <p>3 through that, you will see that every page we have</p> <p>4 here is stamped from the Court.</p> <p>5 MR. SMYSER: Do we have a color copy of</p> <p>6 this?</p> <p>7 Q (BY MR. SMYSER) Now, the reason I gave</p> <p>8 you this copy, we have a copy, a complete copy of the</p> <p>9 report, but this is the copy that we have, at any</p> <p>10 rate, that was filed in the court in Ecuador. Are</p> <p>11 you with me?</p> <p>12 A Yes.</p> <p>13 Q And I guess one of the things we discussed</p> <p>14 earlier, here is a complete copy for your reference</p> <p>15 if you would care to look at that one. But I would</p> <p>16 prefer to direct your attention, if I might, to --</p> <p>17 for a little bit to the court copy.</p> <p>18 We discussed earlier whether or not any of</p> <p>19 Stratus' work had been filed with the Court. Do you</p> <p>20 recall that conversation?</p> <p>21 A Yes.</p> <p>22 Q And I think you can see by the marks down</p> <p>23 here that at least this document was filed with the</p> <p>24 Court?</p> <p>25 A Well, I don't know what that stamp is so I</p>	256	<p>1 to the operations as a whole.</p> <p>2 Q Fair enough.</p> <p>3 MR. SELEY: Move to strike everything</p> <p>4 after I don't recall this report.</p> <p>5 Q (BY MR. SMYSER) If you would look at the</p> <p>6 introduction. And you'll indicate that it -- well,</p> <p>7 do you see the description of Texaco's lack of</p> <p>8 environmental controls on the discharge of waste to</p> <p>9 the environment?</p> <p>10 MR. SELEY: Objection. Leading.</p> <p>11 A Sorry, which facts? Can you repeat the</p> <p>12 question, please?</p> <p>13 Q (BY MR. SMYSER) Sure. Let's look at the</p> <p>14 introduction. Would you read the introduction to</p> <p>15 yourself, please.</p> <p>16 A Okay.</p> <p>17 Q Does that refresh your recollection as to</p> <p>18 the purpose of this report?</p> <p>19 A Somewhat, yes.</p> <p>20 Q Okay. And what is your understanding of</p> <p>21 what the purpose of the report was?</p> <p>22 MR. SELEY: Objection. Calls for</p> <p>23 speculation.</p> <p>24 A The reason I said somewhat is that it</p> <p>25 doesn't refresh my recollection beyond what is</p>
255	<p>1 can't say that that means to me that it's been filed</p> <p>2 with the Court. But if you represent that, I'll</p> <p>3 accept it.</p> <p>4 Q Okay. I'll represent to you that this is</p> <p>5 a copy we obtained from the court files.</p> <p>6 A Okay. Thank you.</p> <p>7 Q Now, the report was -- what's the title of</p> <p>8 this report?</p> <p>9 A History of Contamination at Oil Well Lago</p> <p>10 Agrio 11A, Oil Well Sacha 94 and Production Station</p> <p>11 Aguatico in the Napo Concession, Ecuador.</p> <p>12 Q Okay. So this is not a report, if I'm</p> <p>13 correct, and correct me if I'm incorrect, that covers</p> <p>14 all of the Texaco wells and production stations in</p> <p>15 the Napo concession, and it says limited to, it looks</p> <p>16 like, two oil wells and one production station?</p> <p>17 A I don't recall this report, but looking at</p> <p>18 it now, it does look like there are parts of</p> <p>19 chapter 1 that apply to all of Texaco's operation.</p> <p>20 There's a map of the concession. There's a map of</p> <p>21 all the oil wells. There's an overview of</p> <p>22 Chevron-Texaco's waste management practices.</p> <p>23 After chapter 1, based on the table of</p> <p>24 contents, it is specific to these three sites. But I</p> <p>25 think chapter 1 does have, at least parts of it apply</p>	257	<p>1 written here. And what is written here is that</p> <p>2 it's -- the report is describing the results of data,</p> <p>3 the results of investigations of the environmental</p> <p>4 contamination at the three sites that are in the</p> <p>5 title. And it says these are intended to provide</p> <p>6 examples of the nature and degree of environmental</p> <p>7 contamination that occurs at the well sites and</p> <p>8 processing stations throughout the concession.</p> <p>9 MR. SELEY: Move to strike everything</p> <p>10 after beyond what is written here.</p> <p>11 Q (BY MR. SMYSER) And the results from this</p> <p>12 report focus on three sites?</p> <p>13 A Yes.</p> <p>14 MR. SELEY: Objection. Calls for</p> <p>15 speculation.</p> <p>16 Q (BY MR. SMYSER) And why were these sites</p> <p>17 selected as exemplars?</p> <p>18 MR. SELEY: Objection. Calls for</p> <p>19 speculation.</p> <p>20 A I don't recall.</p> <p>21 Q (BY MR. SMYSER) Do you recall whether or</p> <p>22 not these sites provide examples of the nature and</p> <p>23 degree of environmental contamination that occurs at</p> <p>24 the well sites and processing stations throughout the</p> <p>25 concession?</p>

258	260
<p>1 MR. SELEY: Objection. Calls for 2 speculation.</p> <p>3 A I don't recall that or not. This report 4 was written in 2007. It was fairly early on in our 5 evaluation of the data. And I don't know if I've 6 ever looked at the data from these three sites in the 7 overall context of the whole concession since then.</p> <p>8 Q (BY MR. SMYSER) I think you said earlier 9 you were involved in the preparation of this report 10 or review of it?</p> <p>11 A Yes.</p> <p>12 Q Okay. At the time you prepared it, did 13 you include information in this report that you 14 believed to be true and accurate?</p> <p>15 MR. SELEY: Objection.</p> <p>16 A Yes.</p> <p>17 Q (BY MR. SMYSER) Do you stand by this 18 report today?</p> <p>19 MR. SELEY: Objection. Calls for 20 speculation. Lacks foundation.</p> <p>21 A I would have to read through the report 22 carefully. There may be data, there may be 23 information that I'm aware of now that I wasn't aware 24 of at the time. I stand by this report as an 25 accurate presentation of data and information</p>	<p>1 MR. SELEY: Objection. The document 2 speaks for itself.</p> <p>3 A Oil exploration and production operations 4 by Chevron-Texaco have contaminated the well sites 5 and production stations with high concentrations of 6 petroleum hydrocarbons, individual chemical compounds 7 contained within crude oil, such as PAHs, metals 8 associated with oil production and salinity. The 9 full nature and extent of the contamination has not 10 been delineated at any of the three site studied. 11 Nevertheless, the available data show that waste 12 pits, multiple areas around the sites, groundwater 13 beneath the sites and wetlands and streams in the 14 vicinity of the sites are all contaminated. The data 15 also show previous efforts by Chevron-Texaco to clean 16 up the contamination have not been successful and 17 that people living in the vicinity of these sites can 18 be exposed to high concentrations of contaminants in 19 the environment.</p> <p>20 Q (BY MR. SMYSER) Let me ask you if that 21 paragraph accurately reflects the opinions, general 22 opinions, that you had at the time this report was 23 filed?</p> <p>24 MR. SELEY: Objection. Calls for 25 speculation. Calls for expert testimony. Leading.</p>
259	261
<p>1 available at that time. But whether there is 2 information, I know of or learned since that would 3 make some of this incorrect or superseded, I don't 4 know.</p> <p>5 Q (BY MR. SMYSER) Okay. Well, let me 6 phrase my question differently then, if I might. 7 Leaving apart the idea of whether subsequent data may 8 come up that would replace this data, do you stand by 9 the data in this report as being true and accurate at 10 the time the report was prepared and filed?</p> <p>11 MR. SELEY: Objection. Calls for 12 speculation. Lacks foundation. He already testified 13 he doesn't recall.</p> <p>14 A Yes, yes. I stand by this report being 15 true and accurate representation of the data as we 16 knew it at the time.</p> <p>17 MR. SELEY: Move to strike.</p> <p>18 Q (BY MR. SMYSER) Let me ask you to turn to 19 page 5 -- I'm sorry, section 5, which is at the end 20 of the report, the summary and conclusions. Would 21 you read those summary and conclusions to yourself, 22 please. Actually, when you finish reading the first 23 paragraph, would you read the second paragraph aloud 24 for us, please.</p> <p>25 A Yes.</p>	<p>1 A I think that's kind of a hard question to 2 answer. I don't recall separate from what is written 3 here what my opinions were. I don't recall in this 4 document or any other writing opinions that were 5 inconsistent with what my true opinions were or 6 putting down in writing things that I thought were 7 untrue.</p> <p>8 So I have no reason to think that those 9 weren't my opinions at the time. And if I've put it 10 in the document, they would be, but I don't 11 independently remember my opinions outside of what is 12 written here.</p> <p>13 Q (BY MR. SMYSER) Okay. Let me ask it a 14 couple of other ways. I think you told us earlier 15 that you were the overall manager of this project?</p> <p>16 A Yes, I did.</p> <p>17 Q And I suspect this report would not have 18 gone out without your imprimatur?</p> <p>19 A That's correct.</p> <p>20 Q And would that summary conclusion 21 paragraph have gone out if it were not something you 22 were in agreement with as an environmental scientist?</p> <p>23 A No, not --</p> <p>24 MR. SELEY: Objection. Objection. Calls 25 for speculation, lacks foundation.</p>

262	<p>1 A No, it would not have gone out.</p> <p>2 Q (BY MR. SMYSER) Okay. And based on your</p> <p>3 work, experience, education and background, and what</p> <p>4 you've testified to here today concerning, for</p> <p>5 instance, your slide presentation, which was some</p> <p>6 three years later than this, do you have any reason</p> <p>7 to believe that the general conclusions contained in</p> <p>8 this report are or were in error?</p> <p>9 MR. SELEY: Objection. Calls for expert</p> <p>10 testimony. Calls for speculation. Lacks foundation</p> <p>11 and leading.</p> <p>12 A No, I have no reason to believe so.</p> <p>13 Q (BY MR. SMYSER) Okay. And today you</p> <p>14 would stand by these general conclusions?</p> <p>15 MR. SELEY: Same objections. And</p> <p>16 relevance.</p> <p>17 A Yes, I would.</p> <p>18 MR. SMYSER: Let's do the papers.</p> <p>19 (Exhibit 7 marked.)</p> <p>20 Q (BY MR. SMYSER) Let me hand you what has</p> <p>21 been marked as Exhibit 7. Can you identify this for</p> <p>22 us, please?</p> <p>23 A This is a document prepared by Stratus</p> <p>24 Consulting. I was involved in the preparation of</p> <p>25 this document. I recall that the formatting of this</p>	264	<p>1 as evidenced by the title and whatever you remember</p> <p>2 about the paper?</p> <p>3 MR. SELEY: Objection. The document</p> <p>4 speaks for itself. Lacks foundation.</p> <p>5 A This paper compares the practices in oil</p> <p>6 fields in the U.S. as reflected by industry standards</p> <p>7 and regulations on how to dispose of oil field wastes</p> <p>8 with the practices that Texaco used in Ecuador.</p> <p>9 Q (BY MR. SMYSER) And we've discussed a</p> <p>10 fair amount of those practices already; is that</p> <p>11 right?</p> <p>12 A Yes.</p> <p>13 Q Do you stand by the content of this paper</p> <p>14 today?</p> <p>15 MR. SELEY: Objection. Speculation. It</p> <p>16 calls for speculation. Lacks foundation. Calls for</p> <p>17 improper expert testimony. And relevance.</p> <p>18 A I have to qualify it similarly to the</p> <p>19 previous paper. This at the time of the preparation,</p> <p>20 I stand by that this represents my analysis,</p> <p>21 thoughts, and opinions. But whether I now have</p> <p>22 access or know other things that might make some of</p> <p>23 this no longer correct or maybe slightly inaccurate,</p> <p>24 I don't know. I would have to go through the paper</p> <p>25 carefully.</p>
263	<p>1 document may have had input from Steven Donziger so</p> <p>2 that we may not be looking at the document exactly as</p> <p>3 prepared by Stratus in terms of formatting, but the</p> <p>4 content was prepared by Stratus.</p> <p>5 Q Okay. And by formatting, what do you</p> <p>6 mean?</p> <p>7 A The font type.</p> <p>8 Q The bolding?</p> <p>9 A The bolding, the footnote. I don't recall</p> <p>10 these types of formats as being prepared by Stratus.</p> <p>11 And, yeah, that's what I mean.</p> <p>12 Q Okay. But the content of the paper was</p> <p>13 Stratus or yours?</p> <p>14 MR. SELEY: Objection. Leading.</p> <p>15 A Yes.</p> <p>16 Q (BY MR. SMYSER) What's the title of the</p> <p>17 paper?</p> <p>18 A Chevron's Negligently Substandard Oil</p> <p>19 Field Waste Disposal Practices in Ecuador.</p> <p>20 Q Do you recall the time when this was</p> <p>21 written?</p> <p>22 A It would have been sometime between 2007</p> <p>23 and 2010, but I don't remember more specifically when</p> <p>24 that was.</p> <p>25 Q What is the general content of this paper</p>	265	<p>1 Q (BY MR. SMYSER) Okay. I don't think we</p> <p>2 have time, unfortunately, to go through the paper</p> <p>3 carefully today. I would love to oblige you with</p> <p>4 that.</p> <p>5 If you would thumb through the paper and</p> <p>6 let me ask you in general, the first section called</p> <p>7 disposal of formation water, have you, to the extent</p> <p>8 you remember, have you learned anything since this</p> <p>9 paper was published that would cause you to question</p> <p>10 the section called disposal of formation water?</p> <p>11 MR. SELEY: Objection. Misstates facts.</p> <p>12 Calls for speculation. Lacks foundation.</p> <p>13 A I don't think so. But I would have to,</p> <p>14 again, review it carefully.</p> <p>15 Q (BY MR. SMYSER) Okay. Let's look at the</p> <p>16 second section called use of reserve pits and the</p> <p>17 same question.</p> <p>18 MR. SELEY: Same objections.</p> <p>19 Q (BY MR. SMYSER) Have you learned anything</p> <p>20 that you think would cause you to believe that that</p> <p>21 section is inaccurate?</p> <p>22 MR. SELEY: My apologies. Same</p> <p>23 objections.</p> <p>24 A Based on a quick review, no, I can't think</p> <p>25 of anything.</p>

266	<p>1 Q (BY MR. SMYSER) Okay. Let's look at 2 section 3, documented contamination of U.S. oil 3 fields. Is there anything that you have learned 4 subsequent to that which would cause you to question 5 whether or not section 3 was accurate? 6 MR. SELEY: Objection. Calls for 7 speculation. Lacks foundation. 8 A No, nothing I can think of right now. 9 But, again, I've done only a quick review. 10 Q (BY MR. SMYSER) Okay. And then section 11 4, called Chevron's misleading claims about oil field 12 pits in the U.S., is there anything you have learned 13 since you wrote this that would cause you to question 14 the observations you made here? 15 MR. SELEY: Objection. Calls for 16 speculation. Lacks foundation. 17 A Nothing I can recall right now from a 18 quick review of the content. However, from looking 19 at this, I do recall that I didn't write this section 20 and -- I think you asked the question about when I 21 wrote this. I recall that this was written by Jen 22 Peers, who is a scientist at Stratus Consulting. 23 And I also recall that the authorship 24 attribution to me alone I don't think was my 25 decision. I think that was Steven Donziger's.</p>	268	<p>1 in the concession. 2 Q And did you author this document? 3 A Yes, I did. 4 Q Okay. And what was the purpose of the 5 document? 6 A The purpose was to provide documentation 7 about which sites we visited, along with some 8 background information as a way to describe where we 9 went on the site visit and what we saw. 10 Q Okay. This is an example of one of the 11 times you personally visited some of the sites in 12 Ecuador? 13 A Yes. 14 Q Okay. Let me ask you just to look at one 15 thing. Turn to page 4, if you would. And what well 16 site are you investigating here? 17 MR. SELEY: Objection. Vague. 18 A Under number 4? 19 Q (BY MR. SMYSER) Yes. 20 A This describes well site Shushufindi 38 21 which we visited on this trip. 22 Q Okay. And this was operated from when to 23 when? 24 A According to -- 25 MR. SELEY: Objection. Calls for expert</p>
267	<p>1 Q Okay. So the authorship should include 2 you and -- 3 A Jen Peers. 4 Q How do you spell Peers? 5 A P-E-E-R-S. 6 Q Okay. And she wrote section 4? 7 A What I recall is that she did the research 8 for section 4. She wrote the first draft of section 9 4. I probably -- I reviewed it and may have edited 10 it, at which point authorship becomes, I think, 11 harder to define. But she did the research and the 12 first drafting of section 4. She may have also done 13 a similar thing for other sections as well, but I 14 can't recall specifically. 15 Q Okay. 16 (Exhibit 8 marked.) 17 Q (BY MR. SMYSER) Let me hand you what has 18 been marked as Beltman 8. 19 MR. SELEY: Are we done with 7? 20 MR. SMYSER: Yes. 21 Q (BY MR. SMYSER) Just briefly, can you 22 describe that for us? 23 A This is a memo that I prepared for Steven 24 Donziger that describes a site visit that I was part 25 of on October 8th, 2009, where we went to some sites</p>	269	<p>1 testimony. 2 A According to the memo here, it was 3 operated from 1975 to 1976. 4 Q (BY MR. SMYSER) And do you, as far as you 5 know, is your memo correct? 6 MR. SELEY: Same objection. 7 A As far as I know. We have a database of 8 records of operation. And as far as I know, I used 9 that database to come up with this information. 10 Q (BY MR. SMYSER) Okay. Did you note in 11 that visit that -- well, let me ask you, did you see 12 visible evidence of pit contamination as reflected in 13 those photographs? 14 A Yes. 15 Q That's someone skimming oil off the top of 16 the pit? 17 A Yes, in the right-most photograph there. 18 Q Were you aware that during the trial 19 Texaco found no contamination in its samples of this 20 pit during the trial? 21 MR. SELEY: Objection. Calls for expert 22 testimony. Lacks foundation. 23 A Yes, I was aware of that. 24 Q (BY MR. SMYSER) Okay. Is that finding 25 inconsistent with that picture there?</p>

270	272
<p>1 MR. SELEY: Objection. Lacks foundation. 2 Misstates facts. Calls for speculation. Calls for 3 expert testimony. 4 A There certainly is contamination at this 5 site. It's contamination that you can see, that you 6 can smell. We also know it is contamination because 7 during the trial the plaintiff experts collected 8 samples from closer to this pit. And those samples 9 show high levels of oil contamination. 10 Q Let me hand you now what has been marked 11 as Beltman Exhibit 10. 12 MR. SELEY: Did we skip a number? 13 MR. SMYSER: I'm sorry, I didn't mean to 14 if I did. 15 MR. SELEY: The last one was 7. 16 MR. SMYSER: 8. So this should be Beltman 17 9. Can I borrow a pen? Somehow I've mislaid mine. 18 (Exhibit 9 marked.) 19 Q (BY MR. SMYSER) Thank you. Let me hand 20 you what has been marked as Beltman 9. And can you 21 tell us quickly what Beltman 9 is? 22 A This is a memo I prepared at the request 23 of Steven Donziger that describes the places we 24 visited on a site visit in November of 2008 with the 25 congressional delegation of Representative McGovern.</p>	<p>1 TCLP test that Texaco used during the cleanup of the 2 1990s to indicate when their cleanup was finished. 3 It's a document that is based on content that I 4 prepared. I don't recall preparing this document 5 itself. 6 This could be a document that Steven 7 Donziger prepared based on material that I provided 8 to him. 9 Q Do you know whether the content of the 10 document is content that you provided? 11 MR. SELEY: Object. Calls for 12 speculation. Lacks foundation. He just testified he 13 doesn't recognize it. 14 A The scientific basis of what is described 15 in here, yes, that is content from work that I have 16 done. 17 Q (BY MR. SMYSER) And was it accurate at 18 the time? 19 MR. SELEY: Objection. Calls for expert 20 testimony. Relevance. 21 A Yes, I believe it was accurate at the 22 time. 23 (Exhibit 11 marked.) 24 Q (BY MR. SMYSER) Okay. Let me hand you 25 now what has been marked as Beltman 11 and ask if you</p>
271	273
<p>1 Q Was this a congressional delegation from 2 the United States? 3 A Yes. 4 Q Okay. And you visited the site with those 5 people? 6 A Yes, I did. 7 Q Okay. And to the best of your knowledge, 8 was this authored by you? 9 A Yes. Not all of the photographs are mine. 10 And I had someone prepare the map at the end at my 11 direction, but I authored the rest. 12 Q And this, again, shows what you saw, 13 tasted and smelled during one of your visits, maybe 14 not tasted. I hope you weren't eating the soil, but 15 this contains a report on what you saw, smelled, 16 looked at during this visit? 17 A That's correct. 18 Q Fair enough. I'm through with this 19 exhibit. 20 (Exhibit 10 marked.) 21 Q (BY MR. SMYSER) Let me hand you what has 22 been marked as Beltman Exhibit No. 10. And ask if 23 you could tell us -- if you could identify this for 24 me quickly, please. 25 A This is the document that describes the</p>	<p>1 can identify that, please. 2 A This document also describes the TCLP test 3 that Texaco used to determine when their remediation 4 work was finished, similar to the prior document. 5 The scientific content is based on work that I did. 6 Ann Maest also did some of the research that is 7 described in here. I don't recall if this is a 8 document as we see it written verbatim by Dr. Maest 9 and me or whether Steven Donziger or others made some 10 changes to it. 11 Q Would you look at the footnote on page 1, 12 the first sentence of that which says, this summary 13 was authored by Douglas Beltman with the assistance 14 of Dr. Ann Maest both consultants of Stratus 15 Consulting in Boulder, Colorado. 16 Do you know whether that's accurate or 17 not? 18 A I certainly would claim authorship credit 19 for it, but, again -- and I know that Dr. Maest did 20 work that went into this document as well, but again, 21 whether what we see here is exactly as I wrote with 22 Dr. Maest's help, I don't recall. 23 Q Okay. And was -- did Texaco, in fact, use 24 the Toxicity Characteristics Leaching Procedure, the 25 TCLP test, to determine whether a cleanup was</p>

274	<p>1 successful or whether additional cleanup work was 2 necessary?</p> <p>3 MR. SELEY: Objection. Vague.</p> <p>4 A From the documents I've read about the 5 cleanup, yes, they did use the TCLPs test for that 6 purpose.</p> <p>7 Q (BY MR. SMYSER) And did you have an 8 opinion as to whether or not this test was 9 appropriate in evaluating whether or not soil 10 contamination from oil waste had been completely 11 remediated or not?</p> <p>12 MR. SELEY: Objection. Calls for expert 13 testimony. Lacks foundation. Calls for speculation. 14 And relevance.</p> <p>15 A Yes, I did have an opinion about that.</p> <p>16 Q (BY MR. SMYSER) And what was your 17 opinion?</p> <p>18 MR. SELEY: Same objections.</p> <p>19 A There are two parts to the opinion. One 20 is whether the TCLP test itself should be used. And 21 the second is the standard that Texaco applied to the 22 TCLP test results. So for the first part, the TCLP 23 test itself is not a measure of the petroleum content 24 in soil. So if the objective is to determine whether 25 a cleanup has removed petroleum contamination from</p>	276	<p>1 oily waste, the TCLP test can create problems if the 2 oil in the soil with -- forms an emulsion with the 3 water. In other words, since oil and water don't mix 4 well, when you do this in the laboratory, it can 5 produce conditions that don't give good results.</p> <p>6 MR. SELEY: Move to strike.</p> <p>7 Q (BY MR. SMYSER) In the first sentence of 8 the next paragraph, you state that the cleanup 9 standard that Texaco used, 1,000 milligrams per liter 10 Total Petroleum Hydrocarbons in the TCLP test is so 11 high that even if the soil were completely saturated 12 with crude oil, it would pass the test.</p> <p>13 Is that your understanding at the time, 14 about the efficacy of the TCLP test in evaluating 15 whether a cleanup had been effectively accomplished?</p> <p>16 MR. SELEY: Objection. Calls for expert 17 testimony.</p> <p>18 A Yes. 19 (Exhibit 12 marked.)</p> <p>20 Q (BY MR. SMYSER) Let me hand you what has 21 been marked as Exhibit -- Beltman Exhibit 12 and ask 22 if you can identify that for us, please.</p> <p>23 A This document describes data and evidence 24 about Texaco's cleanup in the 1990s and reasons why 25 that cleanup was ineffective and data showing why it</p>
275	<p>1 soil, it is inappropriate.</p> <p>2 What the TCLP test does measure is 3 contaminants that leach out of soil when soil is 4 taken back to the laboratory and subjected to 5 specific conditions.</p> <p>6 The standard that was applied was 1,000 7 milligrams of TPH per liter of water once the water 8 was mixed with soil in the lab and let sit.</p> <p>9 And that standard is inappropriate because 10 it is impossible for this oil and these oil 11 contaminated soils to ever exceed a thousand 12 milligrams per liter of TPH in a TCLP test.</p> <p>13 MR. SELEY: Move to strike.</p> <p>14 Q (BY MR. SMYSER) Okay. You indicate on 15 the bottom of page 1, going over to the top of page 2 16 that the EPA, Environmental Protection Agency, 17 recommended at the time that the test not be used for 18 oily waste such as those in the Napo concession?</p> <p>19 MR. SELEY: Objection. Misstates the 20 document.</p> <p>21 A That's correct. That's actually another 22 component I didn't talk about that in taking soils 23 back to the lab and mixing it in water and then 24 separating the water from the soil and measuring 25 contamination in the water, EPA recommends that for</p>	277	<p>1 was ineffective.</p> <p>2 The author, I'm identified as the author. 3 But, again, based on the format, I don't think this 4 is a format -- the format that I produced the 5 document in. It may be a format developed by 6 Mr. Donziger. And I would have to read carefully to 7 see if I could remember if this is verbatim what I 8 wrote.</p> <p>9 Q What's the title of the document?</p> <p>10 A Chevron's phony cleanup.</p> <p>11 MR. SELEY: I object to foundation with 12 regard to any of these questions here. He can't even 13 identify if it's his writing.</p> <p>14 Q (BY MR. SMYSER) The first major point 15 says Chevron's cleanup only addressed a small 16 percentage of the problem.</p> <p>17 Was that an accurate statement of your 18 opinion at the time when you were working on this 19 project?</p> <p>20 MR. SELEY: Objection. Calls for 21 speculation. Calls for an expert opinion. Lacks 22 foundation.</p> <p>23 A Yes.</p> <p>24 Q (BY MR. SMYSER) The second major heading 25 is Chevron's cleanup was ineffective.</p>

278	<p>1 Was that your opinion at the time you 2 worked on this project? 3 MR. SELEY: Same objections and leading. 4 A Yes. 5 Q (BY MR. SMYSER) The third heading says, 6 evidence found during trial demonstrates that the 7 remediated pits are not clean. 8 Was that your opinion at the time? 9 MR. SELEY: Objection. Same objections 10 and leading. 11 A Yes. When clean is defined by the 1,000 12 milligram per kilogram TPH Ecuadorian standard, yes, 13 that was my opinion. 14 Q (BY MR. SMYSER) Okay. The fourth heading 15 is independent evidence confirms that the remediated 16 pits are not clean. 17 What is the independent -- well, first, 18 was that a conclusion that you reached at the time? 19 MR. SELEY: Same objections. 20 A Yes, it was. 21 Q (BY MR. SMYSER) And what is the 22 independent evidence that you have reference to in 23 that sentence? 24 MR. SELEY: Objection. Lacks foundation. 25 Calls for speculation.</p>	280	<p>1 question. This is a document entitled Summary of 2 Environmental Data on Oil Contamination in the Napo 3 Concession. 4 The contents of this document are 5 materials that I have prepared or people under my 6 direction have prepared. It shows some of the same 7 tables and graphs that we've looked at earlier. 8 I don't recall this format. I don't 9 recall preparing the report in this format. So I 10 can't say that what we see here is exactly as I 11 prepared it. 12 Q I'm sorry? 13 A I can't say that what we see here is 14 exactly as I prepared it. 15 Q You were listed as the author of this 16 document. Is this one of those documents where the 17 content was prepared with you and other people at 18 Stratus? 19 MR. SELEY: Objection. Leading. 20 Q (BY MR. SMYSER) Can you tell us whether 21 or not this was a document you prepared by yourself 22 or whether you had help on it? 23 A I recall having help on the graph that is 24 shown on page 4. I recall -- I recall that someone 25 else prepared at least parts of Table 2. Other than</p>
279	<p>1 A The evidence that's referred to here are 2 data collected by the Ecuadorian Ministry of Energy 3 and Mines and data that is referred to here as part 4 of an academic research project, but I don't recall 5 now what that project is. 6 Q (BY MR. SMYSER) The -- 7 MR. SELEY: Excuse me. I'm just going to 8 have an additional objection. It appears to be an 9 incomplete document. There are footnotes here that 10 don't seem to be in this document. 11 Q (BY MR. SMYSER) Let me ask you to look at 12 the fifth heading, Chevron simply abandoned most of 13 their pits. Was that your opinion at the time? 14 MR. SELEY: Same objections. Lacks 15 foundation. Calls for speculation. And leading. 16 A Yes. 17 MR. SMYSER: Thank you. 18 (Exhibit 13 marked.) 19 Q (BY MR. SMYSER) Let me hand you what has 20 been marked as Beltman No. 13. Can you identify that 21 for us, please? 22 MR. SELEY: What is this? 13. 23 Q (BY MR. SMYSER) Can you identify this for 24 us, please? I'm sorry. 25 A Oh, I'm sorry if there was a pending</p>	281	<p>1 that, I can't recall one way or another. 2 Q Okay. Is the content of the document 3 otherwise content that you provided? 4 MR. SELEY: Objection. He just said he 5 can't recall. 6 A I would have to review the document 7 carefully. In general, what I see here in terms of 8 the tables and the text in the figures, they are 9 things that we prepared at Stratus that I have 10 provided to Mr. Donziger. But I can't recall 11 specifically if this is exactly as I prepared it. 12 Q (BY MR. SMYSER) Based on your general 13 review, have you seen anything in that document that 14 you don't think is data from yourself or someone at 15 Stratus? 16 MR. SELEY: Objection. Calls for 17 speculation. Lacks foundation. 18 A Based on my quick review, no, I don't. 19 (Exhibit 14 marked.) 20 Q (BY MR. SMYSER) Okay. Let me hand you 21 what has been marked as Beltman Exhibit 14 and ask 22 you to take a look at that. 23 A Okay. 24 Q If you'll look at the bottom right-hand 25 corner, you'll see that this is a document, again,</p>

282	<p>1 that bears the stamp of the Court, what I previously</p> <p>2 identified for you as the court stamp for the Court</p> <p>3 in Sucumbios.</p> <p>4 Do you see that?</p> <p>5 A I see that stamp, yes.</p> <p>6 Q And if you'll look at the bottom</p> <p>7 right-hand corner, you'll see that it says Informe</p> <p>8 del Perito, John A. Connor, P.E., P.G., D.E.E.</p> <p>9 Do you see that?</p> <p>10 A I can't make out the last three -- no, the</p> <p>11 last two letters but I see all the others, yes.</p> <p>12 Q Do you know who John A. Connor was?</p> <p>13 A I know of a John Connor who works for a</p> <p>14 consulting company that was contracted by Chevron and</p> <p>15 he was one of Chevron's experts in the judicial</p> <p>16 inspections.</p> <p>17 Q Okay. And it's not the John Connor who</p> <p>18 was the sole hope in the human race in the war</p> <p>19 against engines, machines of the Terminator movies,</p> <p>20 right?</p> <p>21 A Not that I know of.</p> <p>22 Q This, if you look at the left-hand side</p> <p>23 bottom, it says Pozo Sacha 6. Do you know what that</p> <p>24 means?</p> <p>25 A Well Sacha 6.</p>	284	<p>1 TPH?</p> <p>2 MR. SELEY: Objection. Calls for</p> <p>3 speculation. The document speaks for itself.</p> <p>4 A Yes, that's what I would interpret those</p> <p>5 dots to be --</p> <p>6 Q (BY MR. SMYSER) Okay.</p> <p>7 A -- would be the results from sampling.</p> <p>8 Q And these samples from Texaco provided to</p> <p>9 the Court from John Connor, do they indicate any</p> <p>10 samples above the 5,000 parts -- well, first above</p> <p>11 the 1,000 parts per million that you testified</p> <p>12 earlier was the Ecuadorian limit?</p> <p>13 MR. SELEY: Objection. Calls for</p> <p>14 speculation. Material is taken out of context.</p> <p>15 Lacks foundation.</p> <p>16 A Yes, I see some data points in the plot</p> <p>17 above a thousand parts per million. It looks like</p> <p>18 there are two different shapes to the data points and</p> <p>19 I'm not sure what that means, but there are quite a</p> <p>20 few data points above a thousand parts per million.</p> <p>21 Q There are data points of both shapes above</p> <p>22 a thousand parts per million; is that correct?</p> <p>23 MR. SELEY: Same objections.</p> <p>24 A Correct.</p> <p>25 Q (BY MR. SMYSER) And is there -- are there</p>
283	<p>1 Q Underneath that appear the words</p> <p>2 Inspeccion Judicial. What does that mean?</p> <p>3 A Judicial inspection.</p> <p>4 Q Okay. And if you would look at the table</p> <p>5 on that page, can you read the box beside the table?</p> <p>6 A I don't think I could translate that</p> <p>7 accurately --</p> <p>8 Q Okay.</p> <p>9 A -- with confidence.</p> <p>10 Q How about the title of the table itself?</p> <p>11 A Of the graph there?</p> <p>12 Q Yes.</p> <p>13 A Concentrations of TPH in subsoils.</p> <p>14 Q Okay. Do you see the little graph with</p> <p>15 the X and Y axis and the Y axis has TPH, milligrams</p> <p>16 per kilogram; do you see that?</p> <p>17 A I think it says TPH total milligrams per</p> <p>18 kilogram.</p> <p>19 Q Yes.</p> <p>20 A Yes, I see that.</p> <p>21 Q And that the numbers on that go from 1,000</p> <p>22 up to 120,000 or 12,000, I can't tell which. 12,000.</p> <p>23 A 12,000, yes, I see that.</p> <p>24 Q And do you see the little dot points there</p> <p>25 that seem to represent levels of concentration of</p>	285	<p>1 data points at 5,000 or above?</p> <p>2 MR. SELEY: Same objections.</p> <p>3 A There is at least one data point above</p> <p>4 5,000 ppm. There's another one that is very close to</p> <p>5 5,000, could be above. I can't tell.</p> <p>6 Q (BY MR. SMYSER) Okay. Turn the page, if</p> <p>7 you would, please. And can you read the title to</p> <p>8 that table?</p> <p>9 A A comparison of the maximum detected</p> <p>10 concentrations in soils with international criteria.</p> <p>11 Q Okay. And if you would look over under</p> <p>12 the column called Subsuetto (sic) con Petroleo.</p> <p>13 Do you see that all the way to the right?</p> <p>14 A Yes, I see that.</p> <p>15 Q And do you see under that the column that</p> <p>16 says Concentracion Maxima Detectada?</p> <p>17 A I see that, yes.</p> <p>18 Q And would you look at the first value</p> <p>19 there.</p> <p>20 A Yes.</p> <p>21 Q And can you tell us what that value shows?</p> <p>22 MR. SELEY: Same objections as before.</p> <p>23 This document is being taken out of context.</p> <p>24 A With that, based on the row to the left</p> <p>25 which is labeled TPH Como DRO, the DRO, I assume</p>

286	<p>1 refers to diesel range organics. So this is the 2 middle portion of the petroleum range that we talked 3 about earlier. And what this table, if I'm reading 4 that row correctly is showing is that the maximum 5 concentration detected was 8,400 milligrams per 6 kilogram of the diesel range of petroleum. 7 MR. SELEY: Move to strike as speculative 8 and lacks foundation. 9 Q (BY MR. SMYSER) Okay. I would like to 10 switch gears with you again. Thank you. And I would 11 like to mention the -- we've discussed with you the 12 60 Minutes video briefly. 13 A Can we take another quick break before we 14 get into that, please? 15 Q Very quick because I've only got a few 16 minutes left. That's fine. 17 A I just need another thing of water. 18 Q Yep, a short break. 19 THE VIDEOGRAPHER: We're off the record at 20 5:28. 21 (Recess taken from 5:28 p.m. to 5:34 p.m.) 22 THE VIDEOGRAPHER: Back on the record at 23 5:34. 24 Q (BY MR. SMYSER) Mr. Beltman, at some 25 point during your work on this project, did 60</p>	288	<p>1 A I met with the producer and the, I'll call 2 her, the assistant producer, prior to the filming 3 that took place in Ecuador. I didn't meet with the 4 correspondent prior to the filming in Ecuador. 5 Q (BY MR. SMYSER) Okay. The correspondent 6 was Mr. Pelley, I think you said? 7 A Yes. 8 Q And where did you meet with the producer? 9 MR. SELEY: I'm going to object to this 10 whole line of questioning as irrelevant. 11 A I met the producer in New York, I met the 12 producer in Ecuador. I did a tour of the concession 13 area with the producer. That's all I can recall, the 14 only meetings I recall right now. 15 Q (BY MR. SMYSER) Okay. Did your tour of 16 the concession area occur close to when you met with 17 the correspondent or before? 18 A Before. 19 Q Did you have to make separate trips to 20 Ecuador, one with the producer and one with the 21 correspondent, or did they occur in a single trip? 22 A They were separate trips. 23 Q Okay. How far apart? 24 A I recall roughly three to maybe four 25 months apart.</p>
287	<p>1 Minutes become interested in doing a story on what 2 was going on in Ecuador? 3 A Yes. 4 MR. SELEY: Objection. Calls for 5 speculation. 6 Q (BY MR. SMYSER) And did you participate 7 in the 60 Minutes program that resulted from 60 8 Minutes' interest in this project? 9 MR. SELEY: Objection. Misstates facts. 10 A Yes, I did. 11 Q (BY MR. SMYSER) How did you first get 12 contacted about that? 13 A The first contact that I had was through 14 Steven Donziger. I didn't have any independent 15 contact, except through Mr. Donziger. 16 Q Okay. Did you eventually meet with and 17 discuss your work with correspondents from the CBS 60 18 Minutes program? 19 A I met with one correspondent, Scott 20 Pelley, and a producer I can't remember her title, 21 it's an associate producer for the program. 22 Q Okay. And did you meet with them before 23 they started filming? 24 MR. SELEY: Objection. Calls for 25 speculation.</p>	289	<p>1 Q Did you get any understanding from the 2 producer as to why they wanted to talk to you about 3 this project? 4 A Yes. 5 Q And what was that understanding? 6 MR. SELEY: Objection. Calls for hearsay. 7 A What I recall them saying to me is that 8 they wanted to talk to me mostly about the data that 9 we had compiled on the contamination, other 10 information we had. We provided information to them, 11 provided data that they looked at. We talked about 12 the underlying facts, about the contamination in 13 Texaco's operations. And that's primarily why they 14 were talking to me, is my understanding. 15 MR. SELEY: Move to strike. 16 Q (BY MR. SMYSER) All right. I now would 17 like to go through the section of the 60 Minutes show 18 where you appear and ask you to, as you did with your 19 PowerPoint, to narrate to us what you were doing, 20 what you were showing, what you were attempting to do 21 in this segment. 22 Is that okay? 23 A Sure. 24 Q Will you do that with us? 25 A Yes.</p>

290	<p>1 Q Okay?</p> <p>2 MR. SELEY: Objection. Calls for improper</p> <p>3 testimony, improper expert testimony. Lacks</p> <p>4 foundation.</p> <p>5 Q (BY MR. SMYSER) Let's back up. Can we</p> <p>6 back up a little bit. Is that where it starts?</p> <p>7 Okay? It's not every day, I'll tell you, that one</p> <p>8 gets to appear on 60 Minutes with a closeup like</p> <p>9 that. Was this nerve-racking for you, or were you</p> <p>10 just indifferent to the whole thing? Were you just</p> <p>11 doing a job?</p> <p>12 A Working with the assistant producer on the</p> <p>13 background of the story, there was nothing too</p> <p>14 unusual about that. Appearing on camera in this case</p> <p>15 in a face-to-face interview with a correspondent was</p> <p>16 nerve-racking. I was nervous.</p> <p>17 Q And where were you at the time this</p> <p>18 interview occurred?</p> <p>19 A We were sitting on a bench, this is a face</p> <p>20 to face with the correspondent. We're sitting on a</p> <p>21 bench right next to the larger oil pit at</p> <p>22 Shushufindi 38.</p> <p>23 Q And why were you at Shushufindi 38?</p> <p>24 MR. SELEY: Objection. Calls for</p> <p>25 speculation.</p>	292	<p>1 the cameraman is standing, maybe a little bit behind.</p> <p>2 I'm describing how the water comes out of the pipe</p> <p>3 from the pit, flows down a little drainage and enters</p> <p>4 this little creek. And you can see oil in this</p> <p>5 little creek coming down from the pipe.</p> <p>6 Q (BY MR. SMYSER) Did you see oil in the</p> <p>7 little creek that day when you were standing there,</p> <p>8 crouching there with the correspondent?</p> <p>9 A As I recall, yes, we could.</p> <p>10 Q Could you smell oil at that time?</p> <p>11 A I don't remember if we could or not.</p> <p>12 MR. SMYSER: Okay. Roll the tape.</p> <p>13 Q (BY MR. SMYSER) And are you continuing</p> <p>14 your description here of what you're seeing?</p> <p>15 A Yes.</p> <p>16 Q Now, is this back to the bench interview?</p> <p>17 MR. SELEY: Objection. Leading.</p> <p>18 A Yes, the face to face.</p> <p>19 Q (BY MR. SMYSER) And is that the</p> <p>20 correspondent?</p> <p>21 A Yes, that's Scott Pelley.</p> <p>22 Q And what are you describing here in</p> <p>23 general?</p> <p>24 MR. SELEY: Objection. Calls for</p> <p>25 speculation.</p>
291	<p>1 A It wasn't my choice. That was where they</p> <p>2 said they wanted to do the face to face with me</p> <p>3 there. That's where I did it.</p> <p>4 Q (BY MR. SMYSER) Okay. In this</p> <p>5 face-to-face interview right here, what are you</p> <p>6 discussing?</p> <p>7 A He, the correspondent, as I recall the</p> <p>8 fact-to-face interview lasted about 45 minutes, maybe</p> <p>9 an hour. He asked a lot of questions about the data</p> <p>10 that I have looked at, what I knew about the</p> <p>11 contamination, similar kinds of things we've talked</p> <p>12 about today about Texaco's operations. I think what</p> <p>13 showed up in the clips that they showed in the</p> <p>14 program were me providing some general statements,</p> <p>15 overall statements about Texaco's operations in</p> <p>16 Ecuador.</p> <p>17 Q And let's look at the, if you would, the</p> <p>18 picture now on the screen. What is happening in this</p> <p>19 picture?</p> <p>20 MR. SELEY: Objection. Calls for</p> <p>21 speculation. And vague.</p> <p>22 A In this scene, the correspondent Scott</p> <p>23 Pelley, on the right, and I are in a little stream</p> <p>24 just downstream from one of the pipes that comes out</p> <p>25 of one of the pits. I think the pipe is about where</p>	293	<p>1 A As I recall from the show, this is -- he</p> <p>2 was actually asking me a question about whether this</p> <p>3 would have happened in the U.S. And I'm describing I</p> <p>4 didn't think it would happen in the U.S., either the</p> <p>5 contamination or the fact that the contamination</p> <p>6 would still be there 20 or 30 years later.</p> <p>7 Q (BY MR. SMYSER) Okay. And what is this</p> <p>8 picture showing now?</p> <p>9 MR. SELEY: Objection. Lacks foundation.</p> <p>10 Calls for speculation. Calls for expert testimony.</p> <p>11 A This is one of the oil pits at well site</p> <p>12 Aguarico 4. It's a well site operated by Texaco. It</p> <p>13 was not operated by Petroecuador so it was shut down</p> <p>14 prior to 1990. And what we're seeing here, it's a</p> <p>15 little bit hard to tell in this picture, but the pit</p> <p>16 is covered with oil and there are leaves that have</p> <p>17 fallen on top of the pit so it's kind of a rough</p> <p>18 vegetation like looking area. But it's -- there's no</p> <p>19 solid ground there. It's oil and you wouldn't want</p> <p>20 to step out there.</p> <p>21 Q Does this picture --</p> <p>22 MR. SELEY: Move to strike.</p> <p>23 Q (BY MR. SMYSER) -- contain a true and</p> <p>24 accurate representation of what you saw at</p> <p>25 Aguarico 4?</p>

294	296
<p>1 MR. SELEY: Objection. Lacks foundation. 2 A Yes, I was present when they did that 3 filming and I've been to that site other times and 4 that is an accurate representation of what it looks 5 like. 6 MR. SELEY: Objection. Oh, no, sorry, 7 move to strike. 8 Q (BY MR. SMYSER) What is that picture of? 9 A That's a closeup of the surface of the 10 pit. 11 MR. SELEY: Same objections. 12 A You can see a little bit that this is 13 oily, leaves have fallen on top of the pit. You can 14 see it's black and sort of oily. 15 MR. SMYSER: Continue, please. 16 Q (BY MR. SMYSER) Now, what is happening 17 here? 18 MR. SELEY: Same objections. 19 A Here the correspondent, Mr. Pelley, has 20 walked out on a couple of small pieces of wood to get 21 closer to the edge of the pit and he has a long pole 22 that he is sticking into the pit through the surface. 23 He's trying to see if he can get to the bottom, see 24 how deep this pit is. 25 Q (BY MR. SMYSER) Okay. Do you remember</p>	<p>1 MR. SELEY: Objection. Calls for expert 2 testimony. 3 A It's typical of all the places that I've 4 been there, yes. 5 Q (BY MR. SMYSER) Okay. Now, what is 6 happening in this picture? 7 A This is a closeup of the end of the pipe. 8 So this is the -- not the end of the pipe in the pit, 9 but it's the end of the pipe that sticks out the side 10 of the pit. And we can see some water draining out 11 of the pipe. 12 Q And where is it draining? 13 MR. SELEY: Objection. Calls for 14 speculation. Lacks foundation. 15 A The water drains down a small hill. It's 16 a gully that the water has formed over time. It runs 17 down through this gully and then into a wetland or 18 stream area down at the bottom of the hill. 19 MR. SMYSER: Okay. Continue. 20 Q (BY MR. SMYSER) And what is happening 21 here? 22 A Here he is sticking his hand under the 23 pipe collecting the water with his hand. I think he 24 next pulls it up to his nose and smells it and says 25 that he can smell the oil in the water.</p>
295	297
<p>1 whether or not he did get to the bottom? 2 MR. SELEY: Objection. Calls for 3 speculation. Lacks foundation. 4 A I don't remember if he did or not. 5 Q (BY MR. SMYSER) Okay. What's happening 6 in this picture now? 7 MR. SELEY: Same objections. 8 A We're at the same site. It's at 9 Aguarico 4. We can see in the foreground this is the 10 pipe that was built into the side of the pit. And 11 the camera is up. The pit is behind the camera. 12 We're looking at the pipe and then Mr. Pelley and I 13 are walking up from the bank where the water that 14 comes out of this pipe then drains down into a 15 stream. 16 Q (BY MR. SMYSER) Is this a pipe from the 17 pit that we were looking at previously or -- 18 A Yes. 19 Q -- from another pit? 20 A No, this is the same pit at Aguarico 4. 21 Q Is this an accurate representation of what 22 you saw that day? 23 A Yes. 24 Q What about the foliage, is that 25 rainforest, typical rainforest foliage?</p>	<p>1 MR. SELEY: Objection. Hearsay. 2 Q (BY MR. SMYSER) Had you previously done 3 something like this at pipes similar to this, where 4 you had collected water and smelled it? 5 MR. SELEY: Objection. Lacks foundation. 6 A I have done it at this particular pipe. I 7 didn't do it on this particular -- on this visit, but 8 I have done it at this site. 9 Q (BY MR. SMYSER) And what did you 10 determine -- what did you smell when you did that? 11 A Oil. 12 MR. SMYSER: You may continue. 13 Q (BY MR. SMYSER) And what does this 14 picture show? 15 A It's another shot of the same pipe, where 16 that water comes out of the pipe and where that water 17 hits the soil and now the start of the gully is 18 formed. You can see there in black it's oil that has 19 collected. It's accumulated on the soil. 20 MR. SELEY: Move to strike. Lacking 21 foundation. 22 MR. SMYSER: Continue, please. 23 Q (BY MR. SMYSER) That's the end of your 24 segment in 60 Minutes? 25 A (Indicating.)</p>

298	300
<p>1 Q Did you reach an opinion during your work 2 on this matter as to whether or not Texaco's 3 substandard practices in waste disposal, as you have 4 described them today, were a cause of environmental 5 contamination and pollution to the Ecuadorian 6 rainforest? 7 MR. SELEY: Objection. Calls for expert 8 testimony. Leading. Calls for speculation. Lacks 9 foundation. 10 A Yes, I did. 11 Q (BY MR. SMYSER) And what was your 12 opinion? 13 MR. SELEY: Same objections. 14 A My opinion is that Texaco's operations 15 caused pollution of the rainforest environment, 16 caused the pollution of groundwater, of soils, of 17 surface water, streams, rivers, and of the air. 18 MR. SELEY: Move to strike as irrelevant. 19 Q (BY MR. SMYSER) And did that pollution 20 which you found at the time you were working on the 21 project, present a harm, a threat of harm to the 22 biological life, including plants, and animals and 23 humans who were affected by the discharge of oil 24 waste from Texaco's operations? 25 MR. SELEY: Objection. Calls for expert</p>	<p>1 found the Texaco oil pits, at the time you did your 2 work in Ecuador, would be permitted to continue 3 unabated and unremediated? 4 MR. SELEY: Same objections and incomplete 5 hypothetical. 6 A Yes, I did. And I concluded that open 7 pits like this, with the number of pits, the scale of 8 the pits that were left and the contamination of the 9 pits, it's very unlikely that it would have been left 10 alone like it was in Ecuador, in the U.S. 11 MR. SELEY: Move to strike. 12 Q (BY MR. SMYSER) Did you reach an opinion 13 as to whether or not the practices that Texaco used 14 as operator of the oil wells in the concession area 15 from 1972 to 1990 were in accordance with industry 16 standards that would have applied if these wells had 17 been drilled in the United States? 18 MR. SELEY: Objection. Calls for expert 19 testimony. Calls for speculation. Lacks foundation. 20 A Yes. 21 Q (BY MR. SMYSER) And what opinion did you 22 form? 23 MR. SELEY: Same objections. 24 A That the way Texaco operated this oil 25 field was not consistent with regulations in the U.S.</p>
299	301
<p>1 testimony. Leading. Calls for speculation. Lacks 2 foundation. Lacks any evidence of causation. 3 A I reached conclusions specific to 4 environmental harm that produced water discharged in 5 particular was toxic to aquatic life. I'm not an 6 expert on human health toxicology, but based on a 7 comparison of environmental data with things like the 8 EPA drinking water standard, I concluded that the 9 contamination has also contributed to exposure of 10 humans and that exposure is at least potentially 11 harmful levels. 12 MR. SELEY: Move to strike. 13 Q (BY MR. SMYSER) Did you reach an opinion 14 at the time as to whether or not in the United States 15 oil pits in the condition that you found them, at the 16 time you did your work in Ecuador, would be permitted 17 to continue unabated and unremediated? 18 MR. SELEY: Objection. Calls for expert 19 testimony. Vague, calls for speculation. Calls for 20 a legal conclusion. Lacks foundation. 21 A I'm sorry, could you repeat that question, 22 please? 23 Q (BY MR. SMYSER) Yes. Did you reach an 24 opinion at the time as to whether or not in the 25 United States oil pits in the condition that you</p>	<p>1 at the time or industry standard practices. 2 MR. SELEY: Move to strike. 3 Q (BY MR. SMYSER) I'm told that my time has 4 expired. I appreciate your courtesy and your time in 5 answering my questions. 6 Have you understood my questions? 7 A Yes, I have. 8 Q Have you answered them to the best of your 9 ability, truthfully and fully truthfully? 10 A Yes, I have. 11 MR. SMYSER: Thank you for your time. 12 THE DEPONENT: Thank you. 13 MR. SELEY: All right. I'm going to state 14 for the record I have extensive cross-examination to 15 do. And I'm going to ask on the record if the other 16 counsel here would agree to make Mr. Beltman 17 available for my cross-examination without me issuing 18 a subpoena. 19 MR. SMYSER: Speaking on behalf of the 20 Ecuadorian plaintiffs at this time, I will not agree 21 to extend the time of seven hours provided by the 22 Federal Rules of Civil Procedure for 23 cross-examination, especially for a witness that 24 Chevron maintained had no factual knowledge and for a 25 witness whose deposition Chevron opposed even</p>

302

1 occurring.

2 MR. SELEY: Counsel for Mr. Beltman.

3 MR. GREEN: Well, at this point I am not

4 going to consent to having my client voluntarily

5 appear. I know that counsel for Chevron is about to

6 serve a subpoena on my client. We will, of course,

7 accept the subpoena. However, our acceptance of the

8 subpoena by no means waives our right to object to

9 its propriety.

10 Additionally, my client has already been

11 deposed for seven hours here. Frankly, I did not

12 understand why it was necessary for almost every

13 question to be objected to by counsel for Chevron.

14 Frankly, I think that there was a lot of

15 time that was wasted because of that and I certainly

16 at this point have not authorized, nor will I agree

17 to have him appear voluntarily for cross-examination.

18 MR. SELEY: All right. Well, thank you.

19 I disagree with your position, obviously. I will

20 serve on Mr. Beltman a subpoena asking him to appear

21 on the 15th of this month at 9 a.m. at Gibson Dunn &

22 Crutcher, 1801 California Street in Denver, Colorado,

23 where his deposition will be taken.

24 And I can hand it to Mr. Beltman or I can

25 hand it to counsel.

303

1 MR. GREEN: I will accept it on his

2 behalf. I notice that there is -- now this is also a

3 document for production of documents, correct, of

4 approximately --

5 MR. SELEY: Can I clarify that.

6 MR. GREEN: -- 50 categories of documents

7 returnable less than a week from today. This is I

8 think an abusive practice. But you've served it and

9 we will respond.

10 MR. SELEY: Okay. Just to clarify the

11 document subpoena had previously been served and this

12 is modified now to include a deposition because we

13 didn't get an opportunity to do our cross-examination

14 today. With that clarification, I understand you

15 have accepted service. I also understand you reserve

16 your rights.

17 MR. GREEN: I also object to the fact that

18 a witness fee has not been tendered at this time.

19 MR. SELEY: We can provide a witness fee

20 to Mr. Beltman as appropriate.

21 MR. SMYSER: And I object to the documents

22 as not having been provided proper notice of that.

23 MR. SELEY: I think everyone has now

24 gotten as many objections as they can on the record.

25 That being said, I also would like to represent on

304

1 the record, I'm willing to work with counsel with

2 regard to date for depositions. I understand from

3 plaintiffs' counsel that they are willing to have

4 Mr. Beltman's subpoena occur after the 15th if

5 that's -- if it has to be done that way, but our

6 preference at this point is to move forward on the

7 15th.

8 MR. SMYSER: You are correct that if the

9 Court determines that you are entitled to more time,

10 that I will work with you on a date for the

11 deposition that is convenient to all parties

12 concerned.

13 MR. SELEY: Okay. Anything else anyone

14 needs to say on the record? All right. Thank you

15 both.

16 MR. GREEN: Nothing further.

17 THE VIDEOGRAPHER: We're off the record at

18 5:57.

19 (Proceedings adjourned at 5:57 p.m.)

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305

1 C E R T I F I C A T E

2 I, DOUGLAS BELTMAN, do hereby certify

3 that I have read the foregoing transcript of my

4 testimony, and further certify that it is a true

5 and accurate record of my testimony (with the

6 exception of the corrections listed below):

7	Page	Line	Correction
8	_____	_____	_____
9	_____	_____	_____
10	_____	_____	_____
11	_____	_____	_____
12	_____	_____	_____
13	_____	_____	_____
14	_____	_____	_____
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17	_____	_____	_____
18	_____	_____	_____
19	_____	_____	_____

20

21 _____

22 DOUGLAS BELTMAN

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24 THIS ____ DAY OF _____, 20__.

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1 I N D E X
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 3 EXAMINATION PAGE
 4 BY MR. SMYSER 3
 5 PRODUCTION REQUEST(S):
 6 None.
 7
 8 INDEX OF EXHIBITS
 9 DESCRIPTION INITIAL REFERENCE
 10
 11 Exhibit 1 4/7/10 Beltman slide 27
 presentation,
 CVX-RICO-2268146-2268197
 12
 13 Exhibit 2 Woodward-Clyde May 2000 report, 186
 CVX-RICO-2026694-2026916
 14
 15 Exhibit 3 HBT AGRA audit report, 207
 CA1069438-1068920
 16 Exhibit 5 11/7/08 e-mail to Donziger from 209
 Beltman with attachments,
 CVX-RICO-2196276-2196296
 17
 18 Exhibit 6 11/12/07 Spanish version of 252
 Stratus Consulting report
 19
 20 Exhibit 7 Article by Beltman titled 262
 Chevron's Negligently
 Substandard Oilfield Waste
 Disposal,
 CVX-RICO-2201970-2201979
 22
 23 Exhibit 8 10/15/09 Memorandum to Donziger 267
 from Beltman re Information on
 Sites Visited 10/8/09,
 24 CVX-RICO-2207185-2207189
 25

1 STATE OF COLORADO)
 2) ss. REPORTER'S CERTIFICATE
 3 COUNTY OF DENVER)
 4 I, Kelly A. Mackereth, do hereby certify
 5 that I am a Registered Professional Reporter and
 6 Notary Public within the State of Colorado; that
 7 previous to the commencement of the examination, the
 8 deponent was duly sworn to testify to the truth.
 9 I further certify that this deposition was
 10 taken in shorthand by me at the time and place herein
 11 set forth, that it was thereafter reduced to
 12 typewritten form, and that the foregoing constitutes
 13 a true and correct transcript.
 14 I further certify that I am not related to,
 15 employed by, nor of counsel for any of the parties or
 16 attorneys herein, nor otherwise interested in the
 17 result of the within action.
 18 In witness whereof, I have affixed my
 19 signature and seal this 12th day of September, 2011.
 20 My commission expires April 21, 2015.
 21
 22
 23 Kelly A. Mackereth, CRR, RPR, CLT
 24 216 - 16th Street, Suite 650
 25 Denver, Colorado 80202

1
 2 DESCRIPTION INITIAL REFERENCE
 3
 4 Exhibit 9 11/11/08 Memorandum to Members 270
 of Ecuador CODEL of Rep. James
 McGovern from Beltman re
 Information on Sites Visited,
 WOODS00034363-00034369
 5
 6
 7 Exhibit 10 Beltman article titled How 271
 Chevron's Bogus Lab Test
 Guaranteed a "Successful"
 Remediation,
 CVX-RICO-2202095-2202096
 8
 9
 10 Exhibit 11 Beltman and Maest article titled 272
 Texaco's Misuse of the TCLP Test
 to Evaluate the Effectiveness of
 Oil Cleanup in Ecuador,
 CVX-RICO-2204388-2204390
 11
 12
 13 Exhibit 12 Beltman article titled Chevron's 276
 Phone "Cleanup",
 CVX-RICO-2202089-2202090
 14
 15 Exhibit 13 Beltman article titled Summary 279
 of Environmental Data on Oil
 Contamination in the Napo,
 CVX-RICO-2201994-2202000
 16
 17
 18 Exhibit 14 Pozo Sacha 6 Inspeccion 281
 Judicial, Informe del Perito,
 John A. Connor,
 CVX-RICO-1021331-1021472
 19
 20
 21
 22
 23
 24
 25

A			
abandoned 8:18 49:11 50:3 279:12	Acrobat 235:6	adverse 5:21 103:7	al 1:11,14 112:23
ABG 110:8	acronym 110:21	adversely 97:10	alleged 212:10
ability 217:25 301:9	Act 18:10	aerial 49:12,19,20 49:23 53:4,9	allow 241:3
able 159:1	action 179:14 185:19,24 186:3,6	155:13,15 156:2	allowable 137:25
absent 146:7 197:8	186:8 187:25	156:19 163:17	allowed 109:5 149:20 182:16
absolutely 52:12 71:15,22 146:6	188:1,4 191:5,12	167:24	215:10,23
absorb 120:3	191:13,18,22,24	affixed 308:18	allows 107:12
ABT 230:23	192:1,15,16,18,21	afraid 154:13	alongside 118:14
abusive 303:8	192:22 193:2,2	Africa 15:1,4,6,7	aloud 259:23
academic 279:4	215:3 248:18	age 204:1	Amazon 20:19 38:14,19 113:13
accept 210:14 254:1 255:3 302:7 303:1	249:1,15 308:17	agencies 11:2,6 12:10 14:8,10	220:7,17,21,23
acceptable 112:7 150:25 217:7	actions 204:15	agency 7:11 14:19 197:18,21 275:16	Amazona 36:5
acceptance 302:7	activities 20:22 177:7 185:21	ago 101:12 187:19	Amazonian 26:15
accepted 41:6 303:15	189:15 202:13	AGRA 129:14 207:21 208:3	America 15:8,9,12
access 264:22	218:12 233:25	209:17 210:4,6	American 87:5,6,22 88:6 93:16
accomplished 276:15	241:16 243:8	212:14 219:13	amount 11:8 12:15 14:9 69:13 112:6
accord 240:16	activity 185:13	220:13 224:10,19	139:13 152:15
accounts 44:9 45:9	actual 155:17 211:10	230:23 235:5,8	154:14 168:18
accumulate 103:21	adapted 96:24	306:14	188:17 264:10
accumulated 74:18 297:19	add 133:7 153:13 158:5	agree 241:4 301:16 301:20 302:16	amounts 116:25 117:8 163:3
accumulating 69:25	added 60:19 178:22	agreement 159:22 176:6 261:22	amplify 164:9
accuracy 215:17	addition 101:17 102:23	Agrio 20:13,14 21:7 27:3 31:15,16,20	Amunarriz 130:4
accurate 51:14 54:10 58:22 68:25	additional 4:18 175:10 274:1	31:22 32:5 37:23	analyses 133:7,9,11 133:14 134:6,7,13
98:24 106:20	279:8	38:25 65:17 88:5	149:21,24 198:2
155:8 195:15	Additionally 302:10	148:13 187:5,14	analysis 12:19 23:25 49:13,19 61:4,5
231:2 250:12,25	address 24:7 151:6 176:15	209:4 226:14	133:21 134:4,15
258:14,25 259:9	addressed 14:21 277:15	255:10	135:7,24 136:3
259:15 266:5	addresses 14:18	Agua 107:18	139:4 150:13
272:17,21 273:16	adjourned 304:19	Aguarico 110:8 255:11 293:12,25	151:2 169:8
277:17 293:24	Administration 12:14 16:21	295:9,20	202:22,23 264:20
294:4 295:21	admit 154:23	AGUINDA 1:11	analytical 135:23 136:2 149:13
305:5	Adobe 235:5	ahead 25:8 48:15,15 74:13 191:19	150:9
accurately 260:21 283:7	adopt 224:22 225:16 226:8	197:3	analyze 24:12,19 60:25 152:18
achieved 218:24	adopted 197:24 225:5 226:1	aid 63:7	analyzed 101:23 112:23 133:3
acids 63:11		air 125:22 126:4,10 298:17	134:13 151:25

153:10 205:1 231:8 analyzes 149:23 analyzing 14:12 24:21 60:24 130:17 Andes 220:16 anecdotal 97:15 animal 44:22 47:2 96:7 97:9 126:5 animals 5:18 48:2 298:22 Ann 188:23,24 210:7 212:14 273:6,14 annex 198:22,23 199:16 200:6 201:5,6 253:15 answer 20:1 30:19 79:7 145:5 150:17 150:18,24 165:11 179:16 186:4 208:12 217:16 223:3 239:2 253:11 261:2 answered 67:7 82:8 301:8 answering 301:5 anticipated 114:19 anymore 11:18 98:10 anyway 240:3 apart 146:13 259:7 288:23,25 apologies 65:11 265:22 apologize 100:19 202:19 212:17 apparatuses 41:16 appear 36:20 37:17 38:11 70:24 130:2 136:4 235:24 248:20 249:3 283:1 289:18 290:8 302:5,17,20	appearance 49:24 APPEARANCES 2:1 Appearing 2:7,14 2:20 290:14 appears 39:25 48:12 50:24 53:4 64:10 100:3 152:25 279:8 applicable 61:9 application 222:2 applied 221:3 274:21 275:6 300:16 applies 62:23 176:9 221:14 224:17 apply 10:5 141:8,9 179:9 223:19,21 255:19,25 appreciate 28:24 189:10 301:4 appreciation 53:24 approach 138:8 152:14 approaching 143:23 144:14 appropriate 120:14 152:12 179:13 221:11,14 222:3,7 222:8,10 223:8 229:6,7 231:10 274:9 303:20 approve 210:9,13 approved 150:12 approximately 94:7 113:7 157:23 162:24 303:4 April 28:1 308:20 aquatic 101:14,15 102:3,13,20,23 103:15 299:5 area 17:11 31:20 32:9,12 33:1 37:2 37:9,12 38:4,18 39:1,7 50:23 54:4	64:19 74:7 77:11 77:21 78:5 97:7 106:13 123:20 141:10 162:21 166:4,5 198:24 199:17 203:17 205:4 220:9,18,18 221:8,17,21,22,23 222:16 223:9,25 227:8 232:6 242:2 243:1 288:13,16 293:18 296:18 300:14 areas 37:5,7 39:16 77:22 149:3,9,10 165:17,18,20,23 199:11 203:18,18 204:2,8,10,11,14 204:15 205:5 215:13 221:3 227:25 244:8 260:12 arguments 176:1 206:18 212:9 aromatic 9:6 arranged 54:5 arrival 242:6,23 arrow 41:22 43:12 108:21 arrows 154:19 art 11:10 article 306:19 307:7 307:10,13,15 aside 32:11 103:23 109:24 159:19 177:11 205:7 asked 19:16 101:12 168:12 188:1 200:8 222:14 234:16 266:20 291:9 asking 18:17 20:25 21:2,5 36:9 56:2 92:9,12 160:2 293:2 302:20	aspect 104:8 147:18 aspects 89:10 129:22 asphalt 136:21 assess 11:6 17:1 18:2 assessed 244:22 assessing 16:21 17:13 24:8 assessment 12:16 14:15,16 15:11 219:14 220:4,5 assessments 11:1 14:4 asset 244:11 assigned 190:24 191:2,23 192:6 assistance 273:13 assistant 288:2 290:12 associate 287:21 associated 11:15 97:18 129:12 196:18 249:24 250:1 260:8 assume 79:22 107:19 119:3 138:19 158:14,15 161:7 203:2 285:25 Assuming 209:8 Atacpi 110:8 atmosphere 41:2,14 41:18 224:25 225:21 226:3,10 Atmospheric 12:14 16:21 attached 108:22 209:25 attachments 306:16 attacks 111:20 attempting 289:20 attention 10:10 46:19 111:10 145:20 219:12
---	--	--	---

230:20 246:2 254:16	available 259:1 260:11 301:17	109:13,13 117:1 142:22 143:2,3 181:4	began 93:10 100:16 100:21
attorneys 20:4 176:7 221:10 222:9 223:20,23 223:24 252:16 308:16	Avenue 2:4	barefoot 123:25	begins 249:23
attribution 266:24	avoided 107:10	Barium 60:13	behalf 2:7,14,20 11:1,20 14:7 16:1 19:21 87:9 301:19 303:2
Auca 230:10 231:4 231:5,11,20	awarded 4:11	bars 142:20,20	believe 16:2 31:23 48:23 89:25 95:11 141:22 196:21 221:2 230:22 250:18 262:7,12 265:20 272:21
audience 124:21	aware 19:16 128:22 128:24 150:11 214:14,21 258:23 258:23 269:18,23	based 36:10 39:19 39:19 41:4 45:24 51:13 55:1 59:24 62:11 64:3 66:11 74:24 76:6 77:10 81:15 93:14 94:10 97:3 98:23 104:18 134:3 138:20 139:6 144:16 152:20,25 156:4,8 168:3 171:25 175:6 177:8 183:16 190:1 216:9 217:23 218:2 225:3 231:9 243:13 255:23 262:2 265:24 272:3,7 273:5 277:3 281:12,18 285:24 299:6	believed 258:14
audit 119:13,25 121:11,18,22 122:7,8 207:20 208:21 210:4,11 210:22 211:16,16 212:1 213:11 231:21 235:24 236:3 244:25 250:19,21 306:14	axis 108:16,17 109:8 110:8 157:9,11 158:25 199:22,25 283:15,15	Beltman 1:5,19 3:8 3:13,19 30:16 53:2 67:7 93:9 127:16 180:24 230:19 267:18 270:11,16 270:20,21 271:22 272:25 273:13 276:21 279:20 281:21 286:24 301:16 302:2,20 302:24 303:20 305:2,21 306:11 306:16,19,23 307:5,7,10,13,15	best 42:21 121:2
audited 244:25 245:2 246:3,12,20	a.m 1:20 52:23,24 67:2,3 93:5,6 302:21	<hr/> B <hr/>	
auditor 127:3 251:22	B 136:7 193:1	bachelor's 4:12,17	
auditors 41:15	back 36:24 42:9 46:19 53:1 59:16 63:12 67:4 79:9 84:2,7 89:8 90:25 92:15 93:8 97:24 106:25 107:15 127:15 173:16 178:24 180:10 182:4 185:15 188:20 190:3 191:1 206:25 212:21,22 226:24 227:15,21 230:17 275:4,23 286:22 290:5,6 292:16	basically 40:22	
audits 33:12 41:13 94:2,6 100:22,23 108:5 118:16,20 119:7 120:6,6,8,9 121:3 122:14 123:9 125:19 126:22 129:15,16 131:1 173:2 212:3 251:15,18	background 45:25 81:16 94:10 98:23 134:3 169:16 225:3 262:3 268:8 290:13	basin 38:14 220:7 220:17,23	Beltman's 304:4
author 268:2 277:2 277:2 280:15	bacteria 5:18 63:10	basing 151:8	bench 290:19,21 292:16
authored 271:8,11 273:13	Bailey 10:14	basis 25:1 138:16 139:7 140:12 147:10 150:12 217:12,15 250:20 272:14	benchmark 145:5
authority 12:17 35:1	ballpark 159:4	basketball 111:21	beneath 260:13
authorize 210:14,15	bank 295:13	Bates 28:15,18,19 28:20 29:8,10 67:13 207:23 208:15,23	benefit 12:18 198:1
authorized 302:16	bar 36:1 107:18	bathe 77:12 237:3	benefits 198:5
authors 204:20		bathed 76:9	Benjamin 2:17
authorship 266:23 267:1,10 273:18		bathing 76:12 78:1	benzene 45:17 110:22,24 111:13 111:15 112:1,6,7 112:11,18 113:4,7 115:16 117:12,12 117:14,17

151:25 271:7 301:8 best-looking 51:10 better 36:19 55:6 73:22 74:1 124:21 132:23 211:8 beyond 18:17,23 145:2 209:15 215:12 243:23 244:1,7 245:22 256:25 257:10 bgreen@zeklaw.c... 2:19 big 12:20 85:8 91:25 118:8 135:10 bigger 77:19 99:8 105:14 BII 188:22 billion 94:7,13 95:17 98:13 bioacid 228:3 biocides 63:9 biological 220:8 298:22 bit 12:3 22:24 41:17 51:18 89:4 96:15 120:24 133:12 135:6 140:12 158:23 163:14 210:20 254:17 290:6 292:1 293:15 294:12 black 43:13 45:10 46:3 54:25 125:24 155:16 157:6 161:14 294:14 297:18 blind 41:22 block 227:5 blow 89:2,4 92:6,16 92:17 blowup 37:1 blue 38:11,13 41:21 blurry 89:6 board 13:25	Bogus 307:7 bolding 263:8,9 borrow 270:17 bottom 58:4 74:16 97:25 100:3 124:1 124:7 136:5 156:20 163:13 193:6 200:18 207:24 208:24 249:19 275:15 281:24 282:6,23 294:23 295:1 296:18 bottoms 240:4 bought 13:4 Boulder 10:16 273:15 bound 10:10 boundaries 32:11 51:20 box 211:5 213:1,21 215:9 216:20 217:18 283:5 boxes 30:2 210:24 BP 16:24 17:2 break 6:19 52:11 53:3 127:8,17 131:2 133:11 158:25 180:3,14 180:25 230:12,20 286:13,18 breakout 131:17 breaks 44:10 52:15 52:18 breathing 124:3 126:12 brief 159:19 briefly 207:11 209:13 267:21 286:12 bring 213:22 broad 150:16 broader 14:18 220:4 220:5 Brock 2:22	broken 111:20 173:20 brought 20:16,18 21:15 100:11 214:1 BS 4:8 BTEX 110:20,20 116:5 138:15,21 build 104:1 buildup 63:14 104:3 built 33:6,18 53:12 64:17 68:1 105:11 108:2 118:11 131:18,19 155:21 169:22 170:4,7 172:1 173:21,24 177:8,10 215:22 295:10 built-in 67:19 bullet 33:24 176:4 176:24 177:21,24 196:21,25 197:4 197:14 burn 40:23 125:23 215:14 burning 126:13,15 B-A-I-L-L-Y 10:14	128:12 182:2 219:14 251:16 288:1 called 1:19 4:20 8:15 10:13 31:14 32:5,20 33:7 39:2 43:20 48:11 49:2 82:5 90:7,10,13 135:13 142:11 169:11 178:17 183:6 185:22 193:20 196:18 197:25 203:1,18 207:1 215:21 265:6,10,16 266:11 285:12 calling 233:13 calls 18:18 25:5 31:4 31:17 32:7 33:2,21 34:18 35:9,20 36:21 38:16 40:5 41:8,25 42:17,24 43:15 44:2,17,24 45:4 46:5,24 48:4 48:20 49:15 50:9 53:8 54:21 55:15 56:6,16 57:3,9 58:5,6 59:10,22 60:5 61:2,12 62:17 63:21,22 64:14 65:3,18 67:22 68:11,22,22 70:9 70:10 71:13,20 72:5,19 74:11,12 75:8,17 76:3,11,21 77:14,15 78:15,16 79:4,5 80:2,13,14 81:20 82:18 83:2,9 84:4,19 85:6,22,23 86:6,7,18,19,25 87:13 88:11,25 90:18 91:1,13 93:19,20 94:4,15 95:6,7,21,22 96:9 96:10,17 97:13,14
C			
		C 3:2 193:1 305:1,1 CA 208:16,17 Cabrera 22:21 23:23 49:18 128:19,24 129:3 131:22 177:9 194:1 196:6,8,19 197:12 198:23 200:7 Cabrera's 181:12 calculated 90:25 95:4,8 calculation 196:17 California 11:20,21 302:22 call 23:5 97:16	

98:2 99:3,4,21 100:19 101:2,3,20 102:5,6,15 103:10 104:15 107:5,23 108:24 109:16,17 110:16 111:2,17 112:8,20 113:14 114:1,24,25 115:13 117:9 118:2 119:4,18,23 119:24 120:16,17 121:6 122:1,25 123:3 124:10,11 124:19 125:9,10 125:16 126:7,8,18 126:19 131:13 132:21 134:8,9 135:16 137:20 138:3,22 140:7 141:2,18 142:13 143:13,25 144:20 145:13,14 146:2 146:16 147:5 148:1,2,18,19 149:17 150:14,15 151:3,4,21 152:7,8 153:7,8,21,22 154:9,10,21 157:2 159:13 160:20 161:2,10 163:5,6 164:3,4 165:8,8 166:13 167:4,22 168:7,14 169:5,6 169:14 170:1,1,17 171:7 172:17 174:4,23,24 175:20 177:23 178:13 181:9,22 181:23 182:10 183:11 184:2,3,16 184:17 189:22,23 190:8,9 191:15 195:2,3 196:2,13 197:22,23 198:8,9 198:20,21 199:13	199:14 200:4 201:2,3,12,13 202:15,20 203:8 203:23,24 204:17 204:18 205:14,15 206:7,21 213:16 217:2,9,10 218:6,7 219:2 220:11 221:6 222:5,6,17 223:11 225:8,9 226:4,22 228:9,9 229:2,11,12 230:3 231:12,13 233:8 234:10,11,11 236:11,21 237:11 237:16,17 238:13 239:18,19 240:6 240:19,19 241:8,9 242:7,8 243:17,17 244:4,13,18 245:12 246:13 247:6,15 248:10 249:7,8 250:4,5,13 250:14 251:1,2 256:22 257:14,18 258:1,19 259:11 260:24,25 261:24 262:9,10 264:16 264:16 265:12 266:6,15 268:25 269:21 270:2,2 272:11,19 274:12 274:13 276:16 277:20,21 278:25 279:15 281:16 284:2,13 287:4,24 289:6 290:2,24 291:20 292:24 293:10,10 295:2 296:1,13 298:7,8 298:25 299:1,18 299:19,19 300:18 300:19 Calvin 3:25 Camacho 2:15	camera 290:14 295:11,11 cameraman 292:1 camp 227:23 camp s 219:25 227:1 227:6,12 228:6 cancer 6:16,19,24 196:10,11,19 197:6,7 198:17 199:2 200:9,15 201:9,15,17,20 202:2,9,13 203:2 203:13,13,15,15 203:16,21,25 204:4,9,14,22 205:3,10,12,23 cancers 201:1,5 capture 150:9 captured 57:15 car 227:8 228:24 229:10,15 carcinogen 111:19 111:24 112:3 carcinogens 205:21 care 84:10 254:15 careful 121:17,21 122:13 carefully 126:21 130:21,24 131:4,5 258:22 264:25 265:3,14 277:6 281:7 carry 59:15 70:7 186:25 carrying 39:10 79:2 cars 123:21 case 1:3 15:18 18:20 18:21 19:4,18,21 19:24 20:8,9 21:15 21:23 22:10 30:9 31:10 47:5 81:10 90:6 105:24 113:7 118:24 144:25 148:7 155:24 157:7 165:11	171:25 183:3 192:2 193:25 194:10,12 195:18 200:15 201:17 242:16 290:14 cases 11:4 17:19,21 54:5 57:13,16 62:1 103:19 107:11 120:8 125:19 154:4 198:17 199:2 201:15,24 201:24 202:2,9 203:13,15 215:2 233:25 245:10,20 245:21 246:25 247:12 catch 12:24 categories 48:24 128:9,11 142:3 200:22 303:6 category 203:5 catwalk 91:24 causation 299:2 cause 25:20 45:18 95:4,9,11 96:21 104:2 111:25 115:4 204:25 205:2 231:24 233:25 265:9,20 266:4,13 298:4 caused 21:20 25:9 102:24 170:15 197:7 205:21 212:4 241:12,16 243:8 298:15,16 causes 24:2,5 causing 41:17 45:21 234:18 cautioning 20:2 CA1069438-1068... 306:15 CBS 287:17 Central 43:9 105:10 112:17 113:2,7,22 232:24
---	--	---	---

certain 54:2 215:1	chemical 6:23 24:3	306:20 307:7,13	cleaning 122:11,12
certainly 16:15	60:13 61:4,5,6	Chevron-Texaco	cleanup 7:24 8:18
17:12 22:1 26:11	96:12,14 107:11	20:20,22 129:13	17:17 24:8,22,24
45:19 55:19 67:17	115:10,15 133:3,7	129:21 260:4,15	24:25 119:14,15
70:18 77:6 79:17	133:20,22,25	Chevron-Texaco's	120:10,24 121:13
83:16 95:11	134:15 135:4,5,24	255:22	121:15 129:22,23
118:20 126:10	136:3 138:14	Chicago 7:12	129:25 160:3,5
139:9 140:18	139:7 260:6	China 14:25 15:12	175:15,18,22
175:4 186:24	chemically 101:23	choice 291:1	176:1,13,21,24
214:20 219:5	chemicals 5:15,16	choose 98:5 110:23	177:5,6,14,25
227:14 234:16	5:21 9:1,21 11:15	chose 98:22 159:20	178:5,12,21 179:5
249:11 270:4	11:24 44:15,21	chosen 164:1	182:15 185:5,17
273:18 302:15	46:21 47:1 48:1,7	chronologically	185:20,21,23
CERTIFICATE	60:4,9,19 63:4,6	12:3	186:7 187:2,3
308:2	63:15,19 64:1,5	chunk 135:20	188:13 189:14,15
certification 253:20	65:6 70:6,7 79:2	circle 37:3,12 73:10	189:16,18,21
Certified 1:22,23	133:5 139:8 151:9	73:23 74:2 100:3,5	191:8,9,10,24
certify 305:2,4	151:10 216:21	157:6	192:5,7,13 214:7
308:4,9,14	229:17	circles 155:19	218:12,14 272:1,2
cetera 110:8	chemist 6:7	circumstances	273:25 274:1,5,25
CFO 13:23,24	chemistry 4:6,8,18	121:23	276:8,15,24,25
chance 188:19	6:9 70:11	cistern 231:7	277:10,15,25
200:14	Chevron 1:8 20:16	cited 108:3	307:11,13
change 14:6 15:5,7	21:17 28:14 53:10	city 31:14	clear 12:5 19:7
15:9 166:7 180:1	128:18 136:24	Civ 1:3	63:14 65:25 66:18
201:23	137:1 148:8,8	Civil 1:18 301:22	67:9 78:17 85:25
changed 93:2	149:2,7,8,14,24	claim 20:20 273:18	164:15 177:5
changes 273:10	150:4,20 152:5	claims 266:11	195:12 228:19,22
channel 250:23	153:2,10 154:5	clarification 136:11	clearly 51:19 109:25
251:6,8	165:5 167:11,15	303:14	click 73:9
chapter 252:21	168:1,5,21 195:14	clarify 159:9 303:5	client 302:4,6,10
255:19,23,25	195:18,22 206:13	303:10	clients 12:4,7,9,20
character 115:5	206:18 279:12	classes 5:8,11,24	13:5 176:9 252:16
Characteristic	282:14 301:24,25	classified 204:3	climate 14:6 15:5,7
178:18	302:5,13	clause 34:8 239:11	15:9
Characteristics	Chevron's 147:21	clean 10:9 17:20,22	clips 291:13
273:24	147:25 148:15,25	24:23 118:23	close 77:5,8 113:23
characterization	156:9 163:16,18	119:8 120:5 160:3	158:19 161:8
146:8	163:24 164:11,14	173:5 177:12,19	200:10 285:4
characterize 144:18	164:17 166:17	182:17 223:1	288:16
characterized 140:9	168:19 175:25	260:15 278:7,11	closed 62:5 171:12
220:21	194:2 195:15	278:16	171:18 245:8
characterizing	206:4,9 263:18	cleaned 179:2	closely 16:12
145:2	266:11 277:10,15	216:22 218:11	closer 149:5,10
charge 23:5 35:5	277:25 282:15	cleaner 183:23	164:17 168:23

200:13 201:10 270:8 294:21 closest 77:2,3 202:3 closeup 290:8 294:9 296:7 closing 62:8 clothes 237:3 CLT 308:22 coast 39:10,11 43:19 118:8 Coca 38:25 CODEL 307:4 Colegio 130:12 collect 23:19 69:22 70:13 129:17 149:2,5 164:23,24 166:5 168:21 collected 23:20,22 23:23 78:20 106:7 112:22 113:1 114:6,10 128:16 128:19,20 129:8 129:24 131:16 132:14 133:18,20 134:12 135:18 137:1 143:17 147:12,19,20 148:5 149:7 153:10 156:5,9,24 157:5,13 158:12 161:13,15,17 162:19,23 163:15 163:18,20,24 164:11,12,16 166:16,17,19,20 167:7,11,14 168:1 168:1,20,23 182:18 189:16 199:1 215:11,23 227:22 244:6 270:7 279:2 297:4 297:19 collecting 296:23 collection 61:5 164:20	collections 130:8 college 3:24,25 colon 224:5 color 37:18,21 41:21 54:25 254:5 Colorado 1:21,24 10:16 273:15 302:22 308:1,6,23 colored 37:3 colors 38:1 color-coded 37:8 column 136:12 142:1 190:12,12 191:12,18 192:4 192:10,19 193:4 193:12,15,20,21 193:23 194:7,7 195:13 285:12,15 columns 193:1 come 6:23 53:24 59:17 93:1 124:8 133:13 198:22 216:3,16 259:8 269:9 comes 31:10,24 40:10 42:2 49:17 49:25 89:11,14 90:3 106:8 113:17 113:19,22 148:25 192:12 193:24 194:1 206:10 291:24 292:2 295:14 297:16 coming 29:10 40:19 48:16 70:12 99:24 99:25 106:5 114:12,13 115:6,7 169:18 239:5 292:5 commencement 308:7 commencing 1:20 commission 305:25 308:20 common 26:8 82:22	communications 20:3 Communitaria 130:3 Como 285:25 companies 34:12 companion 204:20 company 6:6 10:13 10:15,15 12:6 13:6 13:16,17 119:1 209:15 229:8 282:14 compare 146:11,18 152:18 184:9 compared 14:15 88:19 148:8 172:19 183:23 203:16 221:7 compares 264:5 comparing 104:22 109:21 139:22 144:23 146:4,5,9 146:25 169:8 222:20 comparison 109:25 117:4 147:21,23 173:18 184:1 285:9 299:7 compelling 204:23 205:6 compensation 24:9 competence 134:5,6 134:22 competent 27:5 compiled 289:9 complain 112:1 complete 113:14 192:10,14,17 193:3 253:10 254:8,14 completed 127:17 192:21,23 completely 125:2,23 179:7 274:10 276:11	completeness 189:21 completion 238:8 compliance 86:4,23 213:23 214:2 234:3,9,14,19 complied 25:24 223:7 component 275:22 components 60:18 72:23 103:16,18 104:5 133:4 138:14,14 150:3,5 150:6,7,21,22 151:1 152:21 153:3 comport 94:20 comported 94:14 comports 243:15 composite 179:13 composition 96:12 96:14 107:11 compound 25:7 116:20 117:13 224:12 compounds 6:15 110:22 111:3,6,10 115:18 116:5 117:6,7,16 260:6 comprised 187:21 comprises 36:1 con 285:12 Concentracion 285:16 concentration 102:11 103:25 109:1 138:12 142:17,21 143:3 143:19 144:3,6,18 157:8,11,17 158:22,24 161:24 193:17 195:9 222:4 283:25 286:5 concentrations
---	---	---	--

102:7 108:7 115:5 115:23,25 117:15 144:13 178:16 182:23 185:6 188:13 193:15 222:15 260:5,18 283:13 285:10 concern 110:2,5 concerned 124:15 304:12 concerning 130:17 253:21 262:4 concession 21:20 25:4,14,14,24 30:23 32:6,9 33:1 37:2 38:5 42:23 43:24 47:13,16,23 49:20 60:24,25 61:11 62:13 69:7 82:12,17 86:17 93:11 113:24 138:19 159:23 190:17 198:25 199:18,19,20 203:3 207:2,13 220:19 232:6 242:1 243:9 255:11,15,20 257:8,25 258:7 268:1 275:18 280:3 288:12,16 300:14 concessions 26:15 conclude 134:10 135:8 176:20 189:19 concluded 48:6 168:9 178:11 245:3 251:18 299:8 300:6 conclusion 25:18,20 25:23 26:4 78:18 109:17 172:3 222:6,11 241:4 250:19 261:20	278:18 299:20 conclusions 7:21 23:14 25:2,12 26:13,21 175:20 190:1 205:3 234:11 251:21 259:20,21 262:7 262:14 299:3 concoction 59:13 condition 299:15,25 conditions 219:23 219:24 275:5 276:5 conduct 192:5 conducted 22:21 24:6 100:23 112:25 128:14 129:20,23 133:21 134:13 172:19 175:1 176:2 177:7 178:21 183:20 187:2 207:1,13 214:13 218:11 228:1,4 conducting 11:1 14:4 26:9 177:25 confidence 283:9 confidential 207:23 208:24 confined 245:9,21 confines 243:23 244:2,7 confirm 215:16 confirmatory 182:8 182:21 confirms 278:15 Congratulations 4:15 congressional 270:25 271:1 connected 157:6 161:14 Connecticut 2:4,18 connection 175:18 187:5	connects 40:13 Connor 282:8,12,13 282:17 284:9 307:18 consent 302:4 consider 52:3 128:24 129:4 152:12 consideration 91:8 considered 24:24 117:1 120:14 145:23 consistent 62:15 126:15 213:13,14 213:18 215:25 216:24 217:4 228:5,11 230:1 232:10 237:14,19 237:22 238:11 242:4 243:19 247:1,8,13,17,18 249:4,10,13 300:25 consistently 61:17 consortium 34:9,12 34:15 214:13 219:15 234:2 constitutes 308:12 constructed 56:23 64:11,12 66:9 67:19 83:12 consultants 273:14 consulting 10:15,15 11:5,19 12:6,7 14:1,2 18:12 20:12 22:2,11 30:5 189:1 209:15 262:24 266:22 273:15 282:14 306:18 contact 70:1,6 100:8 111:7 124:8,17 287:13,15 contacted 287:12 contain 44:15,21 46:21 48:7 54:10	60:3 77:12 215:10 245:8 293:23 contained 48:1 89:14 101:18 103:5 108:19 110:1 142:12 187:13 188:7 218:3 260:7 262:7 containing 233:4 contains 45:17 131:10 271:15 contaminant 9:6 contaminants 78:6 243:23 244:1 248:19 249:2 260:18 275:3 contaminate 61:20 71:12,18 84:14,25 86:11,15 96:2 107:8 contaminated 9:2,9 11:14,23 15:23 24:23 25:3,13 26:15 27:1 44:10 48:25 56:20 74:16 76:1,5,18 77:13,18 78:5,12,18,25 80:1 80:11,16,18 81:3 81:10 82:3 83:18 95:19 166:1 174:13 175:4,4,6,9 260:4,14 275:11 contaminating 16:18 contamination 16:5 16:8,17 17:9,14,23 18:3,7 21:18 23:17 23:18 24:1,2,3,5,7 24:10,14,20 25:10 25:21 41:17 48:12 49:3,6 65:6 72:22 78:21 79:9,11,16 79:18,20 80:8,12 80:21 81:7,18,19 83:7 84:10,13
--	--	---	--

89:13 94:22 96:7 115:5 117:24,25 118:4 119:9 126:1 127:7,19,22,25 128:3,8 130:18 138:5 139:22,23 141:16 142:3,25 145:8,19,23,25 148:6,9,10,14,16 150:10 152:15 154:1 164:14,25 165:14,19 166:4 168:18 169:17 170:14,21,24,25 171:4,14,15,19 172:4,7 173:20,23 174:2,7,14,21,21 175:10 177:12 182:20 184:5 202:24 211:17 212:4,10 215:12 215:13 216:3 217:19,24 218:4 218:10,25 219:8 222:20,22,23 223:7,9,18 233:25 237:1 243:8,10 244:8 247:11 250:10,17,23 251:15,19 255:9 257:4,7,23 260:9 260:16 266:2 269:12,19 270:4,5 270:6,9 274:10,25 275:25 280:2 289:9,12 291:11 293:5,5 298:5 299:9 300:8 307:16 content 96:22,25,25 97:2 102:22,24 103:16,24 104:23 108:1,7 109:5 219:7,7 263:4,12 263:25 264:13	266:18 272:3,9,10 272:15 273:5 274:23 280:17 281:2,3 contents 68:4 74:10 74:21 78:7 255:24 280:4 context 152:3 211:21 213:17 214:19 258:7 284:14 285:23 continue 131:8 155:11 227:20 294:15 296:19 297:12,22 299:17 300:2 continued 173:7,25 continuing 231:15 292:13 contract 17:1,3 32:12 191:9 contracted 282:14 contractor 129:21 186:10 contractors 33:13 contracts 21:25 contribute 79:19 80:21 contributed 170:16 205:9,22 299:9 contribution 13:12 control 8:8 88:15,24 136:22 controls 256:8 convenient 304:11 conversation 254:20 conveyed 35:19 cooling 14:6 coordinates 156:8 copied 193:7 203:9 235:6 copies 209:9 copy 27:15,16,19 28:13,18 186:17 192:24 193:6	207:22 235:4 252:21,24,25 254:5,8,8,8,9,14 254:17 255:5 corner 31:12 50:7 58:4 68:8,9 281:25 282:7 CORPORATION 1:8 correct 13:1 16:6 19:9,22 20:10 30:3 33:23 36:12 37:19 37:22 38:3 50:14 50:15 67:11 80:1 87:2 101:16 107:21 108:14 110:18 113:18,25 130:6 138:25 139:1,3 154:11 164:20,21 166:8,9 185:15 188:2 194:22 224:1,2 225:20 235:11,13 255:13,13 261:19 264:23 269:5 271:17 275:21 284:22,24 303:3 304:8 308:13 Correction 305:7 corrections 305:6 correctly 286:4 correlation 133:14 correspondent 71:7 287:19 288:4,5,17 288:21 290:15,20 291:7,22 292:8,20 294:19 correspondents 287:17 Corte 253:7 cost 12:18 17:14,17 17:20,22 198:1 counsel 186:18 301:16 302:2,5,13 302:25 304:1,3	308:15 count 49:25 180:17 180:19 231:14 counteract 206:19 counties 31:7 country 8:19 141:9 counts 33:13 COUNTY 308:3 couple 92:1,3 100:23 103:17 159:9 261:14 294:20 course 9:18 43:23 52:17 53:21 55:11 60:23 63:24 82:6 85:18 97:6 118:8 123:4 130:16 138:17 144:12 171:16 180:4 187:13 209:3 213:14 214:1 230:13 232:20 239:5 241:3 302:6 court 1:1 22:4,5,6,8 22:23 131:21 135:2 166:19 193:25 253:22 254:4,10,17,19,24 255:2,5 282:1,2,2 284:9 304:9 courtesy 301:4 court-appointed 23:23 cover 30:1 188:21 194:20 covered 58:14 216:22 293:16 covering 69:20 covers 255:13 Craig 2:9 208:9 create 276:1 credit 273:18 creek 292:4,5,7 creeks 213:3,13 232:3,5,13
--	--	--	--

creosote 9:5
criteria 285:10
crossings 76:23
cross-examination
 301:14,17,23
 302:17 303:13
crouching 292:8
CRR 308:22
crude 39:11 40:1,10
 40:16 42:4,8 43:12
 43:17 44:14 45:16
 45:16 46:2 50:24
 50:25 90:9 135:21
 144:12 215:12,24
 216:1,6,11,14,15
 240:4,10 260:7
 276:12
Crutcher 302:22
csmyser@skv.com
 2:13
cum 4:11
curious 186:7
current 19:5,21
 44:11 213:23
 214:2
currently 13:20
 16:25 82:22 85:16
curves 51:23
cut 59:16 235:8,9
 236:2
cuttings 59:15
CVX-RICO 67:15
CVX-RICO-1021...
 307:19
CVX-RICO-2026...
 306:13
CVX-RICO-2196...
 306:17
CVX-RICO-2201...
 306:21
CVX-RICO-2201...
 307:16
CVX-RICO-2202...
 307:14
CVX-RICO-2202...

307:9
CVX-RICO-2204...
 307:12
CVX-RICO-2207...
 306:24
CVX-RICO-2268...
 29:6
CVX-RICO-2268...
 306:12

D

D 2:10 3:2 306:1
damage 12:16
 248:17,25
damages 11:9 17:19
 17:20
damaging 46:4,8
danger 104:17,20
 105:2 117:8 124:8
dangerous 47:2 48:2
 217:22,25 218:16
dangers 47:11
 104:14
dark 41:21 43:13
 109:13
data 23:16,19,20,21
 23:22,22,24,25
 45:7,13,20 47:6,11
 47:19,20,21,22
 57:4 61:6 70:11,20
 78:20 79:8,15,18
 96:11,13 97:3
 101:22 102:19,21
 103:12 104:22
 107:25 108:3
 109:25 111:4
 112:5,16,21,22
 113:4 114:3,16
 116:8,19 126:12
 127:7,21,25 128:2
 128:7,8,16,18,19
 128:20 129:8,17
 129:24 130:8,10
 130:16,17,20,25
 131:1,2,3,5,16

132:11,14 139:21
 142:16 147:9,9,18
 147:19,20,22
 148:20,23,25,25
 149:13 151:25
 156:10,11 157:5
 158:9,17 159:1,9
 164:8,10,11,13,14
 166:14,15,15,17
 166:18 167:17,19
 168:4,19,19
 173:20 175:11
 181:10 182:22
 183:2,14,16,22
 184:10 185:10
 187:12,17,17,21
 188:5 189:15
 193:21 195:20
 198:22 200:6,12
 201:9,14 202:22
 202:24 203:13
 204:21 206:19
 218:19,22 219:4,4
 221:7 228:14,15
 230:6 243:19
 244:6 257:2 258:5
 258:6,22,25 259:7
 259:8,9,15 260:11
 260:14 276:23,25
 279:2,3 280:2
 281:14 284:16,18
 284:20,21 285:1,3
 289:8,11 291:9
 299:7 307:15
database 132:14
 203:15 269:7,9
date 3:3 28:1 106:25
 155:15 304:2,10
dates 49:21
day 58:23 106:21
 290:7 292:7
 295:22 305:23
 308:19
days 76:15 138:10
day-to-day 23:6

34:6 35:4
de 36:5 107:18
 130:3 253:7
dead 97:17
deal 11:11,14
 121:14 137:8
 196:10 217:7
dealing 96:24
dealt 16:16 85:13
 217:5
death 196:11
deaths 196:10,19
 197:6,7
decades 20:21 84:2
 249:13
decided 20:7 177:19
deciding 8:1
decision 129:1 178:5
 220:25 221:9
 266:25
decisions 35:1,7,15
declare 182:16
declined 19:20
decrease 153:20
decree 214:15 224:4
 224:7,18
deep 158:21 172:23
 294:24
defendant 19:24
 20:9
Defendants 1:12,19
 2:14
Defensa 36:5
define 13:14 267:11
defined 199:5
 278:11
defining 136:17
definitely 165:16,19
definition 8:14
 248:9
definitions 8:14
Degrade 119:20
degrades 119:21
degree 4:7,10,17 5:6
 7:6,8 134:21 257:6

257:23	deposed 302:11	192:1,6	difference 54:24
del 282:8 307:18	deposition 1:5,18	designed 83:7 84:24	149:13 168:18
delegation 270:25	301:25 302:23	86:11,15 231:6	173:1 174:12
271:1	303:12 304:11	despoiled 20:22	183:22 184:8
delicate 221:3	308:9	detail 71:4 73:2	differences 82:24
delineated 260:10	depositions 304:2	detect 118:18 173:4	83:1,4 115:3
Demandante 162:19	depth 90:16 131:7	Detectada 285:16	148:24 149:16
166:16	157:12,16,20,22	detected 153:3	164:10
Demandantes 164:2	158:11,20	163:23 285:9	different 8:13 12:8
167:2 168:19	describe 21:4,13	286:5	18:9 28:10 37:5,6
194:3	40:2 49:4 59:1	detections 163:20	48:24 49:21 51:1
Dematteis 50:13,17	85:24 120:1,9,10	determination	51:18 60:12 61:21
50:18	121:10,12 122:6	78:14	74:15 88:3 89:10
demonstrate 72:18	123:9 165:13	determine 42:22	90:15,21 91:18
demonstrates 278:6	211:12,13 267:22	47:25 66:8 78:11	115:4 120:4
Denver 1:21 302:22	268:8	82:14 85:19 88:5	124:23 130:6,7,9
308:3,23	described 14:3	97:8 121:3 123:5	133:3 142:16
Department 12:14	45:10 62:16	140:3 152:13	150:1,1 158:18
17:5	104:14,18 109:10	159:20 164:24	163:14,16 176:25
depend 102:11	118:20 129:10,15	165:25 189:9	178:4 183:15
223:2	224:19 243:1	222:15 223:7	190:17 191:2,2
depending 62:6	245:20,22 272:14	273:3,25 274:24	200:8,22 235:25
83:23 120:22	273:7 298:4	297:10	284:18
223:17	describes 45:8 49:22	determined 35:2	differently 259:6
depends 83:11	67:25 129:22	247:22 248:5	difficult 146:7
102:7 134:11,12	171:23 198:23	determines 304:9	difficulty 154:15
140:12 146:4	232:14 267:24	determining 16:13	direct 46:18 164:23
150:17 151:5	268:20 270:23	develop 55:12 63:4	219:11 246:2
165:24 222:8	271:25 273:2	developed 17:8,13	253:3 254:16
223:13	276:23	17:24,25 23:24	directed 165:4
depict 98:17 118:10	describing 40:8	24:4 62:19,24	directing 165:3
depicted 76:17 79:1	56:19 64:6 191:23	84:15,15 94:24	230:20
81:11 91:23 97:24	196:17 257:2	172:2 234:17	direction 271:11
157:12	292:2,22 293:3	242:19 277:5	280:6
depicting 75:18 98:4	description 21:6	developing 57:14	directions 156:15
157:4 163:15	49:2 57:21 122:5	development 11:23	directly 41:1,14
depiction 98:25	132:23 256:7	51:2 58:16 139:4	42:10,16 43:4
depicts 40:7 78:6	292:14 306:9	171:5,21 172:5,9	98:19 228:13
100:6	307:2	173:11 242:3	235:7 239:17,22
deponent 2:20 73:5	descriptions 41:10	243:7	directors 13:25
73:7,11,14 74:3,6	45:9 56:8,10 59:24	diagram 92:13	dirt 55:2,23 120:1
89:2 92:6,15	63:24 75:2 122:16	dialogue 70:23	120:13 121:10
162:16 180:2,5	designated 8:16	diameter 68:18	123:10,25 124:25
221:20,23 301:12	22:3,8	105:13	178:1 240:10
308:8	designation 191:22	diesel 286:1,6	disagree 241:4

302:19	88:23 90:2,6 92:19	272:10 273:2,4,8	267:24 270:23
discharge 76:7	93:17 228:2 237:9	273:20 275:20	272:7 273:9 277:6
77:13 94:12 95:17	263:19 265:7,10	276:23 277:5,9	281:10 287:14,15
97:11,19 98:25	298:3 306:21	279:9,10 280:1,4	306:16,22
106:24 125:5	dispose 35:8 63:25	280:16,21 281:2,6	Donziger's 266:25
217:21 219:9	72:13 238:19	281:13,25 284:3	dot 158:10,18
227:23 228:17	264:7	285:23 303:3,11	161:14 283:24
229:9,15 237:21	disposed 62:12,14	documentation	dots 156:1,3 158:16
239:4,16 247:11	63:19 64:5 85:14	67:25 242:16	284:5
250:10,17,24	233:5 238:9,9,17	268:6	dotted 143:5,7
251:6,8 256:8	disposing 90:7	documented 112:2	double 192:16
298:23	dissolve 115:17	173:1 266:2	Douglas 1:5,19 3:8
discharged 27:4	distance 200:1	documents 28:10	3:19 273:13 305:2
75:15 81:13 94:7	distances 156:18	33:10,11 34:5,11	305:21
96:4 98:9,10,14	distill 212:5	35:11 40:25 41:12	downstream 70:14
101:25 105:16,23	distinction 219:20	64:4,6 65:24,25	77:22,25 80:22
107:14 110:1,5,15	distinguished	66:17 67:8 74:23	103:21 104:1
111:9 213:3,13	246:17	84:21 85:1,24	216:4,15,15
232:9,16,19	DISTRICT 1:1,2	87:24,25 100:20	291:24
236:18 239:8	ditches 227:23	100:22 119:7,13	dozen 48:13
246:24 299:4	diverse 220:21	119:25 121:12,18	Dr 273:8,14,19,22
discharges 76:18	diversity 220:8	121:22 122:3,7,8	draft 267:8
77:18 80:16,19	221:17	172:21 178:20	drafting 267:12
213:22 236:6	diverted 227:21	191:23 192:13	drag 74:5
238:1	232:8	208:10 210:1,5,21	drainage 54:7 75:23
discharging 77:4	divulge 20:3	240:11 274:4	292:3
95:2 98:19 99:7	dizziness 111:20	280:16 303:3,6,21	draining 296:10,12
113:12 219:6	112:2	doing 6:9 76:13	drains 227:9,9
disclose 145:11	document 28:3,7,13	85:16 102:18	229:10 295:14
discuss 20:11	29:11 30:17 67:13	125:20 130:17	296:15
128:21 287:17	88:9 129:22	145:6 160:5	dramatic 168:18
discussed 30:8	167:13 183:11	163:16 177:25	201:23
107:1 131:1	189:9 190:1	178:2 187:13	draw 73:9,13 179:3
138:15 161:9	192:25 193:8	195:15 214:6	179:21
175:14 177:17	200:4 210:1,3,4,6	222:21,22,24	drawing 235:19
180:14 254:13,18	210:8,9,16,22	223:2 244:2 287:1	drill 33:1 55:22
264:9 286:11	211:21 212:14,15	289:19 290:11	59:15 60:21 93:10
discussing 187:7	213:10 219:14	dollar 196:18	173:7 211:18
188:12 291:6	224:14,19 235:3,4	197:25 198:1,5	drilled 33:5,5,17
discussion 127:24	235:7 245:13	Donziger 1:14 27:24	172:2 173:8
disk 93:7 127:14	253:21 254:23	209:25 210:10	300:17
180:11 230:18	260:1 261:4,10	211:24,25 230:21	drilling 37:10 55:3,5
disposal 59:8 61:9	262:23,25 263:1,2	235:12,22 236:2	55:8,14,21 57:13
64:18 71:24 72:4	264:3 268:2,5	244:17 246:2	58:16 59:8,8,12,14
85:20 86:1,12,16	271:25 272:3,4,6	251:12,17 263:1	59:17,18 60:1,3,10

60:12,14,14,25 61:7,9,11,19 62:12 62:20,25 74:15 75:5 85:17 171:4 171:20 172:5,8 173:8,10 214:12 233:4,15 drink 104:7 drinking 80:25 81:2 112:11 115:21 117:18 236:14,15 237:5 299:8 driving 76:24 DRO 285:25,25 drop 243:4 drops 201:21 202:6 due 24:9 dug 64:19 duly 3:9 308:8 dump 43:4 84:8 dumped 9:1,10 42:8 42:16 51:3 57:19 58:15 60:2 68:4 72:8 102:2 103:20 165:18 228:13 233:14 239:22 dumping 43:2 46:19 77:7 84:11 103:22 120:13 172:24 229:19 dumps 83:19 Dunn 2:2 302:21 duration 248:19 249:2,11 dust 240:11 dying 198:4 D.C 2:4 D.E.E 282:8	129:16 138:10 175:14 183:7 187:19 196:7 215:21 217:12 232:25 233:13 240:9 254:14,18 258:8 261:14 280:7 284:12 286:3 early 26:8 49:22 84:8 88:14 115:2 198:4 258:4 earth 64:10 earthen 51:20 easier 54:25 63:13 162:17 224:15 east 38:19 156:15 eastern 220:15 Eastman 6:6,18 east-west 39:9 easy 73:15 236:1 eating 271:14 ecological 5:17 7:23 8:5 10:1 110:3 221:18 ecologist 7:19 ecology 96:20 economically 16:14 economics 16:9 economists 16:12 ecosystems 141:7 221:15 ecotoxicology 5:12 5:14,19 Ecuador 18:13 20:13,16,17,19 21:18,21 22:17,20 26:10 30:12,21,22 31:6,8 32:13,21,24 34:2,13 35:24 43:20 65:21 74:23 82:21 83:6 91:17 94:13 95:3 108:22 112:25 123:16,17 137:18,23 141:1	149:21 152:19 159:22 163:4 169:3 176:6 220:15,16,23 223:19 229:10 234:20 253:1 254:10 255:11 263:19 264:8 268:12 287:2 288:3,4,12,20 291:16 299:16 300:2,10 307:4,11 Ecuadorian 21:16 22:4,5,6,12 43:21 109:4,14,21,25 137:15 139:24 141:6 143:6,11 145:1 146:5,19,19 154:8 159:16 166:23 167:2,3 169:8 217:21 218:5 221:1 234:4 234:9 278:12 279:2 284:12 298:5 301:20 Ecuadorians 19:21 Ecuador's 95:19 edge 158:19 294:21 edges 51:21 66:14 edited 267:9 education 4:18 17:7 262:3 effect 5:20 25:25 86:24 103:7 effectively 149:22 276:15 Effectiveness 307:11 effects 5:21 111:25 efficacy 184:13 189:20 276:14 effluent 231:8 effort 206:19 211:10 212:5,13 241:20 efforts 120:24 121:4	219:8 260:15 either 9:1 11:4 42:10 60:20 70:14 74:17 113:23 126:5 132:12 134:21 140:23 164:23 169:18 174:8 179:23 184:6 193:25 209:18 227:21 232:23 293:4 EI 38:25 electronic 235:5,18 235:20 electroplating 9:8 element 233:20,21 elicit 30:16 eliciting 18:19 eliminated 176:3 eliminating 218:24 elimination 184:14 ELLMAN 2:16 employed 308:15 emptied 226:18 empties 75:22 emulsion 276:2 enabled 78:13 encountered 54:11 endemic 220:22 ends 79:11 Energy 279:2 engaged 240:15 engines 282:19 English 253:22 enter 127:20 enters 292:3 entire 49:20 69:7 189:8 212:14,15 entitled 30:5 107:17 132:19 147:2 198:17 280:1 304:9 entity 34:2 entry 226:13 environment 5:17
E			
E 2:3 3:2,2 305:1,1 306:1 earlier 15:20,21 59:2 66:17 67:8 82:24 98:7 107:1			

11:7 16:8,11 17:9 17:11,12,15 18:3 20:23 21:19 25:3 25:12 41:6,11 44:15,16 45:3,14 45:18 46:4,8 47:3 48:3,8,25 49:5 56:21 61:20 70:8 71:12,19 72:24 83:7,19 84:25 95:5 95:20 103:20 107:9 111:9 119:17 120:11 121:1,5,25 122:11 124:16 135:22 136:2 145:25 146:21 212:10 215:2,4 217:22 218:1,16,25 219:6 221:4 231:25 246:24 251:19 256:9 260:19 298:15 environmental 5:2 5:11,13 7:11 11:1 12:9 13:2,3 14:2,4 14:5,13,15,16,20 14:24 15:11 16:4 16:21 17:1,19,22 18:1,6 21:18 23:17 25:21 33:12 84:12 84:23 89:13 94:9 94:21 95:4,9 103:5 103:7 104:2 114:21 124:14 128:19,20 129:17 133:1 144:16 145:7 164:25 169:4 197:17,21 214:11,15,16,23 219:14 222:14 229:5 231:10 234:19 248:17,25 256:8 257:3,6,23 261:22 275:16	280:2 298:4 299:4 299:7 307:15 environmentally 229:20 231:24 EPA 8:17,22 9:18 9:20,23 10:12 12:15,17,19 14:10 15:24 105:1 107:13 112:6,10 115:21 116:12,22 117:18 275:16,25 299:8 EPA's 104:23 Epidemiologia 130:3 epidemiological 197:11 equal 248:8 equipment 55:1,23 232:7,23 equivalent 32:11 error 262:8 ES 189:5 escaped 119:16 Esmeraldas 43:13 43:19 especially 76:15 84:13 111:14 301:23 Esq 2:3,3,9,10,17 essence 35:5 86:10 87:24 essentially 13:3 42:9 60:15 91:6 106:6 108:1 114:14 133:22 171:11,18 174:12 175:2 182:19 184:8 189:17 192:2 242:2 establish 56:3 established 146:20 154:8 221:1 estimates 11:9 197:5	et 1:11,14 110:8 112:23 ethylbenzene 110:22,24 116:2 116:15,25 EU 15:1,12 evaluate 17:22 23:16 183:15 234:16 307:11 evaluating 16:7,10 17:8,17 222:3 274:9 276:14 evaluation 175:18 219:17,18 258:5 evaluations 145:17 evaporates 69:24 evaporation 227:24 evenly 38:4 events 122:5,15 eventually 38:19 75:23 84:12 106:12,15 213:3 213:12 287:16 evidence 66:14 82:2 195:8,17 206:4,11 206:19 211:8 230:6 237:25 238:20,22,24 239:15,21 269:12 276:23 278:6,15 278:22 279:1 299:2 evidenced 264:1 exact 28:7 160:14 209:9 exactly 24:3 33:15 91:9 179:20 196:24 235:23 263:2 273:21 280:10,14 281:11 Examen 193:25 examination 3:11 62:11 218:3 228:6 306:2 308:7 examine 47:10	examined 3:9 examining 139:13 206:20 example 10:9 16:24 37:9 51:12 71:8 75:20 112:2 151:7 198:3 223:16 268:10 examples 194:15,24 195:5 257:6,22 exceed 115:23 147:14,15,19 148:7 153:13 163:4 179:5 181:18 275:11 exceeded 109:14 140:5 147:12 154:7 exceeds 109:13 117:18 194:25 exception 180:23 305:6 excess 148:14 153:4 169:3 196:19 197:6 240:12 exclude 152:5 excluded 9:15 excluding 150:12 153:2 excuse 37:15 66:23 90:12 129:7 211:16 244:15 279:7 executive 13:22 189:4 exemplar 52:4 exemplars 257:17 exhibit 27:12,13 186:13,15 188:17 207:16,18 208:6,7 208:10,11 209:20 209:22,23 211:8,9 211:9 252:3,5 262:19,21 267:16 270:11,18 271:19
--	--	---	---

271:20,22 272:23 276:19,21,21 279:18 281:19,21 306:11,13,14,16 306:18,19,22 307:4,7,10,13,15 307:17 exhibits 217:24 306:7 exist 11:18 expect 46:7 114:11 114:21 118:25 204:6 expectation 46:2 77:11 expectations 91:17 expected 134:18,19 153:17 experience 17:7 45:15,24,25 51:13 69:11 71:17 74:22 76:7 77:11 81:16 94:11 98:23 120:12 123:10 134:4 144:17 223:17 225:4 231:9 262:3 expert 11:4,4,5 14:12 18:19,19,20 18:21 19:2,18,20 20:7 21:23 22:1,2 22:3,7,11 23:23 25:6 30:16 31:4,17 32:7 33:2,21 34:18 35:9,20 36:21 38:16 40:5 41:8,25 42:17,24 43:15 44:2,17,24 45:4 46:5,24 48:4,20 50:9 53:8 54:21 55:15 56:6,16 57:3 57:9 58:5 59:10,22 60:5 61:2,12 62:17 63:21,22 64:14 65:3,18 67:22	68:11,22 70:4,9 71:13,20 72:6,19 74:11 75:8,17 76:3 77:15 78:10,15 79:5 80:2,13 81:20 82:18 83:2,9 84:4 84:19 85:6,22 86:6 86:18,25 88:11,25 90:18 91:1,13 93:19 94:4,15 95:6 95:21 96:9,17 97:13 99:3,21 100:19 101:2,20 102:5,15 103:10 104:15 107:5,23 108:24 109:16 110:16 111:2,17 112:8 114:25 115:13 117:9 118:2 119:24 120:17 122:25 123:3 124:10,19 125:9,16 126:7,18 131:13,22 132:21 134:8 135:2,16 137:20 138:3,23 140:7 141:3,18 142:13 143:13,25 144:20 145:15 146:2,17 147:5 148:1,19 149:17 150:14 151:3 152:8 153:7,22 154:10,21 157:2 159:13 161:10 163:5 164:4 165:9 166:13,19 167:4 168:7,14 169:5,14 170:1 171:7 172:17 174:4,23 175:20 177:23 178:13 181:9,23 182:10 183:11 184:2,16 189:22 190:9 191:15	194:1 195:2,23 196:13 197:22 198:9,20 199:14 200:4 201:2,12 202:16,20 203:23 204:17 205:14 206:7 217:9 218:7 219:2 222:5 225:8 226:5 228:10 229:11,22 230:3 231:12 234:10 237:17 239:19 240:20 241:9 242:8 243:17 244:4 249:8 250:5 250:14 251:2 260:25 262:9 264:17 268:25 269:21 270:3 272:19 274:12 276:16 277:21 290:3 293:10 296:1 298:7,25 299:6,18 300:18 expertise 17:8,12,13 17:24 18:1,23 experts 128:18,19 147:20,21,25 156:5,9 162:19,20 163:16,18,24 164:11,12 165:12 166:16,18 167:8 168:2,21,23 194:2 194:4 195:15 270:7 282:15 expired 301:4 expires 305:25 308:20 explain 99:23 103:9 153:6 154:17 166:10 171:6 177:19 182:8 200:1 247:24 explaining 190:4 explanation 148:17	explode 155:14 exploration 11:16 20:21 260:3 exploratory 214:12 exposed 80:22 81:4 112:1 124:1,22,25 126:1 203:18,18 203:22 204:2,2,7,7 204:22 205:13 260:18 exposure 124:6 197:8 205:21 299:9,10 expressed 138:11 extend 158:25 301:21 extended 199:6 extending 81:13 extensive 248:18 249:1,14 301:14 extent 18:17,18 24:1 39:13 53:7 68:10 75:7 99:20 111:1 118:1 124:18 125:15 132:20 135:15 166:12 169:13 172:16 175:19 177:23 181:8 183:10 191:14 200:3 260:9 265:7 extra 186:17 extract 11:24 150:1 extracts 149:22 eyeball 39:20 179:22 eyeballing 158:1 eyes 19:13 80:9 218:10 e-mail 209:24 306:16 E-1 211:6 E-2 213:1
F			

F 305:1	falls 69:18,21 179:21	32:20 34:7,14 35:2 35:5,24 39:11 40:9 41:15 42:5,6 47:7 47:8,20,21 48:7 58:11 61:7 65:20 99:17 111:5 126:2 127:4 133:24 144:4,18 155:6 171:10 172:20 190:6,18,20 208:21 219:19 228:23 233:12 234:2 241:11 243:7 263:19 264:7 266:11 300:25	fine 3:16 89:19 286:16 finish 259:22 finished 55:7,21 182:17 272:2 273:4 fire 40:23 125:18,20 firm 74:4 first 3:9 6:5 7:10 19:13 29:20,21 30:4 32:2 41:13 49:3,10,10 56:21 57:13 64:22 71:25 72:2 93:10,13 103:12 104:17 129:14 137:15 156:25 157:4,20 157:21 171:22 176:4 189:3 210:1 210:22 213:1 215:9 219:13 222:19 223:4 236:4 243:5 245:7 259:22 265:6 267:8,12 273:12 274:22 276:7 277:14 278:17 284:10 285:18 287:11,13 firsthand 123:11 Fisco-Misional 130:12 fish 11:21 12:12,13 15:14 16:1 17:3 96:22 97:16,17 103:25 104:7 Fitt 2:3 five 48:24 49:2 180:11 230:18 fix 7:24 fixtures 155:2 flame 40:18 flare 40:22 41:18 flares 40:25 flaring 41:6,10,16
face 290:19,20 291:2,2 292:18,18 face-to-face 290:15 291:5 facilities 211:18 213:2,22 214:2,5,6 214:7 215:1 219:24 228:1 236:25 238:22 facility 9:9,11 62:8 72:11 106:7,8 213:4,5,21 facsimile 234:24 fact 17:20 19:4 20:6 22:15 32:15 45:21 84:11 97:9 110:4 114:16 116:8 131:1 177:13 273:23 293:5 303:17 factors 61:24 facts 20:24 21:24 87:14 159:24 160:19 163:6 195:3 219:2 228:9 243:16 251:23 256:11 265:11 270:2 287:9 289:12 factual 301:24 fact-to-face 291:8 failure 215:14 fair 11:8 12:15 14:9 21:6 29:15 63:1 87:18 95:14 121:21 154:14 179:23 188:17 190:2 240:23 254:2 256:2 264:10 271:18 fairly 12:5 115:16 116:6 140:15 243:2 258:4 fallen 293:17 294:13	familiar 9:19,23 10:2 18:8,10 29:7 29:12 39:18 99:24 99:25 233:22 familiarity 223:13 families 198:18 199:8,10,11,23 201:10,18,20 202:4,7,14 family 116:5,18 198:18 199:2,5,5,6 199:6 200:1,10,11 200:13,14,21 201:16,18 202:1,9 far 68:8 156:18 196:1,4 200:20 214:8 269:4,7,8 288:23 farther 149:9 157:10 168:22 201:10 202:5 241:14 farthest 144:5,13 190:16 fast 99:11 119:2 faster 99:12 fauna 220:22 224:23 225:6,18 Fax 2:5,12,19 FDA 36:5 feature 89:16 features 69:23 91:15 federal 1:17 11:2 12:11 14:7 18:9 301:22 fee 303:18,19 feed 212:18 feel 27:3 39:20 145:11 feet 105:13 124:2,7 156:16 fell 161:1 field 11:20,23 26:7	fields 37:6 41:11 190:16,17 219:15 264:6 266:3 fifth 279:12 figure 39:10 77:8 78:17 89:17,20 92:16 103:4 113:10 116:22 figures 281:8 figuring 154:15 filed 21:17 22:16,20 22:21,23 254:10 254:19,23 255:1 259:10 260:23 files 255:5 filing 253:22 fill 68:2 fills 83:18 filming 287:23 288:2,4 294:3 financial 13:12 23:8 find 138:2 141:15 142:2 170:24 205:3 222:21,22 222:24 237:25 finding 174:20 269:24 findings 235:24 236:3	

floating 50:24 51:24	form 62:13 81:17,23	169:25 171:8	fraction 151:14
floor 227:9	95:16 125:24	174:24 178:14	fractions 151:11,17
flora 220:22 224:23	168:4,10,13 169:1	179:8 181:24	153:12,13
225:6,18	202:11 205:10	184:3,18 185:8	Frankly 302:11,14
Florida 17:4	225:4,25 229:7	189:23 191:16,21	free 6:13
flow 63:12,13	234:5 241:2	198:10,21 199:14	fresh 55:23
216:11 232:5	300:22 308:12	201:3,13 203:7,24	freshly 55:2
243:11	Formacion 107:19	204:18 205:15	freshwater 97:1,4
flowing 42:11 99:11	format 277:3,4,4,5	215:7,19 216:8	104:19
99:12 106:4	280:8,9	217:3,10 218:7	Friday 1:20
216:14,14	formation 42:4 90:5	220:12 221:6	front 27:20 253:4
flows 38:19 69:20	90:16,21,22,24	225:9 226:5	Fugro 212:15
70:7 77:24 231:6	107:20 110:14	227:13 228:8	Fugro-McClelland
292:3	265:7,10	229:1,12 231:13	108:4,9 129:15
fluids 238:8	formats 263:10	232:12 234:12	208:20 209:12
focus 4:24 5:24 6:8	formatting 262:25	236:22 237:17	210:3,8,11,23
6:21 8:4 10:25	263:3,5	238:14 239:19	full 3:17 260:9
16:10 79:22	formed 11:19 12:24	240:7,20 242:9	fully 301:9
110:23 122:8,10	13:2 79:24 82:2	243:18 244:5,14	function 204:1
122:12,16 131:15	168:11,16 296:16	244:19 245:13	funded 87:7
166:1 199:19	297:18	246:14 247:7,16	further 191:11,13
234:21 257:12	forming 234:13	248:11 249:8	191:18,22 192:1
focused 5:2 6:14	forms 276:2	250:6,14 251:2	192:15,16,17,21
14:17 93:25	formulation 60:15	258:20 259:12	192:22 193:2
120:25 146:24	forth 308:11	261:25 262:10	304:16 305:4
185:11	forward 304:6	264:4,16 265:12	308:9,14
focuses 5:1,19 8:22	found 24:14 60:10	266:7,16 269:22	
focusing 6:22	60:13 84:11 134:6	270:1 272:12	G
117:12	157:25 204:21	274:13 277:11,22	G 3:2
foliage 295:24,25	230:1 241:22	278:24 279:15	gallons 94:7,13
follow 70:16	243:15 245:9,19	281:17 284:15	95:18 98:14
followed 246:16	269:19 278:6	286:8 290:4 293:9	Garland 2:10
follows 3:10	298:20 299:15	294:1 295:3	gas 40:11,15,18,21
font 263:7	300:1	296:14 297:5,21	40:23 41:1,6,10,13
footnote 136:12,21	foundation 50:8	298:9 299:2,20	90:9 100:9,12
193:1 263:9	51:5,16 54:14	300:19	110:13
273:11	55:10 56:1,3 58:6	foundations 14:10	gears 252:1 286:10
footnotes 136:5	58:18 68:22 72:20	founders 13:10,14	general 35:14 47:5
193:9 279:9	73:20 75:1 76:10	four 68:17 105:9	53:25 62:15 99:24
force 91:6	76:21 77:16 78:16	127:15 163:18,19	121:13 122:10
foregoing 305:3	79:5 80:14 81:8	180:15 200:22	148:22 168:21
308:12	86:7,19 93:20 98:1	234:23 253:15	216:21 241:21
foreground 92:2,3	99:4 112:9,21	288:24	260:21 262:7,14
295:9	122:25 123:3	fourth 278:14	263:25 265:6
forests 5:3	148:2 159:25	Fox 9:3 15:17	281:7,12 291:14

292:23	197:3 198:16	granted 32:16	82:3 83:15 84:14
generalization	201:20 202:25	graph 35:22 36:2,11	133:2 136:15
146:8	212:25 216:20	107:18 109:13	166:8,15,20 167:7
generally 54:11	217:18 222:16	142:12 143:9,15	167:25 168:22
84:25 87:11 99:18	223:9 226:12,24	143:22 145:23	229:24 230:6
139:1,3 249:24	227:4,15 233:23	146:12,18,22	260:12 298:16
250:2 252:12	234:22 238:2,6	156:25 157:4,7,20	group 6:12 34:12
generated 135:4	241:14,18 245:25	158:4,14 159:15	48:13,19,22 49:1
170:25	247:20 249:18	161:7,14 162:4	112:23 118:9
geotech's 253:16	251:4 264:24	163:11,12,13	141:12
Gerardo 2:15	265:2 283:21	178:25 179:4,10	grouped 37:5 38:5,5
getting 70:19 74:3	289:17	181:1,10 199:22	201:14
78:8 83:15 120:25	goes 40:18 41:22	200:18 203:9,20	grouping 38:2
124:1 127:6	43:13 75:21	203:25 280:23	136:20
154:15 190:25	134:25 157:13,22	283:11,14	groupings 38:9
Gibson 2:2 302:21	going 39:12 52:21	graphs 117:1 154:18	groups 37:6 174:3
give 3:17 22:6 49:12	80:8 84:2 93:3	156:11,24 158:8	grow 3:20
167:18 223:23	113:22 124:2	162:5,22 181:4	growth 63:10
276:5	125:23,24 127:10	280:7	Guadalupe 11:20
given 6:13 150:24	128:23 129:2	great 29:5	Guanta 148:12
global 156:4	154:24 157:8	greater 143:17	Guaranteed 307:8
glorified 4:9	159:18 171:20	146:14,15 147:2	guess 13:15 31:11
go 3:22,24 25:8	172:4 180:15,18	153:10 166:23	37:23 72:2 79:21
29:20 30:4,11,12	180:20 196:6	174:8 184:6 185:6	91:4 103:3 119:21
46:17 48:10 52:9	198:3 225:24	188:13 195:6,9	123:21 127:6
54:17 63:3 64:9	275:15 279:7	greatly 117:18	133:12 197:2
66:23 68:18 71:9	287:2 288:9	green 2:17 9:3 15:18	224:18 254:13
73:5 74:5,13 76:24	301:13,15 302:4	20:1 27:16 37:18	guidance 9:23,25
82:4 84:6 87:3	good 3:13,14 51:11	156:1,3 157:5	84:1 87:24 88:1,1
89:8,17 92:15	51:12 89:18,18	158:10,16,18	88:2,2,6,14,19
93:24 97:22,23	94:14 276:5	159:11 161:13	146:11
99:16 100:14	goose 76:17 80:7	186:17,21,24	guide 87:5 93:15
106:23 107:16	gooseneck 75:9 77:3	302:3 303:1,6,17	guideline 152:20
110:19 113:16	gotten 116:8 303:24	304:16	guidelines 87:20
117:20 122:18,21	government 11:2,6	Greenwich 2:18	Gulf 17:2
123:22 125:13	12:10 14:8,10,19	ground 64:19	gully 296:16,17
127:5 129:5 131:9	14:23 32:13,16	107:15 113:19,21	297:17
132:17 135:11	34:2,13 87:16	115:6,7 118:11	gun 65:12 96:16
137:7 139:11	governments 11:3	120:3 293:19	
142:10 154:12	14:11	groundwater 9:2	<hr/> H <hr/>
156:23 158:4,13	government-run	24:25 26:16,24	H 2:17 253:7
162:3 166:5,6	34:1	64:21 65:9 78:8,19	habitat 141:8
170:22 173:15,15	GPS 156:4,8	78:22,25 79:3,12	habitation 80:12
183:5 189:8 190:2	graduated 4:2	79:16,19,25 80:10	Hagler 10:13
190:11 191:19	Grand 3:21 4:1	80:16,17,18 81:1,2	half 79:22 157:23

161:18 162:1	hazard 45:2 126:5 126:10 169:4	132:22 146:12,21 190:11 193:5 227:10 273:22 280:22,23	144:17 255:9
hand 27:11 151:15 186:14 207:17 208:7 209:21 252:4 262:20 267:17 270:10,19 271:21 272:24 276:20 279:19 281:20 296:22,23 302:24,25	hazardous 8:19 9:20 10:23 11:11 14:5 16:22 44:15,22 45:14 48:7	helped 23:25 helpful 212:2 helps 88:17 89:12 135:12	hits 297:17 Hold 20:1 28:2 holding 252:6,9 home 186:25 honors 4:13,14 hope 84:9 271:14 282:18
handed 34:6 handful 28:9 handle 35:3,8 173:12 231:11	hazards 124:15 HBT 129:14 207:21 208:3 209:17 210:4,6 212:14 219:13 220:13 224:10,19 230:25 231:1 235:5,8 306:14	high 3:22 96:22,24 96:25 101:18,24 102:1,12,25 103:5 103:8,13,24 104:12 142:25 144:5 158:24 182:23 219:6,7 221:17,17 247:22 248:6,8,17 249:25 250:3 260:5,18 270:9 276:11	hopefully 91:4 horizontal 159:10 hot 76:15 hour 291:9 hours 180:15 206:20 301:21 302:11
handled 40:21 107:2 216:25 228:12 231:22 247:4	head 28:25 headaches 112:1 headed 35:17 87:4 127:25	higher 105:1 117:15 117:15 140:17 145:1 146:6 148:6 157:11 164:13 200:14 204:10,22 205:3,5,22	housed 219:25 Houston 2:11 Hugo 2:15 human 5:23 47:2 80:12 104:21,24 110:3 117:8 124:6 126:6 217:23 218:16 282:18 299:6
handling 61:18,19 88:2 89:11	heading 277:24 278:5,14 279:12	highest 4:13,14 142:17,21 143:19 144:3,6,13 193:17	humans 17:11 48:2 48:8 104:20 111:13,16,22 115:19 116:21 124:8,17 125:6 298:23 299:10
handwriting 188:18 188:19,20,22,22 188:23 189:5,9	health 88:3 104:21 104:24 110:3,4 217:23 218:16 299:6	highlight 145:18 211:25 236:2	hundred 144:9 175:5 212:6
hanging 76:14	health-based 115:24	highlighted 30:22 126:25 235:6 251:17	Hurtig 203:10
happen 100:17 121:14 122:10 171:14,20 172:5 238:22 293:4	hear 73:24 177:5 186:1	highlighting 195:6 197:5	hydrocarbon 104:23 116:20 211:17 217:19 218:4
happened 97:7 118:19 170:12 183:18 197:9 238:25 293:3	heard 32:1 97:20 117:13,14 176:7	hill 296:15,18	hydrocarbons 9:6 16:17 101:19,24 102:2,13 103:1,6,8 103:14,24 104:13 104:25 107:20 137:11 139:14 145:9 216:21 260:6 276:10
happening 100:6 114:14 158:23 178:6 238:21 291:18 294:16 295:5 296:6,20	hearsay 44:13 45:23 64:2 97:14 211:20 289:6 297:1	hillside 71:10	hypothetical 145:14
hard 45:13 105:11 158:23 235:4 239:2 261:1 293:15	heart 111:20	hired 10:21 11:3 21:22 22:1,10 108:10 129:12 251:22	
harder 267:11	heavier 150:3,7,22 151:1,13 152:5 153:2,16	historical 23:21 128:13,14 129:9	
harm 95:4,9 298:21 298:21 299:4	heavily 9:9	history 6:2 7:9 19:3 30:12 84:6,7	
harmful 299:11	heavy 150:13 152:21 233:5		
Harvard 112:24	help 11:5 14:12 29:17 59:14 60:16 60:16,20,20 63:11 63:12,15 89:5 91:5 91:6 99:22 120:22 124:20,20 125:1		

161:3 165:8 195:4 222:18 223:12 240:19 300:5	179:14 important 63:8 103:17 104:4,8 123:12 145:11 impossible 275:10 impoundment 227:25 imprimatur 261:18 improper 25:5 70:3 75:8 78:9 159:6 161:3 179:8,15 229:21 264:17 290:2,3 improve 214:8 improvements 172:12,14,22 inaccurate 264:23 265:21 inappropriate 275:1 275:9 incentives 95:10 inches 68:17 incidence 203:21 incidences 200:9 incidentally 214:24 241:20 251:11 include 136:13 258:13 267:1 303:12 included 5:8 8:25 23:21 53:5 133:1 219:17 227:6 229:3 includes 136:15,16 136:21 including 21:16 45:25 69:11 121:15 123:8 128:17 133:4 151:1 298:22 inclusion 51:7 incomplete 145:14 165:7 195:4 222:18 223:12 240:18 252:22	279:9 300:4 inconsistent 86:9,13 261:5 269:25 incorrect 50:16,17 152:21 255:13 259:3 increase 153:19,23 205:12 increased 202:13 increases 204:5,6 independent 242:15 242:19 278:15,17 278:22 287:14 independently 224:9 261:11 INDEX 306:7 Indiana 8:23 indicate 59:7 71:23 83:25 84:2 85:3 101:5 102:12 109:12 112:6 120:6 136:6,23 143:9 157:24 160:9,25 167:10 171:3 172:12 174:1 179:3 181:16 184:12 192:10,25 203:20 218:23 220:6 256:6 272:2 275:14 284:9 indicated 12:23 58:25 66:17 67:7 93:16 121:22 150:19 154:5 167:20 170:9 indicates 34:9 100:16 101:15 105:1 106:24 112:14 136:13 148:13 194:9 196:22 197:15 237:8,20 indicating 117:24 118:3 153:18	156:17 157:1 192:13 297:25 indication 145:18 167:18 179:12 indicative 134:16 140:18 indicator 134:21 indifferent 290:10 indigenous 20:18 21:16 Indirectly 8:4 individual 10:3 35:12 39:4 40:9 133:5,7 138:13,14 139:6,8 142:21 151:9,10 181:5 249:22 260:6 individuals 70:23 97:8 165:4 induce 111:20 industry 25:25 26:7 41:5 82:10 84:1,15 84:23 86:4,9,13,23 87:8,9,12,21,25 88:17 91:17 93:17 94:14 107:4 125:8 126:17 240:16 264:6 300:15 301:1 industry's 88:14 ineffective 176:21 176:25 177:14 276:25 277:1,25 information 23:17 33:4,10 35:18 36:1 36:4 49:14 78:13 101:10 118:16 154:25 199:1 200:25 201:6 222:19 223:20 224:6,8,9 227:1 234:16 239:7 258:13,23,25 259:2 268:8 269:9 289:10,10 306:23
I			
idea 155:22 259:7 identified 18:20 19:1 141:17 142:4 185:19 186:5 191:8 201:15 204:7,24 211:16 217:19 234:1 251:15 277:2 282:2 identifier 208:17 identifiers 36:19 identify 21:10 27:22 39:14 92:10,13 186:15 207:18 208:8 209:22 252:13 262:21 271:23 273:1 276:22 277:13 279:20,23 identifying 128:1 193:23 244:24 246:16 Illinois 8:23 illustration 100:2,5 100:6 imagine 165:11 immediate 199:5 immediately 216:20 immobilize 120:23 impact 5:17 16:11 16:13 39:21 83:21 214:11,16,24 215:2,4 247:23 248:7,8,17 impacts 7:22,25 8:5 10:1 11:6 14:4,6 16:7,22 17:2,8 21:19 24:7 97:20 215:4 implemented			

307:5	interdisciplinary	irresponsible	jungle 231:7 238:10
Informe 282:7	5:1	231:24	238:17,20
307:18	interest 287:8	isolate 6:24	junior 10:21
inhabitants 77:12	interested 14:11	issue 6:22 125:12	jurisdiction 34:14
initial 55:3,5,8,13	138:17 287:1	148:22 152:14	Justice 17:5
55:14 58:16 171:5	308:16	169:16 181:3	Justicia 253:8
171:20 172:5,8	interesting 84:6	199:10 205:8	
306:9 307:2	Interior 12:15	issues 5:2 14:13,20	K
initially 172:2	intermediate 133:15	14:24 176:5,10,12	Kalamazoo 9:3
178:15	international 11:3	176:13,15,20	KAPLAN 2:9
initiated 173:3	14:8,11 129:19	212:8	keep 63:10 65:5,10
input 263:1	285:10	issuing 301:17	83:14,14 120:22
Inspeccion 307:17	interpose 18:16	item 63:3	240:11 252:6
Inspeccion 283:2	interpret 284:4	items 30:1	keeps 89:13
inspection 128:18	interpreting 247:25	IV 2:10	Kelly 1:22 308:4,22
132:7,13 182:18	interrupt 37:15		kept 13:4,5
182:22 195:16,23	212:18 230:11	J	key 82:24,25 83:4
195:25 283:3	253:12	James 307:4	89:16 91:15
inspections 131:21	interrupted 37:25	Javier 2:14	146:18 236:3
131:23 132:2,11	intersects 159:11	Jen 266:21 267:3	kg 139:24
132:15,19,24,25	Intervenors 1:15	job 7:10 290:11	kill 97:1,3 103:25
133:8 134:2 135:2	interview 290:15,18	Jocknick 112:23	kills 97:16
137:2 151:19	291:5,8 292:16	131:2	kilogram 137:16,24
166:17,18 181:11	introduce 5:16	John 3:19 282:8,12	139:25 140:1,6,10
183:1,2 194:3,5	introduces 33:25	282:13,17 284:9	140:15,22,24
282:16	introducing 125:21	307:18	141:5,24 142:7,9
instance 223:23	introduction 128:7	join 106:15	143:8,18 144:24
262:5	256:6,14,14	joined 10:13	145:3 152:19
instances 121:9	invalidity 134:16	joins 38:19 106:12	153:11 159:17
201:16,25 216:2	investigate 7:20	judge 128:23 196:8	162:2,24,25 163:1
221:7 232:14	9:24 66:11 82:9	judgment 31:10	174:9,10 175:7
Institute 87:5,6,23	investigating 268:16	judicial 128:17	178:23 184:7,7
88:6 93:16	investigation 65:16	131:20,23 132:2,7	278:12 283:16,18
institutions 87:16	97:7	132:11,13,19,24	286:6
Instituto 130:3	investigations 207:1	132:25 133:8	kilometers 200:24
insult 16:4	207:12 257:3	134:1 135:2 137:1	200:24 201:21
intake 14:6	involve 9:12 16:3,7	151:19 166:17,18	202:8
intend 19:4	62:5,7 121:24	181:11 182:18,22	kind 12:18 13:5
intended 48:22	involved 8:1 252:16	183:1,2 194:3,4	16:4 37:20 45:16
72:12,17,21	252:18 258:9	195:16,22,25	52:4 60:9 69:2
120:10 128:6	262:24	282:15 283:2,3	81:18 145:16
164:15 257:5	involvement 30:8	307:18	201:1 239:2 261:1
intent 124:20 183:8	involves 196:6	jump 48:15,15	293:17
183:9,13	irrelevant 180:19	jumped 65:11	kinds 12:7,8 14:5
intentional 95:12	288:10 298:18	jumping 96:16	56:23 60:12 74:15

172:22 173:21 200:8 201:5 291:11 knew 152:1 160:6 178:2,7 198:11 210:18 213:10 224:16 259:16 291:10 know 13:13 19:1 20:14 21:25 22:2,4 22:5,19,22 28:6,20 28:23 31:19,21,24 33:15 35:11 45:14 50:21 53:18 62:23 66:15 68:12 87:22 91:3 95:9 99:5,10 99:13,14 106:1,1 111:16 114:15 115:20,25 117:4 119:6 121:17 124:12 126:9,9,13 126:14 130:14 139:9 151:19,23 176:10 178:9 181:3 182:17 187:23 188:5,19 190:23 193:3 196:1,4 207:3 208:12,17 209:14 209:18 212:13 214:9 217:11 218:12 219:7 223:18 226:21 229:16 233:10,17 233:19,20,21 236:23 237:7 239:6 240:21 242:15 251:4,6,8 253:18 254:25 258:5 259:2,4 264:22,24 269:5,7 269:8 270:6 272:9 273:16,19 282:12 282:13,21,23 302:5	knowledge 18:18,24 22:7,17 36:10 42:25 44:3 50:9 56:4 132:4 144:17 195:24 238:15 271:7 301:24 known 104:18 165:17,18 220:8 Kodak 6:6,10,18 KRAUSE 2:16 <hr/> L <hr/> L 198:22 199:16 200:6 201:5,6 253:15 la 36:5 lab 6:17,20 133:25 275:8,23 307:7 labeled 74:16 78:5 90:1 92:18 142:1 154:19 195:13 285:25 laboratories 136:3 laboratory 135:24 275:4 276:4 labs 6:10 lack 121:12 122:8 122:17,24 123:2 132:3 256:7 Lacking 297:20 lacks 50:8 51:5,16 54:14 55:10 56:1 58:6,17 68:21 72:20 73:20 74:25 76:10,20 77:15 78:16 79:5 80:14 81:8 86:7,19 93:20 98:1 99:4 112:9,21 148:2 159:25 169:25 171:8 174:24 181:23 184:3,17 185:8 189:23 191:15,20 198:9,21 199:14 201:3,13 203:7,24	205:15 215:6,18 216:8 217:3,10 218:7 220:12 221:6 225:9 226:5 227:13 228:8 229:1,12 231:13 232:12 234:12 237:17 238:14 239:19 240:7,20 242:8 243:18 244:5,14,19 245:13 246:14 247:7,16 248:11 249:8 250:5,14 251:2 258:20 259:12 261:25 262:10 264:4,16 265:12 266:7,16 269:22 270:1 272:12 274:13 277:21 278:24 279:14 281:17 284:15 286:8 290:3 293:9 294:1 295:3 296:14 297:5 298:8 299:1 299:2,20 300:19 Lago 20:13,14 21:6 27:3 31:15,16,20 31:21 32:5 37:23 38:25 65:17 88:5 148:12 187:5,14 209:4 226:14 255:9 laid 19:13 53:25 LAK 1:3 lake 15:23 31:23,24 32:1,5 land 2:10 4:20,25 224:25 225:21 226:3,10,18 250:10,17 lands 20:22 Language 213:17 large 12:6,21 15:22	85:12 135:9 227:5 239:3 larger 106:13 162:20 290:21 lasted 291:8 late 129:23 Latin 4:9 laude 4:11 laundry 76:13 227:7 228:24 229:9,16 law 10:7 143:6,12 154:8 214:15 217:21 218:5 221:1 234:4,9 laws 9:23 10:8 234:19 lawsuit 20:15 lawyer 19:16 lawyers 222:1 layer 74:19 layout 53:10 54:15 155:22 leach 275:3 leachate 136:21 leaching 78:7 178:18 273:24 leading 128:4 130:19 134:9 138:22 139:16 141:2 146:3 152:7 160:12 164:3 168:8 176:22 184:17 189:24 196:23 199:13 202:15,20 206:24 209:5 211:1 212:12 225:22 226:4 229:12 235:16 240:20 243:18 244:5 247:15 249:9 256:10 260:25 262:11 263:14 278:3,10 279:15 280:19 292:17
--	---	---	--

298:8 299:1	100:14 106:23	103:15 117:8	275:7,12 276:9
leaking 119:1	107:16 110:19	126:6 197:15,25	literal 47:14
learn 43:25 44:5	117:20 122:18,21	198:13,14 298:22	literature 196:22
119:12 213:25	125:13 127:5	299:5	197:11 203:10
learned 46:13	129:5 131:9	light 150:2,5,21	lithium 233:4,18,20
213:14 216:25	132:17 135:11	151:11 153:12	233:22
217:5 228:5,12	137:7 139:11	limit 109:9,14	litigation 11:4 18:13
237:15,22 259:2	141:11 142:10	137:25 141:6	20:13,14 21:7,10
265:8,19 266:3,12	147:1 154:12	169:3 195:1	21:11,14,15 27:3
lease 240:3	156:23,23,25	284:12	31:16 65:17 88:5
leave 46:17 229:13	158:4,13 161:6	limited 219:18	187:6,14 209:4
leaves 293:16	162:3,4 166:6	255:15	little 8:8 12:3 22:24
294:13	173:15,15 175:13	limites 108:22	30:2 36:19 40:18
Leaving 205:7 259:7	182:4 183:5 185:3	line 32:24 40:17	41:21 51:18 71:4
led 23:18 84:12	190:2 198:16	41:22 43:13 92:22	71:10 73:2 89:4
left 6:4 10:12 12:24	202:25 205:24	109:7,13 143:5,7	96:15 100:9
53:12 56:24 72:12	210:21 212:25	157:6 159:10,11	108:21 120:23
92:2 155:2,12	216:19 217:17	159:15 161:14	131:7 136:5
157:9 159:23	226:12 227:4,20	162:10 214:18	158:23 161:16
175:9 177:8,11	229:13 233:23	288:10 305:7	162:2 163:14
190:16 193:24	234:22 236:4	liner 64:20 65:1	201:21 202:4
285:24 286:16	238:2 245:6,25	83:13	210:20 230:12
300:8,9	249:18 252:1	liners 64:13 65:15	254:17 283:14,24
left-hand 238:4	256:13 262:18	65:25 66:2,9,14,15	290:6 291:23
282:22	265:15 266:1	66:16,19 67:9	292:1,3,4,5,7
legal 109:17 175:20	290:5 291:17	lines 38:11,13 39:7	293:15 294:12
176:5,12 222:6,11	level 10:22 18:8,10	243:12 248:15	live 32:4 80:24
222:23 223:8,14	61:16 84:22 138:6	link 202:23	106:14 198:24
223:14 234:11	139:25 140:17	liquid 59:13	201:10,18 204:2
299:20	143:7 174:2	list 8:16,16 122:5,15	204:10 212:18
legend 41:23 89:3,3	179:18 222:4	130:1 206:18	lived 125:25 199:17
92:7 108:12	223:8	229:4 249:20,21	200:11,21 202:3,8
156:14 192:25	levels 101:18,24	249:23 251:11,12	203:17 223:25
legs 111:20	102:1,12,25 103:6	251:13	lives 200:1,13
length 212:6	103:8 104:12	listed 63:9 129:14	living 5:21 24:10
letter 188:21	142:2 164:14	131:3 185:18	199:11 203:16
letters 282:11	270:9 283:25	190:6 191:7	204:4,7,11 205:4,5
let's 18:11 29:20	299:11	193:21 280:15	260:17
30:4,11,12 32:19	liabilities 249:21,23	305:6	LLP 2:9,16
35:16 36:14 39:24	250:1 251:12	listing 129:7	lmurphy@skv.com
46:17 48:10 52:9	liability 176:2	lists 193:15	2:13
54:17 56:12 63:3	249:20 251:16	liter 108:13,19,23	local 10:8 21:17
64:9 72:15 73:1	life 44:22 96:7 97:10	109:2 112:12,12	76:8 226:19 236:6
82:4 87:3 93:24	101:14,15 102:3	113:6,8 166:24	236:15,18
97:22 99:16	102:14,20,24	167:9 178:19	located 69:5 164:18

190:19 220:2,7,19	285:11,18 291:17	125:22 135:3,5	map 30:21,25 36:15
location 31:15 90:16	looked 23:24 24:23	154:24 163:9	36:17 37:1,3 38:22
157:5 161:13,15	28:10 54:7 66:2	291:9 302:14	39:14 255:20,20
164:1	96:11 99:13	lots 88:3	271:10
locations 39:3,19	115:20 116:22	Louisiana 2:10 17:4	maps 167:24
155:20 156:4,8	126:20 128:7	love 265:3	MARIA 1:11
163:19,19 165:5	130:21,24,25	low 144:4	mark 179:4
167:25 243:9	131:3 132:15	lower 89:3 140:16	marked 27:12,13,15
logarithmic 179:18	143:16 148:21,22	155:2	27:16 186:13,15
179:22 181:3	154:14 178:25	lowest 144:2	207:16 208:6
logic 190:5	197:5,10 203:13	lubricate 59:14	209:20,22 252:3,5
Loja 31:14	207:21 208:22	lubrication 60:16,20	262:19,21 267:16
long 24:10 294:21	218:19 234:17		267:18 270:10,18
longer 34:15 149:20	240:21 245:18,19	M	270:20 271:20,22
170:20 211:23	246:19 258:6	machines 282:19	272:23,25 276:19
264:23	271:16 280:7	Mackereth 1:22	276:21 279:18,20
long-term 248:19	289:11 291:10	308:4,22	281:19,21
249:2,11	looking 23:20 47:19	Madison 4:21	marks 39:14 254:22
look 10:1 27:20	47:20,21,22 49:23	Maest 188:24 210:7	Mason 2:17
35:16 36:14 39:24	51:14 66:11 85:18	210:10 212:8	master 52:14
48:15 51:11,12	88:8 111:7 114:3	273:6,8,14,19	master's 4:19 7:6,8
54:3,4,4,6,6 55:7	121:3 145:7	307:10	7:10
55:13,21 56:5,12	146:11 149:12	Maest's 188:23	match 33:15
72:15 73:1 80:6	157:8 181:1	273:22	material 60:24
98:13,18 99:2	182:17 235:3	main 92:15 227:25	128:24 129:3
125:11 130:16,20	239:6 251:13	maintain 63:16	150:3,13 211:10
134:14 141:11	255:17 263:2	maintained 41:16	272:7 284:14
147:1 149:8	266:18 293:18	301:24	materials 280:5
156:25 161:6	295:12,17	maintaining 60:21	matrix 136:8
170:22 175:5,13	looks 36:6,15 40:18	major 277:14,24	Matt 2:23
178:24 185:3	50:12 51:25 68:15	majority 121:23	matter 19:3,3 32:15
187:16 194:15	91:22 130:11	122:4 139:9,10	94:11 202:18
201:6,16,24	136:7 137:3	172:4 181:16,18	213:15 234:6
211:12,13 214:10	139:12 157:21	182:2 211:18	298:2
224:3 226:25	158:1,19 159:1	217:20	Maxima 285:16
229:23 230:9	161:16 166:6	making 224:14	maximum 36:7
233:2 236:4,17	188:23 202:6	manage 35:4	109:5 143:3 144:8
239:25 240:23	207:20 212:19,22	management 12:6	193:13,16,20,24
241:25 244:9	229:16 249:22	238:3,4 255:22	194:16,25 195:6
253:19 254:15	252:21 253:7	manager 15:17,25	195:13 285:9
255:18 256:5,13	255:15 284:17	23:4,6 261:15	286:4
265:15 266:1	294:4	managers 7:22 8:6	McGovern 270:25
268:14 273:11	lost 212:18	managing 188:25	307:5
279:11 281:22,24	lot 12:6,18 37:10,10	manner 27:5 62:14	McMillen 2:22
282:6,22 283:4	69:12 84:13	Manuel 130:4	mean 4:13 14:14

20:14,19 23:14	179:1 189:18	149:19,22,24,25	195:1,7,10 198:12
32:6 34:4,10,16	193:17 201:1	150:4,9,20 168:5	221:1,8,10 222:2
35:12 37:15 38:1	measurements	methods 149:14	222:10 284:11,17
41:24 42:14 43:14	108:20	mg's 139:24	284:20,22
47:14 55:17 57:7	measures 151:9	Michigan 3:21,21	mind 127:23 152:4
59:4 61:21,22 63:5	174:13 224:22	8:23 9:3 15:23	162:5 231:14
64:12 66:10 67:21	225:6,16 226:2,9	micrograms 112:11	mine 248:16 270:17
83:13,16 85:5,8	measuring 152:20	112:14 113:6,8	271:9
106:1 108:23	275:24	mid 129:23	Mines 279:3
120:3 122:9,11	mediation 211:17	middle 286:2	minimize 94:21
134:25 136:17	medium 45:16	middle-upper 38:25	Ministry 279:2
137:19 153:4	150:3,6 151:11	mid-level 10:22	Minnesota 8:24
162:8 185:7	153:12	mid-1990s 184:20	minutes 70:22,23
186:24 191:12	meet 107:12 287:16	migrated 243:22,23	286:12,16 287:1,7
193:17 206:5	287:22 288:3,8	244:1 248:20	287:8,18 289:17
211:7 212:17	meetings 288:14	249:3	290:8 291:8
236:10 240:5	Members 307:4	migrating 245:10,22	297:24
244:12,17 245:11	memo 234:23 246:1	migratory 5:3	mislaid 270:17
245:16 246:10	267:23 269:2,5	miles 32:4	misleading 266:11
251:5 253:12	270:22	milligram 140:10	mispronounced
263:6,11 270:13	memorandum	152:19 182:1	130:4
283:2	230:21 306:22	278:12	missed 182:19
means 23:5 31:22	307:4	milligrams 108:13	212:20
31:23 45:11 64:16	memory 178:4	108:18,18,23	missing 252:24
107:19 111:12	193:4	109:2 112:12	Misstates 20:24
115:16 153:9	men 91:24	137:16,24 139:25	21:24 24:15 66:20
158:10 170:19	mention 242:25	140:1,6,14,22,24	87:14 159:24
185:9 191:7 192:4	286:11	141:5,23 142:6,8	160:19 163:6
192:14,20 194:3	mentioned 15:20,21	143:8,18 144:24	195:3 212:11
236:13,13,14	26:24 110:2 151:7	145:3 153:11	219:1,2 221:5
240:8 245:18	172:22	159:16 162:2,23	228:9 243:16
248:6 255:1	mess 68:16	162:25 163:1	251:23 265:11
282:24 284:19	met 287:19 288:1,11	166:24 167:9	270:2 275:19
302:8	288:11,16	174:9,9 175:7	287:9
meant 34:21 72:3,7	metals 9:7,10,21	178:19,22 184:6,7	mistaken 73:4
109:8 128:13	11:15 133:5 233:5	275:7,12 276:9	Misuse 307:10
245:17 247:24	260:7	283:15,17 286:5	mitigative 248:18
measure 137:11	meter 157:23	million 143:8,24	249:1,14
150:7,22 151:17	158:21 161:17	144:9,10,11,14,14	mix 60:17 80:18
274:23 275:2	meters 156:16	144:19 145:10,24	120:2,2 181:12
measured 104:6	157:15,15 161:18	147:3 148:15	276:3
108:7 138:21	161:18 162:1	153:5,19 154:6	mixed 103:19 125:2
142:17,21 144:6	200:22,23,23	158:2 159:2	275:8
144:13 166:23	201:19	160:10,24 161:25	mixing 275:23
167:8,15 178:10	method 79:25	181:19 188:14	mixture 33:8 39:4

171:11	172:10 173:14	<hr/> N <hr/>	nervous 290:16
mobile 85:9	174:18 175:12		neurologic 111:25
modifications	177:16 180:12	N 2:4 3:2 306:1	never 19:11 72:8,9
213:21	182:3,4,24 184:11	name 3:17 13:6	72:10,10 73:15
modified 303:12	184:23 192:8	31:16 56:14	77:8 121:18
moment 101:12	197:13 199:9	190:18	Nevertheless 260:11
205:8	200:16 202:10	names 31:1 190:6	new 1:2 4:4 6:23
money 223:1	206:1,16 215:6	190:16	13:6 288:11
monitor 14:23	216:7,17 219:10	naming 147:10	NOAA 17:1
118:22	225:22 226:11	Napa 31:1	non-exposed 203:22
monitoring 228:18	228:20 229:21	Napo 31:1 207:2,13	204:3,11
229:24 230:6	232:1 233:1,16	255:11,15 275:18	non-human 5:19
Montana 12:21	236:16 237:6	280:2 307:16	non-retained 19:2
month 302:21	238:23 239:10,24	Narajo 2:15	nope 117:22
months 288:25	240:14 241:17	narrate 289:19	north 112:17 113:3
morning 3:13,14	245:5,6,23 248:22	national 8:15 12:13	156:15
Moss-American 9:4	249:17 256:3	16:20 203:14	northeast 31:12,13
motivations 95:10	257:9 259:17	natural 11:8 12:16	northeastern 30:22
move 36:13 39:12	275:13 276:6	224:23 225:7,18	northern 5:3
41:3,19 42:13,20	286:7 289:15	nature 15:1 46:2	north-south 39:8
43:5 44:13,20,25	293:22 294:7	228:16 257:6,22	nose 296:24
45:22 46:9 47:9	297:20 298:18	260:9	Notary 1:24 305:25
48:9 49:8 50:1	299:12 300:11	near 76:17 78:21	308:6
51:4 52:2,8 53:15	301:2 304:6	236:25	note 67:18 127:4
55:9,25 56:11,25	moved 72:9 114:9	nearby 9:9 227:24	219:13 244:1,20
57:23 58:17 60:8	151:8	necessarily 38:8	244:22 246:15
60:22 62:10 63:2	movement 84:22	79:8	269:10
63:17 64:2,8,25	85:2	necessary 8:2 24:13	noted 126:22 243:24
65:8,12 68:6,21	movies 282:19	24:20 224:22	247:12
70:3 72:14,25 73:5	moving 178:1 202:5	225:5,16 226:1,9	notes 210:23
73:6,11 75:7 78:2	252:7	274:2 302:12	notice 1:17 38:10
78:9,23 81:5 83:20	mud 74:15 75:5	neck 76:17 80:7	303:2,22
83:24 88:21 90:11	muddy 59:13	need 8:18 52:15,17	noticed 41:15
91:20 92:25 95:13	muds 59:8,9,12,17	72:2 73:9 82:6	118:21
96:5 97:5 98:21	60:2,3,10,13,14,14	84:24 151:13	November 270:24
99:15 103:2	60:17 61:1,7,9,11	192:3 252:6	NRDA 11:10 12:21
104:10 105:3,18	62:12,14,20,25	286:17	16:1 17:19
105:20 110:6	233:4,15	needed 24:22,22	Nueva 31:14
111:12 112:4	multiple 89:10	83:13 159:21	number 28:16,21
114:18 115:9	118:13 122:5	needs 59:18 85:14	29:8,10 36:7 38:10
122:20 124:4	133:18 208:15	93:2 304:14	49:17 93:7 115:24
126:3 145:21	260:12	negative 192:16	127:14 133:23,25
152:24 154:3	Murphy 2:10 207:7	Negligently 263:18	134:11,15,20
155:25 159:6	208:12	306:20	135:8,9,10,13,17
163:10 168:25		nerve-racking	136:1,24,25 138:8
		290:9,16	

140:4,25 143:10 143:23 153:1,18 154:20 160:15,17 165:4 166:20 177:9 179:5 190:18,19,21,22 197:7 198:4,17 199:2 214:15 224:4,7 268:18 270:12 300:7 numbered 190:22 numbering 190:23 190:24 191:2,4 numbers 28:19 33:14,15 67:13 108:15,17 132:16 133:17 140:12 146:13 184:10 200:17,20 241:20 241:23 283:21 numerous 232:3,5 232:13	53:7,15 54:1,14,21 55:15 56:6,16 57:9 58:2,5 59:10,22 60:5,11 61:2,12 62:17 63:21 64:14 65:3,18 66:6,20 67:10,22 68:10 69:15 70:9 71:13 71:20 72:1,5,19 73:20 74:11,25 75:13,16 76:3,10 76:20 77:14 78:15 78:23 79:4 80:2,13 81:8,20,25 82:18 83:2,9 84:4,19 85:6,22 86:6,18,25 87:13 88:11,25 90:18 91:1,13 93:19 94:4,15,19 95:6,21 96:9,17 97:13 98:1 99:3,20 100:18,19 101:2 101:20 102:5,15 103:10 104:15 106:17 107:3,5,23 108:24 109:16 110:16 111:1,17 111:23 112:8,20 113:14 114:1,24 115:13 117:9 118:1 119:4,18,23 120:16 121:6 122:1,24 123:2,7 124:4,10,18 125:9 125:15 126:7,18 127:2 128:4 130:19 131:13 132:3,8,20 134:8 135:15 137:20 138:3,22 139:2,16 140:7 141:2,18 142:13 143:13,25 144:20 145:13 146:2,16 147:5 148:1,18 149:17	150:14 151:3,21 152:7 153:7,21 154:9,21 157:2 159:13,24 160:12 160:19 161:2,10 161:22 162:15 163:5 164:3 165:7 166:12 167:4,12 167:22 168:7,14 169:5,13,25 170:6 170:17 171:7 172:16 174:4,23 175:19 177:22,22 178:13 179:7 180:21 181:8,20 181:22 182:10 183:10 184:2,16 185:8 187:10,15 189:12,22 190:8 190:14 191:14 195:2,11 196:2,13 196:23 197:13,22 198:8,20 199:13 200:3 201:2,12 202:15,19 203:7 203:23 204:17 205:14 206:6,21 209:5 210:12 211:1,7,20 212:11 212:20 213:16 214:17,19 215:18 216:12,17 217:2,9 218:6 219:1 220:11 221:5 222:5,17 223:11 224:11 225:8,19 225:22 226:4,22 227:13 228:8 229:1,11 230:3 231:12,15 232:12 233:8 234:10 235:16 236:11,21 237:11,16 238:13 239:1 240:6,18 241:8 242:7	243:16 244:4,13 244:18 245:12 246:13 247:3,6,15 248:10 249:7 250:4,13 251:1,23 256:10,22 257:14 257:18 258:1,15 258:19 259:11 260:1,24 261:24 261:24 262:9 263:14 264:3,15 265:11 266:6,15 268:17,25 269:6 269:21 270:1 272:19 274:3,12 275:19 276:16 277:20 278:9,24 279:8 280:19 281:4,16 284:2,13 287:4,9,24 289:6 290:2,24 291:20 292:17,24 293:9 294:1,6 295:2 296:1,13 297:1,5 298:7,25 299:18 300:18 objections 25:15,19 26:1,5,18,22 44:7 50:20 65:23 69:4 96:1 101:8 116:3 116:13,17 120:20 152:17 164:7 175:24 176:17,22 177:3 185:2 191:20 192:11 193:14,22 194:8 195:11,19 198:15 200:19 205:19 225:14 237:24 239:18 242:13,24 262:15 265:18,23 274:18 278:3,9,19 279:14 284:23 285:2,22 294:11 294:18 295:7
O			
O 3:2 object 18:22 180:18 180:21 198:8 214:17 272:11 277:11 288:9 302:8 303:17,21 objected 302:13 objection 17:16 18:4 18:16 19:6,25 20:24 21:8,8,24 24:15 25:5,6 27:8 30:15 31:4,17 32:7 32:17 33:2,21 34:18,23 35:9,20 36:9,21 38:16,23 39:23 40:5 41:8,19 41:25 42:17,24 43:15 44:2,17,24 45:4 46:5,12,24 47:4 48:4,20 49:15 50:8 51:4,16 52:6			

298:13 300:4,23 303:24	occurs 42:3 171:4 257:7,23	103:16,18,19,20 104:1,3 108:7,18 110:4,13 111:3,4,5 111:7,8,12 113:17 113:17,20,21,21 115:18 116:6,7,7 118:5,18,19,20,22 118:25,25 119:1,8 119:9,10,15 120:3 120:5,7,10,13,13 120:14,21,22,23 120:23,25 121:4 121:13,15,15,18 121:19,24 122:12 122:15,23 123:6,9 123:23,25 124:1,7 124:16,22,25 125:2,5,8,18,20,23 126:2,13,15,16 127:4 135:21 137:11 138:5,15 139:22 144:12,25 145:3 146:1,23 149:23 150:7,10 150:22 151:1,16 152:21 153:2,16 155:3,23,23 166:7 171:9 173:4 178:1 190:17 197:8 199:12 200:1,11 200:13 201:19 203:18,19 204:7 204:15 205:4,4,8 205:11,13 215:12 215:24 216:1,2,6 216:11,14,15,25 218:13 219:15,17 219:19,19 220:2,3 228:23 233:12 234:2 240:4,10,13 241:11 243:7 249:12 255:9,10 255:16,21 260:3,7 260:8 263:18 264:5,7 266:2,11	269:15 270:9 274:10 275:10,10 276:2,3,12 280:2 290:21 292:4,6,10 293:11,16,19 296:25 297:11,18 298:23 299:15,25 300:1,14,24 307:11,15 Oilfield 306:20 oily 60:17 68:16 245:8,8,20,21 246:8,10 275:18 276:1 294:13,14 oil-based 60:15 oil-contaminated 121:10 oil-exposed 204:10 204:14 oil-water-gas 33:8 39:3 171:11 okay 5:20 6:1,2,3,11 6:16 7:3 8:9,12 12:2 13:10,20,23 14:1 18:11,25 20:5 20:11 21:13 22:24 22:25 28:15 29:9 29:13,14,19,25 30:4 36:13,23 37:25 40:17 43:12 47:15 48:17 49:7 50:15 52:11,13,16 52:19 62:21 73:1 73:16,17 74:9 77:10 87:3 89:7 91:11 93:24 94:23 97:22 102:8 107:16 110:12 112:16 117:5 121:20 122:18 127:5,9 128:21 129:2,11,18 130:15 131:6 133:10,16 134:3 134:18 135:11,25
objective 165:24,25 166:3 222:8 274:24	Oceanic 12:14 16:20		
oblige 265:3	October 12:23 267:25		
observation 63:19 122:22 216:10 218:13 220:24 243:14 249:11 250:22	office 7:12,13 8:22 36:5 47:19,21		
observations 97:16 180:24 215:16 216:2,5 247:18 266:14	officer 23:5,7		
observe 43:7 63:23 76:8 240:2	off-site 85:13		
observed 69:1 215:13 218:9,9,18 243:10,15 247:13 249:4,12	oh 27:16 46:17 73:7 97:23 202:6 236:9 253:12 279:25 294:6		
observing 71:17	Ohio 8:23		
obtain 5:5 33:9	oil 9:12,14,16 10:24 11:15,15,20,23,23 11:24 16:18,22 17:8,14 18:2,6,10 20:21 26:6 32:20 33:6,18 34:1,7,12 34:14,17,22 35:1,5 35:7,8,24 37:3,5 37:10,11,12 38:2,3 38:6,7,7,9 39:11 40:10,16 41:11 42:3,4,5,6,8 43:17 43:22,25 44:6,8,10 44:14 45:2,11,15 45:16,16 46:1,2,13 47:7,8 48:7 50:24 50:25 51:2,2,24 53:25 54:12,25 56:22,22 57:6,8,11 57:15,18,19,22,25 58:13,14,15 59:1,2 61:7 63:12,16 70:17,17,18 71:4,7 71:9,11 73:18,18 74:20 75:4 76:17 77:23 80:6 82:10 87:8,9 88:1,14,15 88:16,24 89:22 90:3,17 91:7,17,18 97:18 99:17,24,24 100:1,7,9,11,12		
obtained 4:7 7:5 36:1 134:1 224:8 224:10 252:25 255:5			
obtaining 4:17 145:8			
obvious 69:9			
obviously 81:1 163:23 302:19			
occasion 43:24 82:9 88:4 164:23			
occasions 216:10			
occur 81:18,19 82:1 100:10 111:3,4 288:16,21 304:4			
occurred 45:3 118:25 119:9,10 151:19 174:22 215:14 244:11 290:18			
occurring 63:10 302:1			

136:23 137:7	286:9 287:16,22	175:2 181:6,13	94:24 95:1,16,25
138:1 139:11	288:5,15,23	194:7,10,11,17	96:2 104:11
143:5 145:6	289:22 290:1,7	213:19 233:12	116:24 152:22
146:10 147:1	291:4 292:12	241:11 268:22	163:25 164:6
152:3,23 155:11	293:7 294:25	269:3 293:12,13	168:4,10,11,13,16
155:13,14 156:13	295:5 296:5,19	300:24	169:1 184:24
156:23 157:19	303:10 304:13	operating 61:10	202:11 204:13
158:4,13 159:5	old 79:13 103:19	63:24 82:21	205:10,18,20
160:8,16,23 161:6	older 98:17 155:12	114:23 115:7,8	212:2 225:4,13,15
162:6 163:8 165:2	204:5	155:21 171:13,17	225:25 226:7,8
168:13 169:10	once 72:11 160:5	173:7 229:8 230:7	229:7,14,18
176:19 177:15	170:19 171:10,13	operation 23:18	231:17,19,19,22
178:8 180:2,5	171:17 177:24	42:15 79:14	234:6 241:2,7,10
181:15 182:4,6	178:1,5 275:7	255:19 269:8	242:11,14,15,19
185:16,16 186:11	ones 54:16 66:2 92:3	operational 234:1	249:25 250:11,20
188:3,10,17 189:2	111:10 130:23	operations 21:20	250:24 251:7,9
189:6,7 191:19	156:20	25:22,24 26:9,14	274:8,15,17,19
193:10,19 194:6	one-third 238:7	27:1 32:20,24 34:3	277:18,21 278:1,8
194:14,20 195:24	ongoing 171:5	34:7 35:4 37:7	278:13 279:13
197:1 199:21	online 93:13	40:1,3 44:11 48:24	298:1,12,14
206:17 208:5,14	onshore 106:24	49:5 50:23 56:20	299:13,24 300:12
209:11,19 210:20	on-site 173:12 238:9	59:25 61:14 63:25	300:21
211:5 212:24	open 54:6 57:20	75:3 85:25 88:2	opinions 19:3,5,6
213:8,11 215:5	60:2 63:11 69:19	91:16 100:21	24:4 62:19 234:14
217:17 222:13	89:15 125:17	114:9,15,16 115:1	234:17 243:20
223:6,22 224:21	126:12,15 173:13	115:3 126:2 155:5	249:5 260:21,22
227:17,20 233:23	245:7 300:6	165:15 169:19	261:3,4,5,9,11
234:22 235:9,21	opened 35:17,23	170:25 172:19	264:21
236:4 241:25	36:7 37:4	173:3,11 204:25	opportunities
242:18,21 249:16	operate 32:13,16	205:1,2,4,8,11,22	171:14
251:10 252:1,20	35:3 40:25 68:2	208:22 212:3	opportunity 303:13
253:2,19 254:2	88:15 91:18	214:8 215:1 234:2	opposed 172:24
255:4,6,12 256:16	operated 26:6 30:24	234:7,18 235:25	201:10 301:25
256:20 258:12	33:5,17 35:2,6,17	249:12 251:20	orange 37:23
259:5 261:13	35:24 36:7 37:2,4	256:1 260:3	orange-ish 37:24
262:2,13 263:5,12	40:8 53:14 56:9	289:13 291:12,15	ordered 144:2,3
265:1,15 266:1,10	64:7 82:11,16 83:5	298:14,24	organic 6:9,14,14
267:1,6,15 268:4	86:17,21 88:18	operator 34:16,22	9:1
268:10,14,22	91:19 105:11	172:15 224:21	organics 286:1
269:10,24 271:4,7	108:2 118:17	225:5,15 226:1	organisms 5:22 97:1
272:24 273:23	131:18,19 138:19	234:8 300:14	97:4,20 104:19
275:14 278:14	149:4 155:4	opinion 45:1 46:10	organization 87:7
281:2,20,23	169:24 170:4,8,23	62:13,22,24 78:24	organize 48:23
282:17 283:4,8,14	171:1,9 173:22,24	79:24 81:17,24,24	orient 220:7,10
284:6 285:6,11	173:25 174:14,15	82:2 94:12,18,20	oriente 220:10,14

220:18	306:2	88:22 91:7 105:16	77:1,6,22 78:1
original 13:12 90:16	pages 234:23 235:22	111:4,5,9,13 114:3	80:22,24 81:3
originated 172:8	238:3 241:19	117:2 129:21	99:23 104:7
outflow 232:8,15	252:24 253:14,17	198:6 250:16	106:14 111:25
outline 29:22,23	253:21	297:6,7 299:5	117:13 123:14,19
outlined 155:16,19	PAHs 260:7	particularly 43:7	123:21,24 124:21
outlines 49:24	paid 122:12	particulars 27:11	124:24 125:2,25
235:19	paper 203:10	parties 166:21 191:2	126:12 129:12
outside 65:7 164:18	204:19 263:12,17	304:11 308:15	164:24 177:5
199:19 205:5	263:25 264:2,5,13	parts 143:8,24	197:7 198:4,24
261:11	264:19,24 265:2,5	144:11,14,19	199:17,19 200:7
ovals 155:20	265:9	145:10,24 147:3	203:16 204:1,22
overall 23:8 34:6	papers 204:20	148:15 153:5,19	205:4,5 215:4
149:8 153:24	262:18	154:6 158:2 159:2	223:25 237:2,4
258:7 261:15	paragraph 227:20	160:10,24 161:25	260:17 271:5
291:15	232:3 259:23,23	181:18 182:1	280:5,17
overflow 67:19	260:21 261:21	188:14 195:1,7,9	peoples 20:18
68:14 69:22 71:17	276:8	220:25 221:8,9	percent 140:22
215:14	paragraphs 227:16	222:2,10 255:18	141:20,22 142:5,7
overview 255:21	paraphrasing 248:3	255:25 274:19	144:25 145:3
overwhelming	pardon 232:4	280:25 284:10,11	147:11,15,18
181:16,17 182:2	parens 31:15	284:17,20,22	148:7,13 166:22
owned 227:12	part 6:12,24 13:11	pass 276:12	167:8,15 170:8
	13:18 17:23 19:23	passage 248:13	174:7,12 177:7,10
	24:12,18,21 34:15	passed 224:4,7	177:12,13 181:25
	38:14 39:9 56:18	paste 235:8 236:2	182:14 183:17,18
	109:21,22,23,24	pasted 235:10	184:5 185:12
	128:17 129:1,16	pattern 149:8	199:23 201:19,21
	129:24 131:22	paved 123:11	201:22 202:4,6,7
	148:23 153:25	pay 10:10 111:10	247:21 248:5
	164:5,8 173:10	145:20	percentage 140:4
	183:2 187:20	Payaguaje 2:15	147:2 167:1 169:2
	210:16 214:7	PCBs 15:24	169:22,23 170:3
	220:15,15 240:11	Peers 266:22 267:3	277:16
	244:25 247:10	267:4	Percial 193:25
	267:24 274:22	Pelley 287:20 288:6	percolation 213:4,6
	279:3	291:23 292:21	performance 23:8
	Partially 7:4	294:19 295:12	performed 14:25
	participate 287:6	pen 270:17	129:12
	participated 9:25	pending 279:25	performing 151:2
	particular 5:2 12:8	penultimate 246:1	period 12:1 35:23
	26:23 27:25 34:25	people 5:22 13:15	82:11 84:18 98:13
	45:15,19 53:19	13:16 21:16,19	119:21
	56:13 68:20 75:19	24:9 36:4 45:10	Perito 282:8 307:18
	81:10,11 84:8	52:17 76:12,22,25	permanent 71:24
P			
P 3:2			
Pacific 39:11			
pad 54:4 55:2,23			
58:14 155:17,23			
page 29:20,21,23			
188:21,22 189:3,3			
189:5,9,9 207:3,22			
210:21 212:6			
215:9 216:19			
217:18 224:3,3			
226:13 230:9,9			
233:3 234:23			
236:4,18 240:24			
241:19,23 243:5			
245:7 246:1			
249:19 253:20			
254:3 259:19			
268:15 273:11			
275:15,15 280:24			
283:5 285:6 305:7			

72:3,12 86:12,16	107:19 108:1	piece 133:15 224:8,9	83:19,22,22 84:10
permission 32:12	110:21 116:20	pieces 198:25 235:6	85:11 86:8 126:13
permitted 143:11	133:4,5 137:10	294:20	155:2 162:20,21
299:16 300:2	139:13 145:9,19	pipe 68:1,4,13,16,24	162:21 175:15,18
person 146:12 199:2	150:2,3,5,6,21	69:1 70:7,15 71:8	177:19 185:18,18
199:7 201:25	151:11 152:6	75:10,10,18 76:18	186:5 190:21,22
239:3	202:12 218:9	77:3 80:7 83:17	190:23,24 192:1,3
personal 18:18,24	260:6 274:23,25	216:16,16 247:12	192:5,23 193:18
19:2,5 22:17 36:10	276:10 286:2,6	291:25 292:2,5	194:21,21 213:4,6
39:20 42:25 44:3,9	phases 51:2	295:10,12,14,16	215:14 216:11,15
45:9 50:9 51:13	Phone 2:5,12,18	296:7,8,9,11,23	233:13,13 243:24
69:11 71:16 74:22	307:13	297:6,15,16	244:2,7 248:20
132:3 180:23	phony 277:10	piped 43:19,20	249:3 269:12,16
215:16 216:10	photo 49:12 51:7,10	pipeline 39:8,9	269:20 270:8
238:14	68:12,25 98:3,6,22	40:12,14 43:21	290:21 292:3
personally 15:2	99:10 105:5,5,8,12	44:10 57:15,16	293:15,17 294:10
16:14 23:3 39:16	106:19 125:21	59:5 118:8,21	294:13,21,22,24
43:7 50:2 52:4	162:22	119:2,10,16	295:10,11,17,19
57:24 75:6 232:18	photograph 50:10	pipelines 39:6 43:7	295:20 296:8,10
240:2 268:11	50:12,19 53:4,9	44:1,9 45:6 118:5	pits 49:11,24,24
perspective 24:4,8	55:4,20 56:9 58:4	118:5,6,10,11,12	50:3,22 51:9,12,14
105:12 110:3,4	58:8,13 97:24	118:13 173:5	51:17,20,21 52:1
142:25 218:20	98:17 155:13,15	243:12	53:11 54:4,5,6,6,7
Peter 2:3	156:3,14,17,18,19	pipes 40:22 43:1,9	55:1 56:14,22,22
Petroecuador 181:7	163:17 269:17	67:19 68:2,15,17	56:23 57:1,4,5,20
181:14 194:12	photographer 50:13	68:18 70:2,19,25	57:25 59:7,25 60:2
205:2,9 232:20	photographs 68:13	71:18 77:7 99:5,9	61:11,22 62:3,5,9
238:18 293:13	269:13 271:9	105:9,13,15 106:9	62:22 63:20 64:1
Petroequador 33:25	photography 49:19	215:21,21 216:3	64:11,12,16,20
33:25 34:1,7 85:15	photos 49:20,23	232:15 239:4,7,15	66:1,2,4,8,15,16
100:16 101:1,6,11	98:12 167:25	291:24 297:3	66:19 67:9,19 68:2
114:9 115:2,6	phrase 152:9,12	pit 50:24 51:3,15,18	68:3,15,19 69:2,5
155:5 169:11,19	185:17 250:16	52:4 54:12 57:22	69:18,19,21,22
169:23 170:10,16	259:6	58:8,12,14 59:1	71:17,18,24 72:7,9
171:2 172:2,7,13	Piaguaje 2:14	61:24 62:1 65:1,7	72:11,23 74:22
172:19,20 173:2,6	pick 222:14	65:10,10,15 66:11	75:4,5,6 76:7,17
173:18,25 174:16	picture 50:6 58:19	66:12 67:24,25	77:13,19,21,24
175:3,10	68:7 89:24 118:9	68:3,5,20 70:2,6,8	78:13,21 79:12,18
Petroleo 285:12	127:6 154:19	70:12,12,14,15	82:7,9,20,22 83:6
petroleum 9:14 18:6	269:25 291:18,19	71:9 73:18 74:7,10	84:2,8,12,16,24
60:18 87:5,6,23	293:8,15,21 294:8	74:17,17 75:15,19	85:4,20 86:1,1,10
88:6 93:16 101:18	295:6 296:6	75:20,21 77:2,7	86:11,14,15 88:7
101:24 102:2,13	297:14	78:7,7 79:2,17	89:15 125:18,20
103:1,6,8,13 104:5	pictures 123:24	80:6,9,11 82:5,15	126:15 149:3,5,6,7
104:12,23,25	155:8	83:11,12,13,14,17	149:10,11 155:3

155:20,24 158:20 164:17,18 165:16 165:17,20,21,25 166:2 168:22,24 173:13 177:8,9,10 179:2,10 182:13 183:18 185:5,10 185:12,17,21 190:21,25 191:7 191:23 193:16 215:10,12,22,25 216:3 226:18 232:8,15 233:6,7 233:13,14 238:9 245:8,9,19,21,22 246:3,9,11,17,17 246:19,21 249:21 249:24 250:2 251:12 260:12 265:16 266:12 278:7,16 279:13 291:25 293:11 299:15,25 300:1,7 300:7,8,9	252:16 270:7 plaintiffs 20:16 21:16 22:12 137:4 147:20,24 148:6,9 148:14,25 149:4 149:10,14,19 156:5 164:11,13 164:16 167:3,7 168:1,23 171:25 176:8 194:4 222:1 223:24 301:20 304:3 plan 179:14 185:19 185:24 186:4,6,8 187:25 188:2,4,7 191:6,25 193:2 plant 99:1 229:8 plantations 243:1 plants 5:18 96:23 298:22 play 188:11 220:25 played 202:13 205:11 please 3:7,17 10:19 29:1 52:10 89:3,4 89:18 92:7,17 139:12 155:11 166:11 170:2 171:6 182:9 183:5 211:6,15 215:9 252:13 256:12,15 259:22,24 262:22 271:24 273:1 276:22 279:21,24 285:7 286:14 294:15 297:22 299:22 plot 158:20 161:23 163:21 204:9 284:16 plume 78:5,6 81:10 plumes 78:12 79:1 pocket 100:9 pockets 38:9 point 33:24 58:15	73:2 79:15 102:24 103:22 134:24 135:6 146:18 148:3 158:7 161:1 164:9 176:4,11 177:18,21,24 182:7,12 185:11 196:21,25 197:4 197:14 206:9 267:10 277:14 285:3 286:25 302:3,16 304:6 pointer 73:11 pointing 109:1 132:24 176:5 points 159:9 175:21 175:23,25 221:16 251:18 283:24 284:16,18,20,21 285:1 pole 294:21 policy 12:18 14:9,13 14:14,18 political 31:7 pollutants 5:16 217:22,25 218:15 polluted 26:15 pollution 9:13 10:24 11:6 17:9,14 18:3 18:10 24:13,20 125:22 126:4,10 224:24 225:20 226:2,9 231:25 234:19 241:12,15 298:5,15,16,19 polycyclic 9:5 pond 92:24 ponds 227:24 pool 106:2 poor 39:25 111:20 123:20 182:8 poorly 41:16 populace 76:9 portion 30:22 38:25 155:12 252:14	286:2 portions 45:22 151:11 portray 81:7 pose 96:7 206:3 posing 152:2 position 6:5 7:19 13:7,20 302:19 positioning 156:4 positions 206:4,10 possible 85:4 119:2 139:7 post 189:17 205:9 potable 236:8,9,13 236:13,14,20 potential 10:1 124:15 145:12 170:21 202:23 potentially 234:3,8 299:10 pour 68:19 poured 122:23 123:5,9,23 124:16 PowerPoint 51:7 127:18 289:19 powers 10:7 Pozo 282:23 307:17 ppm 141:21 153:14 178:22 179:1 185:6 193:13,16 285:4 ppms 153:11 practice 12:9,9 13:3 41:5,7 42:22 84:15 87:21 94:2,14,21 95:1,2 125:7 126:16,20,21,24 127:3 238:21,25 240:9,16,22 303:8 practices 26:7,8,10 83:5 85:19 87:12 231:20 234:1 235:25 255:22 263:19 264:5,8,10 298:3 300:13
---	---	---	--

301:1	Presidencia 253:8	problem 14:17	116:9,19 117:15
pre 234:1	president 13:22	104:2 277:16	117:17 172:23
predictions 215:1,3	pretty 245:16	problems 251:14	213:2,12 218:21
prefer 131:8 254:16	prevalence 201:9	276:1	218:22 219:19
preference 304:6	prevent 83:7 224:24	Procedure 1:18	227:7,22 232:6,19
prefix 67:15	225:20 226:2,9	178:18 273:24	238:9,16,19
preparation 188:12	previous 54:24 55:4	301:22	239:16 246:24
252:17 258:9	129:10 134:25	proceeded 192:6	247:5 277:4 299:4
262:24 264:19	167:20 186:4	Proceedings 304:19	producer 287:20,21
prepare 271:10	260:15 264:19	process 114:14	288:1,2,8,11,12,13
prepared 187:2	308:7	190:4 192:7 227:8	288:20 289:2
193:7,8 207:20	previously 28:3	processed 33:8 39:5	290:12
210:5,6,7,10,22	110:12 141:16	236:9	producing 34:2
214:12 230:21	142:4 164:9	processing 39:2	42:23 87:25 99:6
243:6 252:15	172:22 177:17	42:10 57:12 59:5	170:20 171:10
258:12 259:10	178:25 221:2	98:8 105:9,10,17	204:15
262:23 263:3,4,10	282:1 295:17	110:10,11,13	product 23:11
267:23 270:22	297:2 303:11	171:12,16 236:25	production 11:16
272:4,7 280:5,6,11	primarily 5:16 89:8	239:4 257:8,24	20:21 26:17 32:2
280:14,17,21,25	107:14 173:4	produce 38:6 63:15	33:7,18 37:3,11,12
281:9,11	289:13	276:5	51:3 55:3,5,8,13
preparing 187:6	primary 48:11 49:3	produced 28:4,5,13	56:5 58:16 63:7,16
272:4 280:9	80:23 107:8,10	28:14 39:4 40:11	89:21 90:3,8,13,17
presence 79:9 102:9	principal 56:19	40:16 41:24 42:2,6	91:5 92:5,20 93:13
109:15 110:24	prior 23:21 24:15	42:8,9,11,15 43:4	93:17 95:2,18
112:18 153:3,18	91:16 92:20	43:8 46:18,19,21	97:11 99:1 118:6,7
present 2:21 45:2	114:10 128:14	47:2,7,8,12,22	136:16 169:17
113:10 114:23	129:8 131:2 155:5	48:1,6 61:18 84:9	170:11,11 171:5
116:6,7,19 124:8	169:19 170:9	85:10 88:16,24	172:6 199:12
126:5 165:14	173:22 175:3	90:17 93:22,22,25	211:18 213:2
184:22 246:9,11	207:2,13 226:17	94:3,8 96:3,12,14	214:5,7 219:5,17
249:12 294:2	227:19 228:2	96:22 97:2,18,21	219:23,23 239:22
298:21	229:25 233:4	98:8,10,14,19,25	243:7,11 255:10
presentation 27:23	234:2,7 237:9,21	99:7,17,23,25	255:14,16 260:3,5
28:1 29:18,24 30:1	242:3,5,22 249:13	100:12,15,17	260:8 303:3 306:5
53:6 56:19 127:18	253:10 273:4	101:1,6,7,10,13,17	productions 29:11
131:9 137:22	288:2,4 293:14	101:23,24 102:2	products 152:6
180:16,23 187:7	priorities 8:16	102:19,19,25	153:16
206:3,12 209:1	private 14:10	103:13,14 104:6	professional 1:23
258:25 262:5	probably 38:11 51:9	104:22,24 105:15	5:25 6:2 27:5
306:11	55:2,4 68:17 99:8	106:25 107:2,9,11	308:5
presented 47:11	114:7 150:16	107:17 108:1,8	program 4:22 5:1
104:13 117:8	190:24 191:3	110:20,25 111:8	118:18,22 119:8
124:15 169:3	195:14 245:17	113:1,5,8,11,12,17	119:14,15 120:4
212:9	267:9	114:12 115:4	120:10 121:13,14

121:24 122:9,17 153:25 158:15 217:14 222:25 229:24 230:6 287:7,18,21 291:14 programs 173:3 prohibited 217:23 project 8:6 15:17,25 23:4,6,9 74:24 189:1 230:2 232:11 237:15,23 238:12 241:3 243:14 244:3 249:6 261:15 277:19 278:2 279:4,5 286:25 287:8 289:3 298:21 projects 16:3,3,15 promulgate 87:10 87:15,17 promulgated 9:20 pronunciation 50:14,16 proper 211:11 303:22 properly 62:8 property 145:8,9,12 145:16,25 propriety 164:1 302:9 protect 89:13 146:21 protection 7:11 64:21 104:24 197:18,21 224:23 225:6,17 240:24 241:12,15 275:16 provide 7:21 11:4 22:11 132:22 142:24 146:8 169:15 208:10 212:7 224:15 257:5,22 268:6	303:19 provided 8:7 22:2 180:22 241:11 272:7,10 281:3,10 284:8 289:10,11 301:21 303:22 provides 213:1 214:11 224:21 providing 8:6 136:11 291:14 Province 31:10 provinces 31:6 Provincial 253:7 pseley@gibsondu... 2:6 Public 1:24 305:25 308:6 publications 130:7 published 114:4 203:11 265:9 pulled 210:2 pulls 296:24 pumped 59:13 63:6 63:15 72:10 85:12 90:25 pun 40:1 purchaser 145:12 pure 144:12 purple 37:21 41:22 155:19 purpose 21:9 32:21 35:18 36:18 48:18 56:14 64:24 65:5 78:4 88:10,13 99:19 100:5 107:22 108:6 109:19 125:14 129:6 131:12,15 132:18 134:22,24 135:13 139:14,18 139:20 142:11,15 142:24 147:4,7,16 147:17 154:18 164:5,8 165:12 169:12,15 173:17	173:19 175:17 177:21 191:19 193:21 196:12 206:9 211:22 256:18,21 268:4,6 274:6 purposes 91:12 pursuant 1:17 218:5 pursued 4:18 Push 74:4 put 9:24 27:23 43:21 59:25 64:19 72:9,11 75:4 77:5 83:22,22 84:9 85:11 91:8 101:9 116:21 117:11 120:1 132:22 137:22 146:12,13 147:17 148:3 159:15 176:11 180:13 183:13 185:9 198:5 206:8 241:21 244:20 261:9 putting 38:6 61:11 85:11 89:15 109:3 115:19 261:6 P-E-E-R-S 267:5 P.E 282:8 P.G 282:8 p.m 127:12,13 180:8 180:9 230:16,16 286:21,21 304:19	144:22 145:5 147:13 150:18,24 151:5,15,20 165:10 168:12 170:2 179:15 180:13 183:21 200:9,10 206:3,5,6 218:2 220:1 223:3 225:25 234:5 239:2,13 250:19 256:12 259:6 261:1 265:9,17 266:4,13,20 280:1 293:2 299:21 302:13 Questionable 127:1 127:3 questioning 288:10 questions 28:3 151:24,24 152:1 200:8 214:18 277:12 291:9 301:5,6 quick 52:11 265:24 266:9,18 281:18 286:13,15 quicker 63:13 quickly 270:21 271:24 quite 12:24 41:17 61:17 85:25 111:11,14 131:5 135:6 136:6 140:12 236:5 251:14,14 284:19 Quito 36:5 203:14 quote 210:24 220:6 220:10,13,20 221:16 224:13,15 224:17,21 225:1 226:19 231:3,5 232:5,14 233:3,23 233:24 238:7 240:25 241:21 243:5 244:17,21
Q			
qualify 79:7 86:8 264:18 quality 136:22 quantified 150:4,21 quantify 151:13 question 20:2 21:9 24:17 25:9 30:20 65:14,20 67:7 69:9 95:15 101:5 114:20 135:12			

244:25 246:23 247:22 248:6,14 248:14,25 250:9 250:23 quoted 249:22 251:11 quotes 210:2 211:21 211:23 219:12 230:22 246:7,8,16 248:2 249:22 quoting 235:9	RCG 10:13,18,20 11:12,17,17,25 12:4,5,5 13:3 reach 7:20 25:2,11 25:23 26:13 80:12 298:1 299:13,23 300:12 reached 249:5 278:18 299:3 reaches 80:19 reaching 81:11 read 34:5,11 35:11 40:8,24 41:12 42:5 43:3 44:8,9 56:10 59:25 63:24 65:24 67:25 84:21 85:1 85:24 86:20 89:7 90:20 91:4 97:20 100:20 108:12 115:1 118:17 123:8 125:18 129:1 130:15 172:21 178:20 209:2 211:5,14 212:14,15 213:10 213:12 224:6 237:4 242:20 253:6 256:14 258:21 259:21,23 274:4 277:6 283:5 285:7 305:3 reading 74:23 97:15 171:9 189:20 204:19 231:21 259:22 286:3 reads 213:21 ready 127:6 realize 240:1 really 7:2 64:18 66:10,10 99:5 105:24 128:8 144:22 209:16 Realtime 1:23 reask 95:15 reason 59:2,6 79:23	82:1 99:22 104:4 123:12 134:19 148:24 149:12 150:25 250:18 254:7 256:24 261:8 262:6,12 reasonable 46:1 160:13 253:25 reasons 20:7 103:17 168:17 176:24,25 177:2,4 276:24 recall 15:4,13 27:24 27:25 35:25 43:10 61:6 96:19 97:15 97:17,19 115:19 116:21 117:3,3,11 119:22,25 120:6 121:8,8 122:3,7,14 122:15 126:22 132:12 140:14 147:7 148:20,21 149:12 160:7 181:2 186:9 188:15,15 190:23 191:1,25 193:9 198:7 199:4,16,18 201:4 203:12 204:19 210:18 214:6 218:18 224:20 226:25 228:14,17 230:5 231:22 234:13 235:23 242:25 243:1 245:15,24 250:7,18,20 251:24 254:20 255:17 256:4 257:20,21 258:3 259:13 261:2,3 262:25 263:9,20 266:17,19,21,23 267:7,14 272:4 273:7,22 279:4 280:8,9,23,24,24 281:1,5,10 288:13	288:14,24 289:7 291:7 292:9 293:1 received 4:19 36:3 Recess 52:23 67:2 93:5 127:12 180:8 230:16 286:21 recognize 188:21 189:4,5 208:14 253:14,17 272:13 recognized 88:18 recollection 160:11 210:7 227:10 256:17,25 recommendations 7:21 8:6,7 recommended 163:4 275:17 recommends 275:25 record 3:5,18 22:16 22:20 52:21 53:1 66:24,25 67:4,12 93:3,8 127:10,15 180:6,10,13 183:3 195:18,21,21,25 203:15 230:14,17 252:25 286:19,22 301:14,15 303:24 304:1,14,17 305:5 records 170:7 203:14 269:8 recovery 248:19 249:2 red 100:3 142:20 reddish-salmony 39:7 reduce 94:21 reduced 171:15 176:2 308:11 refer 193:5,11 220:10,15 246:21 reference 145:4 172:14 177:20 198:18 203:3 208:1,2 226:20 239:13 249:19
---	---	--	--

254:14 278:22 306:9 307:2 referenced 187:20 208:25 referencing 172:15 referred 32:10 215:20 220:17 279:1,3 referring 172:18 185:17,25 186:4,8 187:22,24 203:6 214:4 220:9 227:3 227:18 233:10 236:23 251:5,7 refers 190:23,24 191:5 199:6 286:1 refineries 43:22 reflect 87:11,25 reflected 82:14 116:25 264:6 269:12 reflects 260:21 refresh 160:10 178:4 227:10 256:17,25 regard 18:23 253:1 277:12 304:2 regarding 87:20 88:23 94:2 112:18 188:12 224:7 226:14 230:21 regardless 204:4 221:25 region 24:10 123:17 144:4 197:8 regional 7:12 8:22 Registered 1:23 308:5 registry 203:14 regular 42:22 121:15,19 regulate 14:19,23 138:13,16 regulated 18:7 61:15 138:6	regulates 14:19 regulating 139:8 151:12 regulation 9:15 109:4 151:7 198:3 198:6 217:21 regulations 10:4,6 14:22 18:2,6,9 41:5 62:2 83:4 84:1,15,21 106:24 138:10,11 198:2 234:4,9,15,20 264:7 300:25 regulatory 9:19 84:7 213:23 214:3 217:23 223:15 rein 6:13 reinject 91:9 93:18 reinjecte 89:22 90:15,24 92:5 93:23 98:11 101:11 172:23 reinjecting 90:13 100:16 re injection 92:1,21 92:22 107:9,15 reinjects 232:20 238:18 related 79:14 176:5 308:14 relates 9:22 release 176:7,8 217:25 231:8 released 215:11,24 226:18 231:7 releases 215:15 232:7 relevance 17:16 25:6 180:16 214:18 225:10 231:14,15 262:16 264:17 272:20 274:14 relied 189:13 207:12 209:3 223:23	rely 187:9,12,16,17 209:10 remedial 179:14 185:19,24 186:3,6 186:8 187:24 188:1,4 191:5,24 193:2 remediate 8:2 159:22 219:8 remediated 159:21 160:18 183:16,23 184:9 218:1,4 274:11 278:7,15 remediation 24:13 24:19 120:13,14 160:24 183:19 184:13,19,20 185:13 191:1 192:10,14,18,23 193:3 214:1 218:23 273:3 307:8 remember 8:10 9:7 13:8 22:15 70:21 71:1 92:8 114:6,8 114:17 116:14 121:23 130:8,10 132:15 159:19 160:1,4,4,8,15,16 160:21,22 175:15 177:18 178:3 187:23 189:25,25 201:7 207:14 208:23 213:9 214:21 219:21,22 224:13,14 226:24 227:2 230:24 235:1,2,22 261:11 263:23 264:1 265:8 277:7 287:20 292:11 294:25 295:4 remind 137:9 remnants 66:15 removal 121:10	remove 17:14 24:13 24:20 28:18 120:10,21 121:4 184:21 removed 121:18 135:22 136:2 170:22 274:25 removing 62:7 121:24 Rep 307:4 repeat 24:17 256:11 299:21 repetitious 82:8 rephrase 65:14 101:4 170:2 replace 259:8 report 18:21 22:21 49:17,18 108:4,10 108:11 113:4 114:4 118:17 120:8 131:4 186:10,12 187:1,3 187:5,8,20,22 188:4,7,11,16 189:11,13,17,20 196:6,8,20 197:12 198:23 200:7 207:20 208:2,3,20 208:22 210:4,7,25 211:23 212:7 219:13,22,22 224:10 226:25,25 230:23 231:21 232:4 234:25 235:5,8 241:5,22 241:24 243:6,6 248:1,3,4,9,11 251:24 252:15,17 252:24 254:9 255:7,8,12,17 256:4,18,21 257:2 257:12 258:3,9,13 258:18,21,24 259:9,10,14,20 260:22 261:17
--	--	--	---

262:8 271:15	143:2 181:4	173:17 174:2	266:18 281:6,13
280:9 306:13,14	264:20	176:14,20 184:14	281:18
306:18	reprise 183:6	194:25 203:21	reviewed 127:21
reported 149:19	reproduce 211:10	respond 118:19,23	209:7 210:17
196:19 200:15	reproduction	120:4 173:5 303:9	214:20 267:9
201:4 202:9	234:24	responded 122:6	richness 220:21
218:11 219:24	Republic 159:22	respondent 200:15	RICO 19:24 20:9
Reporter 1:22,23,24	176:6	201:15,17	rid 120:22 240:12
3:6 29:1 66:23	request 27:24	respondents 202:8	rig 55:22
73:24 123:1	252:15 270:22	response 18:25	right 31:9 32:25
221:19,21,24	REQUEST(S)	39:13 121:19	39:18 43:11 50:11
308:5	306:5	122:9,17 217:14	55:24 70:14,15
REPORTER'S	require 61:17	responses 122:16	73:10 80:4 89:3,18
308:2	248:18 249:1	206:13,14	90:1 92:23,23
reports 22:16,19,22	required 192:2,15	responsibilities 7:18	93:24 97:19 100:3
43:3 94:6 97:8	192:17,22 213:22	27:4	101:22 109:8
123:8 130:9	214:15 224:22	responsibility 7:20	124:13 128:5
132:13 177:9	requirements	191:10	132:17 136:10
195:23,25 207:11	217:24	responsible 16:13	144:5,13 149:5
209:3 211:11,12	requires 149:25	23:6,7,10 35:14	154:12 156:12,21
211:12,13 212:1,6	requiring 211:17	229:20	157:9,10,14,24
230:23	249:14	rest 29:23,25 213:11	171:12 186:19
represent 31:3 37:6	research 6:7,9,10,12	271:11	201:7 204:12
38:12 40:3 108:15	6:17,19,24 267:7	result 5:5 17:7 19:8	214:22 228:25
108:17 109:9	267:11 273:6	25:21 134:5	229:3 231:5
159:12,16 200:20	279:4	215:14 308:17	237:13 239:9
252:23 253:19	researchers 112:24	resulted 219:8 287:7	246:8 253:9
255:2,4 283:25	reserve 79:2 265:16	resulting 16:17	264:11 266:8,17
303:25	303:15	21:19	282:20 285:13
representation	reservoir 100:7	results 27:7 133:21	288:14 289:16
51:15 54:10,11	residents 21:17	134:1,7,17 135:4,5	290:21 291:5,23
58:22 68:25	Resource 12:16	161:12 163:15	301:13 302:8,18
106:20 254:1	resources 4:20,25	182:16 208:21	304:14
259:15 293:24	5:17 7:24 8:5 10:1	257:2,3,11 274:22	rights 303:16
294:4 295:21	11:9 26:23 224:24	276:5 284:7	right-hand 50:7
representations	225:7,18 240:25	retained 216:1,6	58:4 68:8,8 97:25
155:8	241:12,13	retaining 215:11,24	105:5 143:22
representative	respect 18:1 44:6	returnable 303:7	281:24 282:7
114:11,20 270:25	47:11 56:4 87:20	Reuters 50:12	right-most 269:17
represented 30:1	88:7 94:3 112:17	reverse 192:16	rise 204:13 205:10
40:2 105:8 179:10	134:6 138:2 140:2	review 119:7 121:22	river 9:3,3 15:17,23
223:25	140:3 141:15	140:11 168:3	24:24 38:14,20
represents 30:14	142:2 143:10	187:4,8 209:10	41:23 45:12,20
40:20 74:7 136:1	147:23 157:25	210:20 258:10	46:3,3 75:23,24
140:25 142:22	167:1,11 170:14	265:14,24 266:9	76:1,2,19,23,24

77:2,4,6,7 80:17 80:19,20 81:12,13 104:8 106:2,13 110:15 226:19 228:2 236:6,15 237:10	row 91:23 136:18,20 285:24 286:4 RPR 308:22 rules 1:17 14:23 301:22 run 34:2 236:25 running 45:10,11 118:5,7,8,10,14 154:19 159:10 runoff 227:8 232:6 232:7,22,24 236:18 237:2 runs 39:8,9,10 40:14 75:20 296:16	163:22 165:16,20 181:5,5 195:6 244:23 sampled 131:11,20 131:24 132:1,7 133:13 135:1,3 140:3,20 141:13 141:14 142:6,18 142:23 143:1,4,10 146:23 148:5 149:1 158:11 165:23 167:2 181:11,17,18 182:20 185:11 samples 112:22 113:1 114:7 117:16 133:3,8,18 133:24 134:12 135:3,12,14,17 136:1,13,13,15,16 136:22,24 137:1,4 142:1 143:17 147:2,11,14,15,18 147:24,24 148:5,7 148:8,9,10,16 149:2,5,7,9 153:9 153:16,18 156:5,6 156:9,10,24 158:8 158:10,12,16 161:12 162:18,23 163:15,18,20,24 164:2,16,18,23,24 165:2,3,5,6 166:5 166:20,22 167:1,7 167:11,14,18,21 167:25 168:17,20 168:22 179:9,13 182:18 269:19 270:8,8 284:8,10 sampling 115:12 133:1,1 134:16 135:7 136:7 151:6 153:25 161:20 164:20 165:13,15 168:6,6 175:1	181:12 182:8,15 182:21 194:4 284:7 San 203:10 sand 216:23 Sara 2:22 satisfactory 218:23 satisfy 29:3 saturated 276:11 save 198:4 saw 57:24 58:23 64:4 66:18 67:8 69:1 106:20 155:9 216:10,24 232:10 232:13,14 238:12 238:21 239:3 245:4 268:9 271:12,15 293:24 295:22 saying 102:18 107:7 240:12 241:15 248:4,4 289:7 says 29:22 33:4,6 86:20 108:11,13 121:13 136:21 139:21 176:24 177:13 193:12 194:10,13 195:14 208:16 214:5 215:10,23 216:20 217:18 218:15 224:4 226:17 227:5 231:5 232:4 233:3,24 236:5,5 236:18 237:13 238:3,8 239:21 240:3,24 242:1 243:7,21 244:10 244:21 246:23 248:16 250:9 251:24 253:6 255:15 257:5 273:12 277:15 278:5 282:7,23 283:17 285:16
	S		
rivers 9:1 26:16 38:11,12,13 42:12 44:10 45:7,10 46:3 76:8,9,13,14,15,16 77:12,20,25 80:17 94:13 95:3,19 96:3 96:8,20,24 97:10 97:17 98:11,15,20 99:1 101:13 102:3 102:4 103:21 109:6 110:5 113:13 136:14 172:25 228:14 229:19 232:5,13 238:10,17,20 239:23 298:17	S 3:2 Sacha 37:11,17 43:9 43:10,10 105:10 106:13 112:17 113:2,7,22 194:20 194:21,21 232:24 255:10 282:23,25 307:17 safety 88:3 SALAZAR 1:11 salinity 260:8 salt 90:1,2,2,6 92:18 96:22,24,25 97:2 101:17 102:22,24 103:16,24 104:19 219:7 saltiness 96:20 salty 90:4 Salud 130:3 sample 70:13 133:19 135:19,20 135:23 137:12 140:21 148:14 149:23 153:25 154:2 157:12,17 157:18,20,25 158:3,18,22 159:3 160:25 161:4,8,15 161:17,24,25		
RNA 6:24 road 76:23,23 118:10,14 124:25 roads 77:21 122:23 123:6,10,10,13,20 123:23,25 124:3,7 124:16 125:6 240:3,10 roadways 243:11 Rochester 4:1 6:5,7 6:20 rock 59:15 63:12 rogue 210:16 role 20:12 23:3 188:10 202:13 205:12 220:24 Roll 292:12 rough 293:17 roughly 7:14 85:2 133:9 161:18,24 162:1 179:3,4 202:7 207:3 288:24			

296:24	252:2 259:23	281:7,25 282:4,5,7	18:15 19:25 20:24
scale 32:23 156:17	265:16 274:21	282:9,11 283:14	21:3,8,24 24:15
157:13 179:19	277:24	283:16,20,23,24	25:5,15,19 26:1,5
243:2 300:7	secondary 243:12	284:16 285:13,14	26:18,22 27:8,14
scales 179:22	secondly 218:18	285:15,17 292:4,6	27:17 28:2,6,9,15
scene 291:22	Secretary 253:8,16	294:12,14,23,23	28:20,24 29:2,5,7
schematic 40:1,7	section 127:18,20,24	295:9 296:10	29:10,14 30:15
72:17,21 73:21	246:3 259:19	297:18	31:4,17 32:7,17
74:14 78:4 79:1	265:6,10,16,21	seeing 61:6 228:14	33:2,21 34:18,23
81:6	266:2,5,10,19	230:5 292:14	35:9,20 36:9,13,21
school 3:22	267:6,8,8,12	293:14	38:16,23 39:12,23
scientific 23:8,10	289:17	seen 32:1 33:4 41:10	40:5 41:3,8,19,25
150:12,25,25	sections 234:25	43:1,1,9 44:11	42:13,17,20,24
176:13,15,20	267:13	45:7,9,20 50:23	43:5,15 44:2,7,13
206:4,11 272:14	sediment 70:17,18	51:9,10,18,21 52:1	44:17,20,24 45:4
273:5	80:20 133:2	52:5 53:13 54:16	45:22 46:5,9,12,24
scientifically 152:4	135:20	55:19 56:8 57:5	47:4,9 48:4,9,20
152:10	sediments 24:24	66:1 67:24 68:15	49:8,15 50:1,8,20
scientist 10:22	104:1	70:11,13,14,16,19	51:4,16 52:2,6,8
16:10 94:10 103:5	see 30:25 31:14 37:2	70:20 75:4,5 76:12	53:7,15 54:1,14,21
114:21 124:15	37:4 38:3,24 39:1	76:13,14,22 77:6,7	55:9,15,25 56:6,11
144:16 152:13	39:6,7 40:9 54:25	79:8,15,18 85:15	56:16,25 57:3,9,23
188:25 222:14	55:22 66:12,14,16	87:23 97:3 99:6,8	58:2,5,17 59:10,22
229:6 231:10	74:14 76:25 77:1	101:22 123:15	60:5,8,11,22 61:2
261:22 266:22	80:5,6,7,9 89:9	126:11 167:24	61:12 62:10,17
scope 185:20,23	92:21 99:12 100:8	173:11 207:22	63:2,17,21 64:2,8
186:6 188:6,9	121:4 123:11,19	216:2,13,15	64:14,25 65:3,8,11
191:8 219:21	125:21 135:12	232:18,19,22,23	65:18,23 66:6,20
Scott 287:19 291:22	136:6 154:1 155:3	236:24 239:21	67:10,13,16,22
292:21	157:13 159:1	240:11 242:16	68:6,10,21 69:4,15
scrapes 64:18	163:17 167:17	243:20 281:13	70:3,9 71:13,20
screen 27:20 73:3	175:10 180:16,19	segment 289:21	72:1,5,14,19,25
73:18 92:23	182:22 183:22,22	297:24	73:20 74:11,25
291:18	188:20,22 191:6	segments 212:7	75:7,13,16 76:3,10
se 17:11	194:17,19,23	select 51:6 235:21	76:20 77:14 78:2,9
seal 308:19	199:22 215:25	selected 232:4	78:15,23 79:4 80:2
Sebastian 203:11	225:1 226:14	233:24 244:16	80:13 81:5,8,20,25
second 79:22 89:16	227:16 238:7,16	257:17	82:18 83:2,9,20,24
104:4,19 128:16	238:18,20,24	selecting 211:23	84:4,19 85:6,22
147:17 162:24	239:5,14 240:25	222:16 223:10	86:6,18,25 87:13
178:22 187:19	244:20 248:13,14	selection 164:2	88:11,21,25 90:11
196:21,25 197:4	253:4,23 254:3,22	190:5 230:22	90:18 91:1,13,20
210:3 211:5	256:7 269:11	selective 168:5	92:9,12,25 93:19
212:18,25 217:18	270:5 273:8,21	selectively 158:9	94:4,15,19 95:6,13
226:13 241:25	277:7 280:10,13	Seley 2:3 17:16 18:4	95:21 96:1,5,9,17

97:5,13 98:1,21	176:17,22 177:3	242:24 243:16	sensory 39:21
99:3,15,20 100:18	177:16,22 178:13	244:4,13,18 245:5	sent 39:5 43:22 59:5
101:2,8,20 102:5	179:7 180:12	245:12,23 246:13	133:24 135:23
102:15 103:2,10	181:8,20,22 182:3	247:3,6,15 248:10	136:2 171:11
104:10,15 105:3	182:10,24 183:10	248:22 249:7,17	209:24 210:9,17
105:18,20 106:17	184:2,11,16,23	250:4,13 251:1,23	235:12
107:3,5,23 108:24	185:2,8 186:1	252:6,9 256:3,10	sentence 34:8 213:1
109:16 110:6,16	187:10,15 189:12	256:22 257:9,14	213:11,20 214:4
111:1,17,23 112:4	189:22 190:8,14	257:18 258:1,15	214:11 227:14,19
112:8,20 113:14	191:14,20 192:8	258:19 259:11,17	240:1 242:1
114:1,18,24 115:9	192:11 193:14,22	260:1,24 261:24	273:12 276:7
115:13 116:3,13	194:8 195:2,11,19	262:9,15 263:14	278:23
116:17 117:9	196:2,13,23	264:3,15 265:11	sentences 227:16
118:1 119:4,18,23	197:13,22 198:8	265:18,22 266:6	sentencia 128:23
120:16,20 121:6	198:15,20 199:9	266:15 267:19	129:4 196:9
122:1,20,24 123:2	199:13 200:3,16	268:17,25 269:6	separate 37:11
123:7 124:4,10,18	200:19 201:2,12	269:21 270:1,12	130:8 176:12
125:9,15 126:3,7	202:10,15,19	270:15 272:11,19	183:8 209:25
126:18 127:2,9	203:7,23 204:17	274:3,12,18	250:20 261:2
128:4 130:19	205:14,19 206:1,6	275:13,19 276:6	288:19,22
131:13 132:3,8,20	206:16,21,24	276:16 277:11,20	separated 39:5
134:8 135:15	207:3,8 208:9,14	278:3,9,19,24	40:16 42:7 43:18
137:20 138:3,22	208:18 209:5	279:7,14,22	90:8 110:14
139:2,16 140:7	210:12 211:1,7,20	280:19 281:4,16	separately 224:16
141:2,18 142:13	212:11,17,22	284:2,13,23 285:2	separates 166:15
143:13,25 144:20	213:16 214:17	285:22 286:7	separating 275:24
145:13,21 146:2	215:6,18 216:7,12	287:4,9,24 288:9	separation 249:24
146:16 147:5	216:17 217:2,9	289:6,15 290:2,24	250:2
148:1,18 149:17	218:6 219:1,10	291:20 292:17,24	September 1:6,20
150:14 151:3,21	220:11 221:5	293:9,22 294:1,6	3:4 224:4,7 308:19
152:7,17,24 153:7	222:5,17 223:11	294:11,18 295:2,7	sequence 227:15
153:21 154:3,9,21	224:11 225:8,14	296:1,13 297:1,5	series 49:19 117:21
155:25 157:2	225:19,22 226:4	297:20 298:7,13	137:8 156:11
159:6,13,24	226:11,22 227:13	298:18,25 299:12	196:5 210:1
160:12,19 161:2	228:8,20 229:1,11	299:18 300:4,11	serious 8:17
161:10,22 162:15	229:21 230:3	300:18,23 301:2	serve 19:17,20 20:7
163:5,10 164:3,7	231:12 232:1,12	301:13 302:2,18	21:22 302:6,20
165:7 166:12	233:1,8,16 234:10	303:5,10,19,23	served 20:12 91:12
167:4,12,22 168:7	235:16 236:11,16	304:13	191:19 303:8,11
168:14,25 169:5	236:21 237:6,11	send 211:23 235:22	service 11:22 12:12
169:13,25 170:6	237:16,24 238:13	244:17	12:13 15:15 16:1
170:17 171:7	238:23 239:1,10	sending 210:15,19	17:3 303:15
172:10,16 173:14	239:18,24 240:6	sense 128:14 219:20	services 11:5 22:2
174:4,18,23	240:14,18 241:8	sensitive 141:7,7	22:11
175:12,19,24	241:17 242:7,13	221:15	set 32:11 40:23

125:20 169:3	163:21 167:19	sic 153:3 230:23	58:11 60:1 64:17
195:1 308:11	190:4 212:3 219:5	244:11 285:12	74:8 79:10 85:10
sets 137:24	244:8 291:13,13	side 68:1 70:12 71:9	85:14 98:10
seven 301:21 302:11	showing 30:21	75:20 83:17 97:25	109:12 113:23
sewage 226:14,17	91:15 102:21	105:5 108:12,16	142:22,22,22
226:20 227:7	115:23 133:23,25	143:22 147:17,17	147:10,10,12,14
228:24 229:9,18	136:19 142:17	154:18 188:20	147:15 153:24
229:19 230:10	147:9,11 157:16	215:22 238:4	155:21 156:6
231:4,6,8,11,23	158:8,9,17 164:8	282:22 295:10	160:3 162:21
237:9	167:24,25 176:23	296:9	165:14 170:19,21
shapes 284:18,21	181:10 185:10	sides 68:19	170:23 171:1,4,15
shareholder 13:12	190:15 200:13	signature 308:19	171:17 175:2
shift 138:13 252:1	276:25 286:4	significance 115:11	177:25 178:6
shifted 139:6	289:20 293:8	122:22 134:20	181:5 184:8 188:6
ships 43:22	shown 38:21,24	143:21 146:13	190:21 191:9
short 127:8 180:3	54:19 68:14 156:2	174:20 189:11	192:15,20 238:3,4
286:18	156:11 157:5	significant 71:25	244:10 260:10
shorten 10:18	162:21 168:19	103:4 124:14	267:24 268:9,16
shorthand 1:22	200:12 204:9	145:24 212:8	268:20 270:5,24
308:10	280:24	signpost 241:21	271:4 293:11,12
shortly 56:5	shows 35:22 36:11	similar 14:3 33:14	294:3 295:8 297:8
shot 297:15	53:10 55:6,20	50:22 51:17	sites 7:22,23 8:3,9
shots 111:21	57:21 58:4 81:9	113:10 114:22	8:16,17,19,20,24
show 50:6,19 51:11	89:8,20 101:23	116:4,5 143:15	8:25 9:7,12,24,24
71:5 72:21 73:3,17	107:25 109:18	167:19 168:16	10:23,23,24 11:11
75:14 78:21 80:4,5	113:4 125:17	207:24 208:23	11:14 14:5 17:18
88:13,17,23 89:17	131:17 135:17	221:15 245:18	26:17 49:25 53:10
94:2,24 96:14	136:25 140:19	267:13 273:4	53:13,17,20,25
108:6 110:1 111:4	142:5 143:15,16	291:11 297:3	54:3 55:6,13 56:9
112:16 116:8,19	146:22 154:24	similarly 264:18	57:19,21,25 58:9
117:17 123:24	155:16 157:7,23	simply 279:12	64:1 77:20 81:16
133:19 142:15	158:20 161:12,23	single 138:8 178:16	85:16 86:2,12,16
147:8,23 148:6,9	166:19 167:6,14	207:22 245:1	110:7,9,9 131:11
148:10 155:22	174:11,25 203:25	288:21	131:20 133:13,18
161:21 162:7,18	271:12 280:6	siphon 215:15	135:1,3,4 140:5,20
162:22 164:13,15	285:21	siphons 215:10,20	141:20 142:6,18
167:1 170:7,13	Shushufindi 37:9,20	215:23	143:4,10,16,19
172:21 179:17	58:9,10,11 112:17	sir 20:25	144:2,5,6,12
184:1 194:15,24	112:18 113:2,3	sit 119:16 201:7	146:22 147:11
199:22 201:9	154:19,25 160:17	275:8	148:21,23 153:1
212:2 260:11,15	165:3 228:3	site 8:12,13,14 9:4,8	168:24 169:17,22
270:9 289:17	268:20 290:22,23	9:16,17 14:17,21	170:4,7,15 171:24
293:1 297:14	shut 118:21 155:4	15:22,22,24 32:2	172:1,3,6 173:21
showed 102:20	170:9,20 173:22	50:21 53:11,22	173:21,23 174:3,7
133:6 148:14,16	175:3 293:13	54:12,23 57:20,22	174:12,14 175:8

181:5,11,12,16,18	102:18 104:20	small 77:19 243:2	80:10 81:6,15,23
181:25 182:19,23	106:23 107:7,17	277:15 294:20	82:4,25 83:8,25
183:16,17,19,23	107:22,25 108:6	296:15	85:3 86:3,14,22
184:5,5,21 188:8	109:20 110:20	smaller 30:25	87:3,18 88:22 89:5
211:19 217:20	115:19 117:11,21	smell 39:20 71:3,11	89:23 90:12,23
218:3,10,13	117:24 118:9	270:6 292:10	91:11,21 92:11,14
219:23 222:25	122:19,22 125:14	296:25 297:10	93:1,9,24 94:9,18
233:14 237:1	125:14 127:24	smelled 70:17 71:3	94:23 95:14,24
243:11,22 244:11	128:2,6,12 129:5,6	271:13,15 297:4	96:6,13 97:6,22
244:23 245:1,2,4	129:7,10 131:9,10	smelling 71:7	98:5,22 99:16
246:18 247:21	131:12,15,17	smells 71:6 296:24	100:2,25 101:4,12
248:5 249:12	132:17,18,22,24	smoke 125:24	102:1,8 103:3
255:24 257:4,7,12	133:6,19 135:1,11	Smyser 2:9,9 3:6,12	104:11 105:4,19
257:16,22,24	135:13,17 137:7	17:25 18:11,25	105:22 106:19
258:6 260:4,12,13	138:9 139:12,12	19:7 20:5,6 21:2,5	107:4,16 108:9
260:14,17 267:25	139:15,19,20	22:9 24:18 25:11	109:7,19 110:7,19
268:7,11 306:23	142:10,10,12,15	25:17 26:3,13,20	111:15,19 112:5
307:5	143:16 146:24	27:2,10,18,19 28:5	112:13 113:9,16
sitting 214:21	147:1,2,4,7 154:13	28:8,12,17,22,25	114:5,19 115:10
290:19,20	154:14,17,24,24	29:3,6,9,13,15,16	116:2,10,16,23
situated 242:1	166:6,7 167:20	30:19 31:9,21	117:20 119:6,20
situation 83:23	169:10,12,15	32:19 33:9,24	120:12,18 121:2
223:18 242:5	170:9 171:23	34:20 35:13,25	121:20 122:18,21
six 8:25	173:16,17,19	36:14,25 38:21	123:4,16 124:6,13
size 51:25 99:8	175:14,17,21	39:15,24 40:12	125:4,13 126:4,14
skimming 269:15	176:11,16,23	41:4,20 42:14,21	127:1,5,16 128:5
skip 196:7 270:12	177:20 180:15,22	43:6,23 44:5,14,21	128:10 130:23
slide 30:5,11,12,13	181:1,2 182:5,7	45:1,24 46:10,15	132:6,10 133:10
32:20,22 33:6	183:5,7,8,9,13	47:1,10 48:10 49:9	134:18 135:19,25
35:16,16,18,22	185:4,4 187:6,19	50:2,11 51:6 52:3	136:4 138:1,17,24
36:2,15,15,18	187:21 188:12	52:9 53:2,16 54:9	139:11,18 141:11
39:25 46:18 48:11	190:3,4 191:19	54:17 55:11,18,24	141:25 143:21
48:11 49:3,10	193:7 196:12,17	56:2,12 57:1,7,24	144:10 145:6,22
52:10 53:3,5 54:9	198:17 203:1,1,6	58:3,19 59:20 60:3	146:10 147:22
54:18,19,19,23	205:25 206:2,8	60:9,23 61:8 62:11	148:11 149:15
56:13,13,15 63:4,9	207:1 208:1,3	62:21 63:1,3,18	150:11,19 151:18
64:10 72:16,16	262:5 306:11	64:3,9,23 65:1,13	152:3,11,23,25
73:2 79:23 80:5	slides 48:13,13,16	65:22 66:3,7 67:6	153:15 154:4,12
81:9 82:5,15 87:4	48:19,22 101:9	67:12,17,18 68:7	155:7 156:1,13
87:4 88:8,10,13,23	109:3 117:22	68:24 69:5,17 70:5	157:19 159:8,18
91:12 93:15,25	125:17 137:8	70:21 71:16,23	160:8,16,23 161:6
94:1,24 97:23,25	196:6,9,12	72:2,15 73:1,6,15	161:20 162:3
98:6 99:17,19,22	slightly 183:15	73:17 74:1,9,21	163:3,8,11 164:6
100:14,16 101:5	264:23	75:9,14,25 76:6,16	164:19 165:22
101:14 102:10,12	sludge 246:8,11	77:10 78:3,11,24	166:25 167:10,17

168:3,10 169:1,10 169:21 170:3,13 171:3 172:11 173:15 174:17,19 175:13 176:14,19 177:1,15,17 178:8 178:24 179:16,25 180:4,25 181:15 181:21 182:4,25 183:25 184:12,24 185:3 186:3,11,14 186:19,23 187:4 187:12,18 189:19 190:2,13 191:11 191:17 192:9,24 193:19 194:6,14 195:8,17,24 196:5 196:16 197:1,14 198:13,16 199:10 199:21 200:17 201:8 202:11,17 202:25 204:12 205:7,17,24 206:2 206:17,25 207:5,9 207:17 208:7,16 208:19 209:2,6,21 210:14 211:2,14 211:22 212:21,24 212:25 213:20 214:23 215:8 216:9,19 217:6,17 218:22 219:11 220:20 221:25 222:13 223:6,22 225:12,17,24 226:12 227:4,17 228:21 229:5,23 230:8,19 231:17 232:2 233:2,18 234:22 235:21 236:17 237:8,14 237:20 238:2,6,24 239:12,25 240:15 240:23 241:18 242:11,18 243:4	243:21 244:9,15 245:6,25 246:23 247:4,10,20 248:21,24 249:16 249:18 250:9,22 251:10 252:1,4,8 252:11,12 254:5,7 256:5,13 257:11 257:16,21 258:8 258:17 259:5,18 260:20 261:13 262:2,13,18,20 263:16 264:9 265:1,15,19 266:1 266:10 267:17,20 267:21 268:19 269:4,10,24 270:13,16,19 271:21 272:17,24 274:7,16 275:14 276:7,20 277:14 277:24 278:5,14 278:21 279:6,11 279:17,19,23 280:20 281:12,20 284:6,25 285:6 286:9,24 287:6,11 288:5,15 289:16 290:5 291:4 292:6 292:12,13,19 293:7,23 294:8,15 294:16,25 295:5 295:16 296:5,19 296:20 297:2,9,12 297:13,22,23 298:11,19 299:13 299:23 300:12,21 301:3,11,19 303:21 304:8 306:3 soil 24:22,23 26:16 61:23 64:21 65:9 135:20 137:17,25 138:6,12 139:14 139:21 140:21,24	141:5,16 142:3,11 142:16 143:19 144:7,15,19,25 145:3,19 149:23 150:2,5,6,8,10,21 150:23 151:2,16 152:15,18 153:4,4 153:19 154:6 156:6,9 157:4,12 158:18 159:17 163:4,18 167:20 168:6,17 173:16 173:20 174:6,8 178:23 181:19,21 183:6,14,15 184:15,22 243:8 243:10 247:11 271:14 274:9,24 275:1,3,3,8,24 276:2,11 297:17 297:19 soils 133:1 141:8,21 141:23 143:1 146:23 151:8 275:11,22 285:10 298:16 sole 282:18 solely 170:15 solid 293:19 soluble 111:11 115:16 116:6 somewhat 159:2 176:16 256:19,24 songbirds 5:3 soon 55:7,17,21 84:11 100:21 173:2 sorry 4:5 24:17 25:9 29:2 36:23 37:25 73:24 74:3,19 87:19 92:11 97:23 100:18 123:1 124:5 152:9 155:13 162:16 166:1 177:22	179:24,25 181:22 185:14,16 186:1 186:20 192:22 197:2 207:8 208:19 210:13 216:17 219:4 221:20,23 228:21 230:11 231:1 243:7 244:15 252:8 253:10,12 256:11 259:19 270:13 279:24,25 280:12 294:6 299:21 sort 34:13 37:17 48:15 64:20 76:14 145:19 159:18 185:13 217:13 294:14 sounds 59:12 160:13 251:5 sour 31:23,24 32:1,5 source 49:12 79:10 80:25 117:25 174:20 193:20 194:16 195:13 sources 48:12 49:3,5 79:11 97:9 117:23 118:4 127:19 128:2 129:8 149:1 170:20 197:10 229:4 237:5 251:14,18 south 14:25 15:4,6,7 15:8,9,12 43:10 112:18 113:3 156:16 SOUTHERN 1:2 Spalding 2:23 73:9 73:13,22 238:5 Spanish 32:10 130:2 130:2 253:22 306:18 spanned 11:25 speak 30:17 91:10
---	--	--	---

speaking 177:24 301:19	119:5,19,24 120:17 121:7	291:21 292:25 293:10 295:3	stamping 207:23,24 208:24
speaks 167:13 183:11 200:5 245:13 248:11 260:2 264:4 284:3	122:2,20 124:11 125:10 126:8,19 134:9 145:14 148:2,19 150:15 151:4,22 152:8 153:8,22 154:10 160:20 161:3 163:6 164:4 165:8 167:23 169:6 170:1,18 174:24 181:23 184:3,17 189:23 190:9 191:15 195:3 196:3 197:23 198:9,21 199:14 201:3,13 203:8,24 204:18 205:15 206:16,22 213:17 217:3,10 218:7 220:12 221:6 222:18 223:12 225:9 226:6,23 228:9 229:2 231:13 233:9 234:12 236:12,22 237:12,17 238:14 239:19 240:7,19 241:9 242:8 243:17 244:14,19 245:13 246:14 247:7,16 248:11 249:8 250:5,14 251:2 256:23 257:15,19 258:2 258:20 259:12 260:25 261:25 262:10 264:15,16 265:12 266:7,16 270:2 272:12 274:13 277:21 278:25 279:15 281:17 284:3,14 287:5,25 290:25	296:14 298:8 299:1,19 300:19 speculative 55:9,25 58:18 72:20 215:7 216:7 286:7 spell 267:4 spend 129:2 spending 180:20 spill 17:2 46:2 68:3 97:18 118:25 119:10 120:13,15 120:24 121:19 122:5,9,15,17 217:13 spilled 44:14 45:18 120:7 spillover 70:24 spills 16:18 43:25 44:6,8,11 45:2,3,6 45:8,15,19 46:1,14 70:15 79:12,13 118:4,18,19,20,22 120:1,2,5 121:14 121:16 122:10,13 173:4 216:21,25 217:5,7 243:22 244:10 245:4 spill-by-spill 217:12 217:15 split 128:8 spoke 82:24 spoken 19:11 spot 93:2 sprayed 240:10 spraying 240:3 spread 38:4 72:22 spreading 65:7 square 30:2 51:21 squares 39:2 ss 308:2 stamp 253:3,4 254:25 282:1,2,5 stamped 254:4	stamps 208:15 stand 27:7 258:17 258:24 259:8,14 262:14 264:13,20 standard 41:14 61:8 61:16 86:9,13 93:17 107:2,8 109:22,25 112:6 112:10 115:21,24 116:12,22 117:2 125:7 126:16,21 137:15,16,18,23 138:2,18 139:24 140:5,10 141:6 145:1,4 146:5,7,19 146:20,24,25 152:19,20 154:8 159:16,20 160:1,4 160:5,7,23 161:4 166:24 167:2,9 169:9 175:5,6 178:10,16,22 179:1,6 197:19 217:7,13 221:1,8 221:10,11,13,14 222:3,11,15,16,21 222:23 223:8,10 223:24 274:21 275:6,9 276:9 278:12 299:8 301:1 standards 9:19 10:9 18:2 25:25 61:14 61:17 62:15 84:23 86:4,24 87:11,16 87:17,20,25 91:17 104:23 105:1 107:12,13,13 117:19 137:13,14 138:7 139:5,5,10 139:10 140:4,11 140:16,17,18 141:17 151:8

178:15 179:9,13 213:24 214:3 223:14,15,19,21 240:17 264:6 300:16 standing 91:24 292:1,7 stands 137:9,10 stars 156:7 start 4:22 13:11,18 13:19 32:3 106:4 106:10 127:24 196:11 219:12 297:17 started 13:4,9,16,17 18:15 55:5,8 56:5 171:21 287:23 starting 91:16 180:11 190:22 230:18 248:14 starts 93:7 127:14 241:19 253:15 290:6 state 10:4,6,8,8 11:2 11:21 12:20 14:8 17:4,4 18:8,9 61:16 62:6 84:22 107:13 138:6,7,7 138:10 140:5,10 140:11,13,18 151:7 253:16 276:8 301:13 308:1,6 stated 21:25 241:4 statement 215:17 243:14 250:21 277:17 statements 210:2 212:1 291:14,15 states 1:1 8:23,25 10:4 12:20,22 61:10,15 82:10,16 84:1 86:24 125:8 138:2,5 139:8,9 140:15,16 149:21	197:17,20 229:24 271:2 299:14,25 300:17 state-by-state 139:4 station 40:13,15,15 41:23 59:5 105:10 105:17 110:13 171:16 230:10 231:4,11,20 232:24 244:22 255:10,16 stations 26:17,25 33:7,14,19 39:2 42:10,15,23 43:2,6 43:18 57:12 98:8 105:10 108:2,8 110:10,11 113:2,5 114:12 118:6,7 131:19 132:1,6 139:23 141:12,12 141:14,21 169:18 171:12 199:12 219:18 227:6,12 229:25 231:23 232:8 239:4 243:11 246:3,17 246:19 255:14 257:8,24 260:5 statistical 134:21 197:15,20,25 202:17,21,22,23 stayed 227:2 steel 68:18 step 293:20 steps 150:1 Steven 1:14 27:24 209:24 263:1 266:25 267:23 270:23 272:6 273:9 287:14 sticking 294:22 296:22 sticks 296:9 stimulate 91:5 stood 148:12	stop 119:1 189:6 stopped 27:2 170:11 249:13 storage 62:2,4 82:20 84:3,17 85:1 92:4 store 92:24 stored 92:20 226:18 stormwater 106:7 story 116:4 204:21 287:1 290:13 straddled 12:1 straight 235:8 straighter 51:22 straightforward 245:17 Stratus 11:19 12:1,2 12:25 13:2,4,6,7 13:21 14:1 15:3,4 16:11,16 20:12 21:22 22:16,19,22 23:13 25:1 27:4 30:5 60:23 188:25 252:15 254:19 262:23 263:3,4,10 263:13 266:22 273:14 280:18 281:9,15 306:18 Stratus's 18:12 23:4 stream 9:9 24:24 68:19 70:16 71:10 80:16,19,20,20 104:13 106:2,3,4 106:11,12,13,16 110:15 231:6 291:23 295:15 296:18 streams 9:2 26:16 26:24 42:11,16 43:8 45:7 46:20 77:19,20 80:17 94:13 95:3,19 96:3 96:8,20,23 97:10 97:12 98:11,14,20 99:1 101:14 102:3 103:21 109:6	110:5 113:12 136:14 172:25 213:3,13 227:6,21 227:24 228:7,13 229:10,19 232:9 232:17,20 236:19 236:19,25 237:2 239:16,23 260:13 298:17 Street 1:21 2:17 302:22 308:23 stretches 109:8 strike 36:13 39:12 41:3,19 42:13,20 43:5 44:13,20,25 45:22 46:9 47:9 48:9 49:8 50:1 51:4 52:2,8 53:15 55:9,25 56:11,25 57:23 58:17 60:8 60:22 62:10 63:2 63:17 64:2,8,25 65:8,12 68:6,21 70:3 72:14,25 75:7 78:2,9,23 81:5 83:20,24 88:21 90:11 91:20 92:25 95:13 96:5 97:5 98:21 99:15 103:2 104:10 105:3,18 105:20 110:6 112:4 114:18 115:9 122:20 124:4 126:3 145:21 152:24 154:3 155:25 159:6 163:10 168:25 172:10 173:14 174:18 175:12 177:16 182:3,24 184:11 184:23 192:8 197:13 199:9 200:16 202:10 206:1,16 215:6
---	---	--	---

216:7,18 219:10 225:23 226:11 228:20 229:21 232:1 233:1,16 236:16 237:6 238:23 239:10,24 240:14 241:17 245:5,23 248:22 249:17 256:3 257:9 259:17 275:13 276:6 286:7 289:15 293:22 294:7 297:20 298:18 299:12 300:11 301:2	substandard 26:7 88:19 125:7 126:16,24 234:18 263:18 298:3 306:20 substantial 69:13 Subsueto 285:12 succeed 7:1 successful 260:16 274:1 307:8 Sucumbios 31:1,11 253:8 282:3 sued 19:24 20:8 sufficient 115:25 suggest 102:10 suggests 122:4 suitability 228:17 Suite 2:11 308:23 sulfate 60:13 sulfur 233:5,19,21 233:22 sum 162:7 Summa 4:11 summaries 235:24 236:1 summarize 23:13 32:23 48:23 139:20 173:19 175:11 183:14 summarized 251:16 summarizes 166:14 174:6 175:21 summarizing 183:21 184:4 240:9 248:3 summary 129:9 189:4 249:20 251:11 259:20,21 261:20 273:12 280:1 307:15 summation 201:8 sump 233:6,7,13 Superfund 7:13,22 7:23 8:2,12,13,20 9:15,17,22,23,24	10:7,23 222:24 superseded 259:3 supersedes 10:7 suppose 10:3 69:17 supposed 73:7 Sur 43:10 sure 23:16 24:18 32:10 36:25 55:17 58:11 67:6 116:15 130:4 145:5 158:6 160:22 168:11 170:3 180:4 190:11,13 195:21 230:13 236:5 248:15 256:13 284:19 289:23 surface 38:18 59:16 100:11 107:14 109:5 133:2 136:14 157:14,15 157:22 158:21 161:16,19 227:8 232:7,24 236:18 237:1 294:9,22 298:17 surrounding 65:9 83:19 212:9 survey 197:12 198:24,25 199:1 199:17 200:15 202:8 surveyed 199:3,7,18 202:1 surveys 200:7 suspect 118:24 261:17 suspicion 183:7 swear 3:6 swim 237:3 swimming 76:15 switch 18:11 127:7 286:10 sworn 3:9 305:22 308:8 synthesis 6:14,23	system 22:5 156:4 171:12,18 191:4 227:22,22 systems 191:3
T			
T 305:1,1			
table 36:3 131:10,17 132:11 140:19 142:5 148:3,13 153:1 166:10,14 166:25 167:6 174:1,6,25 184:4 185:5,9,18 188:8 188:16 193:8 194:15 197:19 208:25 249:20 255:23 280:25 283:4,5,10 285:8 286:3			
tables 235:23 280:7 281:8			
take 12:3 29:25 36:19 52:11,15,17 58:19 127:8 128:1 152:15 165:3,5 180:2 185:14 212:15 230:11 235:14 241:20 247:25 281:22 286:13			
taken 1:19 52:23 60:1 67:2 72:10 76:25 77:8 84:10 93:5 108:20 127:12 133:24 147:24,24 167:19 167:21 172:6 179:9 180:8 194:12 211:21 213:17 214:19 230:16 275:4 284:14 285:23 286:21 302:23 308:10			

talk 6:1 21:12 127:20 131:6 176:8 275:22 289:2,8	271:23 280:20 283:22 285:5,21 290:7 293:15	35:21 36:22 38:17 40:6 41:9 42:1,18 42:25 43:16 44:3 44:18,25 45:5 46:6 46:25 48:5,21 50:9 53:8 54:22 55:16 56:7,17 57:3,10 58:6 59:11,23 60:6 61:3,13 62:18 63:22,22 64:15 65:4,19 66:21 67:23 68:11,23 70:4,10 71:14,21 72:6,20 74:12 75:8 75:17 76:4 77:15 78:10,16 79:6 80:3 80:14 81:21 82:19 83:3,10 84:5,20 85:7,23 86:7,19 87:1 88:12 89:1 90:19 91:2,14 93:20 94:5,16 95:7 95:22 96:10,18 97:14 99:4,21 100:19 101:3,21 102:6,16 103:11 104:16 107:6,24 108:25 109:17 110:17 111:2,18 112:9 114:25 115:14 117:10 118:2 119:24 120:17 122:25 123:3 124:11,19 125:10,16 126:8 126:19 131:14 132:21 134:9 135:16 137:21 138:4,23 140:8 141:3,19 142:14 143:14 144:1,21 145:15 146:3,17 147:6 148:2,19 149:18 150:15,20 151:4 152:8 153:8	153:22 154:10,22 157:3 159:7,14 161:11 163:6 164:4 165:9 166:13 167:5 168:8,15 169:6,14 170:1 171:8 172:17 174:5,24 175:20 177:23 178:14 179:8 180:17,18,22 181:9,23 182:11 183:11 184:3,17 189:23 190:9 191:15 195:3 196:14 197:23 198:9,21 199:15 200:4 201:3,13 202:16,20 203:24 204:18 205:15 206:7 212:12 217:10 218:8 219:2,3 221:6 222:6 225:9 226:5 228:10 229:12,22 230:4 231:13 234:11 237:18 239:20 240:20 241:9 242:8 243:17 244:5 249:9 250:5,15 251:3 260:25 262:10 264:17 269:1,22 270:3 272:20 274:13 276:17 290:3,3 293:10 296:2 298:8 299:1,19 300:19 305:4,5
talked 188:5 218:20 228:15 232:16,25 240:9 245:1 286:2 289:11 291:11	telling 36:20 138:20		
talking 21:10 75:10 100:15 187:18 209:1 227:11,14 227:19 228:22,23 228:23 231:3 289:14	tells 103:14 156:15 170:24 184:19 244:24		
talks 49:18	temporary 62:2,4 84:3,16 85:1,9 92:23		
tank 61:25 92:16,17 92:19,19 240:4	ten 118:14 144:25 146:6,14		
tanks 85:4,5,8,9,12 85:13,15,20 89:9 89:10,12,12 91:21 91:23 173:12	tend 148:6 149:9 164:13		
tape 93:2 179:25 180:1 292:12	tended 138:11 149:2 149:4 168:21		
tasted 271:13,14	tendered 303:18		
TCLP 178:17 272:1 273:2,25 274:20 274:22,22 275:2 275:12 276:1,10 276:14 307:10	tends 18:7 138:6		
TCLPs 274:5	term 11:10 31:24 32:9 192:12 248:6		
team 128:20	Terminator 282:19		
technical 23:11 36:4	terms 49:5 51:24 139:21 144:23 174:7,20 189:14 218:24 263:3 281:7		
tell 17:6 29:20 30:13 32:21 41:21 49:13 53:5 54:18,19 58:3 64:11 72:17 78:4 89:23,25 99:18 100:4 105:11 116:23 117:7 134:23 138:24 157:1 158:14,23 159:3 161:9 181:17 203:5 209:6,11,12 213:5 243:13 270:21	territory 32:15		
	test 178:10,17,18 272:1 273:2,25 274:5,8,20,22,23 275:2,12,17 276:1 276:10,12,14 307:7,10		
	tested 47:23 153:16 237:9		
	testified 3:10 180:24 217:12 221:2,12 259:12 262:4 272:12 284:11		
	testify 308:8		
	testimony 18:19,19 18:22 20:25 22:6 24:16 25:6 30:16 31:5,18 32:8 33:3 33:22 34:19 35:10		
		155:22 156:10,11 157:10 158:1,2 159:10 160:1,2 161:10 162:1,2 163:10 164:1,2 165:10 166:1,2 167:10 168:1,2 169:10 170:1,2 171:10 172:1,2 173:10 174:1,2 175:10 176:1,2 177:10 178:1,2 179:10 180:1,2 181:10 182:1,2 183:10 184:1,2 185:10 186:1,2 187:10 188:1,2 189:10 190:1,2 191:10 192:1,2 193:10 194:1,2 195:10 196:1,2 197:10 198:1,2 199:10 200:1,2 201:10 202:1,2 203:10 204:1,2 205:10 206:1,2 207:10 208:1,2 209:10 210:1,2 211:10 212:1,2 213:10 214:1,2 215:10 216:1,2 217:10 218:1,2 219:10 220:1,2 221:10 222:1,2 223:10 224:1,2 225:10 226:1,2 227:10 228:1,2 229:10 230:1,2 231:10 232:1,2 233:10 234:1,2 235:10 236:1,2 237:10 238:1,2 239:10 240:1,2 241:10 242:1,2 243:10 244:1,2 245:10 246:1,2 247:10 248:1,2 249:10 250:1,2 251:10 252:1,2 253:10 254:1,2 255:10 256:1,2 257:10 258:1,2 259:10 260:1,2 261:10 262:1,2 263:10 264:1,2 265:10 266:1,2 267:10 268:1,2 269:10 270:1,2 271:10 272:1,2 273:10 274:1,2 275:10 276:1,2 277:10 278:1,2 279:10 280:1,2 281:10 282:1,2 283:10 284:1,2 285:10 286:1,2 287:10 288:1,2 289:10 290:1,2 291:10 292:1,2 293:10 294:1,2 295:10 296:1,2 297:10 298:1,2 299:10 300:1,2 301:10 302:1,2 303:10 304:1,2 305:10 306:1,2 307:10 308:1,2 309:10 310:1,2 311:10 312:1,2 313:10 314:1,2 315:10 316:1,2 317:10 318:1,2 319:10 320:1,2 321:10 322:1,2 323:10 324:1,2 325:10 326:1,2 327:10 328:1,2 329:10 330:1,2 331:10 332:1,2 333:10 334:1,2 335:10 336:1,2 337:10 338:1,2 339:10 340:1,2 341:10 342:1,2 343:10 344:1,2 345:10 346:1,2 347:10 348:1,2 349:10 350:1,2 351:10 352:1,2 353:10 354:1,2 355:10 356:1,2 357:10 358:1,2 359:10 360:1,2 361:10 362:1,2 363:10 364:1,2 365:10 366:1,2 367:10 368:1,2 369:10 370:1,2 371:10 372:1,2 373:10 374:1,2 375:10 376:1,2 377:10 378:1,2 379:10 380:1,2 381:10 382:1,2 383:10 384:1,2 385:10 386:1,2 387:10 388:1,2 389:10 390:1,2 391:10 392:1,2 393:10 394:1,2 395:10 396:1,2 397:10 398:1,2 399:10 400:1,2	
		testing 57:14 151:18 152:5 228:1,3,18 237:21 238:1	
		tests 140:3 152:4 153:2 154:5	
		Texaco 25:20,24	

26:6 30:11,23 32:2 32:12,16,25 33:10 33:11,13,16 34:6,9 34:14,25 35:14,17 35:24 36:8 37:2,4 40:1,3,8,21,24 42:7 48:25 53:11 53:14 55:7,14,21 56:8,23 59:21 61:10 62:12,14 63:23,25 64:6,12 64:17 65:17,24 66:18 67:9 72:23 82:11,16,21 83:5 85:20 86:14,21 88:5,17,18 89:12 91:16,19 93:10 94:6 100:22 105:11,16 107:17 108:2,5,10 110:20 113:11,24 114:9 114:23 115:2,8 118:17 119:8,13 121:3 122:6,23 123:5,9 125:19,20 126:22 130:25 131:18,19 138:19 155:4,21 159:20 160:18 169:11,22 169:24 170:4,4,8 170:15,23 171:1,9 172:1,9,13,14,20 172:24 173:2,8,13 173:17,18,22,22 173:24,24 174:15 174:15 175:2,9,14 176:7 177:19 179:1,14 181:6,13 181:13 182:13 183:17,20 184:9 184:14,20 185:13 187:2 189:14,21 191:9 192:6 194:2 194:10,11,11,16 194:17 195:1,10	195:14 199:12 202:12,24 204:25 205:1,11 207:21 213:19,25 214:6 217:1,5,14 218:10 218:14 219:5 225:5,15 226:1 227:12 229:8 230:7 231:22 233:14 234:8 238:1,19 239:22 240:10,15 241:10 243:6,6 247:4 251:19,22 255:14 264:8 269:19 272:1 273:3,23 274:21 276:9 284:8 293:12 300:1,13,24 Texaco's 21:20 23:18 25:3,13 26:14 27:1 32:20 32:23 41:12 42:22 43:3 49:4 50:23 56:20 59:24 64:4 75:3 85:19,25 94:2 114:15,16 118:16 119:7,7 123:8 169:18 170:12 177:5 185:20 186:7 204:15 208:21 212:3,9 234:18 235:25 242:6,23 255:19 256:7 276:24 289:13 291:12,15 298:2,14,24 307:10 Texaco-Chevron 186:10 Texaco-Petroecua... 194:13 Texas 32:3,5 Texpet 184:19 185:5 185:16 188:13	205:21 text 281:8 thank 3:16 4:16 27:18 50:18 52:20 67:16 162:12,17 212:20 221:24 255:6 270:19 279:17 286:10 301:11,12 302:18 304:14 thanks 48:17 89:7,7 89:19 155:14 212:23 theirs 248:16,23 thereof 210:23 thesis 5:2 thing 223:4 267:13 268:15 286:17 290:10 things 12:7 45:17 57:6 61:21 63:8 79:13 87:8,10 89:9 125:18 233:15 234:15 242:20 254:13 261:6 264:22 281:9 291:11 299:7 think 5:23 8:9 11:21 15:5,6,20 20:15 29:4 30:7,15 45:20 49:21 50:14 51:9 53:12 55:20 58:10 62:19,22 71:6 73:2 75:5 77:4 89:8 91:9,15 92:4 93:1 96:15 99:13,23 102:17,17 104:20 105:25 110:12 116:14 117:13 120:5 121:11 123:12 124:24 125:11 126:11,23 127:17,19 140:9 141:6 144:8 150:2 150:16,17 151:23	152:1 160:2,21 174:25,25 179:17 179:21 188:3,3 190:5,10 193:7 194:17,20 195:12 198:11 204:24,25 209:14 211:11 212:14 213:9 214:4 216:13 217:12,15 220:1 221:12,25 222:2,7 222:19 223:3,5,16 223:17,18 235:17 235:17 239:12 240:21 245:16 246:7 252:14,23 254:22 255:25 258:8 261:1,8,14 265:1,13,20,24 266:8,20,24,25 267:10 277:3 281:14 283:6,17 288:6 291:12,25 293:4 296:23 302:14 303:8,23 thinking 14:12 third 131:2 163:1 197:14 233:3 244:10 278:5 thought 98:24 144:23 151:24 187:24 205:1 206:9 212:2,8 261:6 thoughts 206:14 264:21 thousand 113:6 139:24 140:24 141:23 142:8 143:18,20 144:9 146:6,21,25 147:12,14,15,19 148:8,15 153:11 153:14 154:6 160:14 162:2
--	---	--	---

174:9 175:6	140:16 141:4	298:4 303:7,14	96:21 102:23
178:19 179:20	145:22 164:1	Today's 3:3	104:19 117:14
184:7 222:2,10	165:15 170:12	told 16:2 30:7 106:6	178:17 228:16
275:11 284:17,20	180:20 182:15	106:12,15 110:12	273:24
284:22	184:25 202:12	196:7 221:10	toxicologist 104:21
threat 96:7 298:21	204:13,16 212:16	222:1 261:14	toxicology 5:9,12,13
three 20:21 49:21	217:8 234:6,20	301:3	5:14,19,24 299:6
74:14 91:23 93:8	240:17 242:12,22	toluene 110:22,24	TPH 107:18,25
100:10 113:2,5	244:16,24 245:11	115:11,12,15,24	108:7,13,18,23
117:23 137:3,5	245:16 247:14	115:25 116:4,25	109:2,5,15 110:1
151:17 155:24	249:5 250:1,7,11	tool 73:23 74:2	137:8,9,10,16,25
162:4,9,10,10,13	250:24 258:12,24	top 28:25 45:11	138:11,12,16,21
162:18,20 193:1	259:1,10,16	50:25 51:24 74:19	139:6,21,25 140:1
194:15,18,24	260:22 261:9	80:6 107:17	140:5,11,16,17,21
195:5 196:9	263:20 264:19	157:21 158:11	140:23 141:5,15
234:23 253:14,17	265:2 272:18,22	161:23 185:17	141:21,24 142:3,6
255:24 257:4,12	275:17 276:13	230:9 231:5 238:3	142:8,11,16,17,25
258:6 260:10	277:18 278:1,8,18	269:15 275:15	143:3,8,17 144:6
262:6 282:10	279:13 290:17	293:17 294:13	144:19,24 147:3,9
288:24	292:10 296:16	topic 18:16 234:14	151:2,8 152:16,20
threshold 141:1	298:20 299:14,16	topics 88:3	153:4,12,14,19
143:11 154:8	299:24 300:1	tops 68:3	154:6 156:11,24
thumb 254:2 265:5	301:1,3,4,11,20,21	torn-up 66:15	157:4,8,11,17,25
tied 91:25 204:15	302:15 303:18	total 107:19 131:20	158:2 159:2,17
time 10:2 12:1 19:13	304:9 308:10	132:6 134:5 135:1	160:10,24 161:24
25:25 26:9,21 27:2	timeline 11:18	136:24,25 137:10	161:25 162:2,24
29:1 32:24 34:21	139:4	137:11 139:13	162:25 163:2,4,20
40:4 41:1,7,11	times 137:3,5 145:1	142:1 145:9 177:8	163:23 166:14,23
45:2 46:11,13	146:6,14,15	182:14 185:12	166:24 167:8,15
47:12,17,18 52:14	268:11 294:3	245:7 276:10	169:2 173:16,20
61:10 65:16 67:8	title 7:19 94:1	283:17	174:8 178:16,23
69:25 74:18 77:1,8	107:18 131:10	totaled 133:8	179:1 181:21
78:25 79:24 82:11	183:7 185:4,5	totally 176:12	182:1,23 183:6,14
82:16,20 84:18	255:7 257:5	touch 39:20 192:3	183:15 184:4,6,14
86:5,10,13,17	263:16 264:1	touched 207:11	184:21,21 185:6
94:24 95:16 98:18	277:9 283:10	tour 288:12,15	188:13 193:13,15
99:10 101:6,7	285:7 287:20	town 39:1 43:19	193:17,20,24
102:21 103:18,25	titled 136:12 230:10	towns 38:24 77:21	194:16,25 195:6,9
104:3,12 108:8,20	306:19 307:7,10	toxic 45:17 101:14	195:13 218:24
109:2 112:10,25	307:13,15	101:15 102:3,9,13	219:4,7 221:1
113:11 119:21	today 19:8 28:13	102:20,21 103:15	222:3,15 275:7,12
120:19 123:13	98:9 206:20	104:6 111:13,14	278:12 283:13,15
125:1,3,8 126:1,17	228:15 258:18	111:15 115:18	283:17 284:1
126:22 129:2	262:4,13 264:14	116:1,21 299:5	285:25
138:18 139:7	265:3 291:12	toxicity 45:19,21	TPH-based 139:10

TPM 153:3
track 49:23 71:9
 77:1,2 79:8
trade 27:14
training 45:25 81:16
 94:10 98:23 134:4
 225:3
Trans 43:20
transcript 305:3
 308:13
translate 283:6
translation 221:15
 253:21
translations 253:17
transport 60:17
travel 39:16
treated 85:13
 107:12 228:13
 237:9
treatment 62:8
 72:11
Trevor 2:22
trial 23:22,22
 128:15,17 129:8
 131:11,16,21,22
 140:20 141:14
 142:19,23 143:1
 156:25 175:2
 185:11 207:2,13
 269:18,20 270:7
 278:6
triangle 155:17
tried 28:17,18
 177:18 239:13
trigger 160:2,7
 161:1 177:18
 178:4
trip 268:21 288:21
trips 288:19,22
true 51:14 54:10
 58:22 98:24
 106:19 155:8
 258:14 259:9,15
 261:5 293:23
 305:4 308:13

truth 308:8
truthfully 301:9,9
try 12:2 77:1,2
 103:12
trying 6:23 12:3
 30:16 38:1 80:4,5
 89:16 98:17
 102:10 103:3
 134:24 150:18
 151:6 152:13
 165:11 182:12
 294:23
turn 32:19 205:24
 206:25 210:21
 215:8 216:19
 217:17 230:8
 259:18 268:15
 285:6
two 7:14,15 77:5,9
 80:15 89:9 105:13
 117:22 118:12
 128:8,10 129:14
 130:5,9 133:14
 136:4 137:5 140:4
 140:23 141:16
 142:3,7 143:17,18
 143:22 146:22
 148:11,20,23,25
 161:12,18 162:1
 173:20 174:2
 178:15 184:10
 197:10 200:2,23
 200:24 201:21,24
 202:1,9 209:25
 230:23 248:15
 255:16 274:19
 282:11 284:18
twofold 147:8
two-thirds 207:5
TX 2:11
type 10:17,20 51:15
 61:23,23 74:22
 126:5,11 227:5
 263:7
types 263:10

typewritten 308:12
typical 51:8 52:1
 53:10,13 54:15
 56:10 68:14 69:1
 75:3 140:15 148:4
 295:25 296:3
typically 10:23 11:3
 12:10 14:16,20
 16:13 26:10 40:22
 61:15 68:17 80:17
 90:4 120:24
 123:15 124:24
 134:14 148:23

U

UG 112:13
ultimate 23:14
Um-hum 30:10
 114:5 123:18
unabated 299:17
 300:3
unacceptable 61:24
uncovered 55:2
underground 42:4
 89:22 90:5 92:21
 100:7,10 172:24
underlining 235:14
 235:15
underlying 289:12
underneath 66:13
 78:12 83:13
 156:14 283:1
understand 19:6
 21:6,11 23:25 38:1
 65:13 125:2
 165:13 166:3
 189:14 196:24
 210:24 244:12,16
 246:10 302:12
 303:14,15 304:2
understanding
 22:10 28:12 31:19
 32:14,18 33:16
 34:21,24 40:20
 41:5 55:12 65:14
 65:15 87:11,19
 93:10,12,14 98:16
 109:4 111:21,24
 112:24 116:11
 124:21 125:5
 133:12 137:23
 141:4,9 146:20
 171:24 183:1
 197:24 211:3,4
 213:19 214:25
 219:16 220:14
 221:13 222:9
 233:11 242:4,21
 243:3,20 246:21
 247:2,9,17 249:14
 256:20 276:13
 289:1,5,14
understood 40:3
 86:23 154:7
 206:18 245:15
 301:6
undertook 175:14
undisturbed 242:2
 242:23 243:3
unfortunately 265:2
unique 42:5
United 1:1 61:9,15
 82:10,15 84:1
 86:24 125:7 138:2
 138:5 149:20
 197:17,20 271:2
 299:14,25 300:17
universal 138:8
University 4:1,20,25
 5:10 6:4
unlabeled 53:3
 54:18 72:16
unlined 49:11 50:3
unquote 246:9
 247:22 248:6
unrecovered 59:1,4
unremediated
 299:17 300:3
untouched 177:13
untreated 229:15

untrue 261:7
unusual 290:14
upper 39:9 89:18
 90:1 137:24
 140:25 141:6
 143:11 155:12
 156:22
upstream 77:3
usage 82:5,15
use 64:4 65:15 66:18
 67:9 73:22 74:1
 79:23 80:24 84:16
 86:8,10,11 88:7
 89:9,12,12 91:12
 115:11 126:23
 152:11 186:22,23
 196:8 198:1
 220:25 221:9
 237:4 265:16
 273:23 274:5
USEPA 197:16,24
uses 58:25
usually 215:13
U.S 7:11 11:21
 12:12,13 15:11,14
 17:3 26:11 82:6,23
 82:24 83:5 84:7,14
 85:2 87:9 106:24
 126:16,21 149:25
 223:16 264:6
 266:2,12 293:3,4
 300:10,25

V

vague 27:8 32:17
 39:23 45:5 46:12
 54:1 58:2 66:6
 69:15 74:25 76:20
 146:16 187:10
 189:12 190:9
 210:12 212:12
 216:12 224:11
 242:13 268:17
 274:3 291:21
 299:19

valid 152:4,14
validity 134:16
value 193:24 196:18
 197:15,20,25
 198:1,5,7 221:18
 285:18,21
values 114:22 200:2
various 30:1 72:23
 87:8,12 108:2
 188:18
vary 138:7
vegetation 51:25
 293:18
vehicle 232:6,22
vented 41:1
venting 41:13
verbatim 273:8
 277:7
version 235:5,18,20
 306:18
versus 83:5 154:1
 173:23 183:18
 204:11 205:1
vertebrates 96:23
vertical 159:10
VESELKA 2:9
vfitt@gibsondun...
 2:6
vice 13:22
vicinity 260:14,17
video 32:1 70:22
 71:5,7 286:12
Videographer 2:22
 3:3 52:21,25 66:25
 67:4 74:4 93:3,7
 127:10,14 179:24
 180:6,10 230:14
 230:17 286:19,22
 304:17
videotaped 1:5,18
violation 117:2
Virginia 2:3
visible 269:12
visit 50:2 53:16,19
 267:24 268:9

269:11 270:24
 271:16 297:7
visited 39:21 53:18
 54:12,13 57:25
 66:3,8 98:9 268:7
 268:11,21 270:24
 271:4 306:23
 307:5
visiting 53:21 76:7
visits 271:13
visual 218:12
visually 51:11
 218:18
voluntarily 302:4,17

W

W 2:4
waives 302:8
walk 29:17 106:11
 123:22 131:8
walked 294:20
walking 123:15,19
 123:24 124:3,25
 125:6 295:13
want 18:16 27:14
 28:6 82:8 111:10
 119:1 121:17,20
 122:13 123:22
 128:21 135:7
 180:21 186:25
 189:8 191:17
 211:11 293:19
wanted 6:13 175:21
 176:11 289:2,8
 291:2
war 282:18
wash 227:7,8 228:24
 229:9,10,15 237:3
washes 106:8
washing 232:7,23
Washington 2:4
wasn't 9:16 22:7
 47:16,20 73:7
 102:10 128:23
 234:15 239:6
 258:23 291:1
waste 8:19 10:23
 11:11 14:5 35:3,8
 53:11 56:23 61:18
 61:23 62:4,7,23
 64:18,19 65:6 72:9
 72:13 74:15 75:3
 82:20 83:14,18
 84:10,12 85:10,21
 86:12,16 88:2,15
 88:24 93:17 119:9
 155:20,24 165:17
 173:12 227:5
 228:12,16,22,23
 228:24 229:4
 240:12 245:8,8,20
 245:21 255:22
 256:8 260:11
 263:19 274:10
 275:18 276:1
 298:3,24 306:20
wasted 302:15
wastes 49:11 50:3
 72:8 86:1 264:7
wastewater 227:11
 227:25 228:2,3
 236:6 237:21
water 10:9 14:6
 38:18 40:11,16
 41:24 42:2,2,3,6,8
 42:9,11,16 43:4,8
 46:18,19,21 47:2,7
 47:8,12,23 48:1,6
 70:12,18 74:16,16
 74:17,19 75:5,15
 75:23,25 76:5,18
 76:18 77:13,18,18
 77:24 80:25 81:2,7
 81:11,18 83:18
 84:9 89:21 90:2,2
 90:3,6,8,13,17
 91:6 92:5,18,20,24
 93:22,22 94:1,3,8
 95:2,18 96:3,12,14
 96:21,22,25 97:3

97:11,18,21 98:8 98:10,14,19 99:7 99:11,17,23,25 100:4,8,12,15,17 101:1,6,7,11,13,18 101:23,25 102:2 102:19,19,25 103:5,13,14,18,19 103:23 104:6,22 104:24 105:16 106:5,6,25 107:2,9 107:12,17,20 108:1,8,19 109:5 109:15 110:1,14 110:14,20,25 111:7,8,11,12 112:7,11,19 113:1 113:5,8,11,12,17 114:12 115:4,16 115:17,21 116:6,7 116:9,19 117:16 117:18,18 133:2 135:21 136:12,13 136:14,16,17 169:3 172:23 213:2,12 215:11 215:24 218:21,23 219:5,6 224:24 225:21 226:2,9 227:6,7,7,22 229:9 232:6,19 236:6,9 236:13,14,14,15 236:20 237:5 238:9,16,19 239:5 239:8,16,22 240:24 241:12,13 243:9,10 246:24 247:5,11 265:7,10 275:7,7,23,24,25 276:3,3 286:17 292:2 295:13 296:10,15,16,23 296:25 297:4,16 297:16 298:17 299:4,8	waters 98:25 waterway 106:11 waterways 236:6 water-soluble 111:6 way 6:24 22:18 26:6 27:21 56:22 59:17 61:19 68:1 70:2 72:13 75:24 76:1 77:19 80:15,23 81:3 88:18 90:24 107:10 113:17 125:25 142:16 147:8 150:16 152:14 157:7 160:11 163:17 164:9,15 168:12 175:11 183:15,22 191:6 198:4 207:6 220:14 231:10,22 236:1 238:7 239:13 240:12 241:10 250:16 268:8 281:1 285:13 300:24 304:5 ways 49:4 56:19 69:22 72:22 80:15 88:15 123:13 124:23 261:14 week 303:7 weight 150:6 wellhead 54:4 wells 26:25 32:25 33:6,13,17,18 35:4 35:7,17,23 36:7,20 37:5,17 38:2,3,9 39:5 40:9,10,21 42:3 43:18 49:12 50:4 57:12 63:5,7 63:7 77:23 80:24 80:25 90:4 91:7 94:8 99:25 100:1 113:22,24 114:13 114:23 131:18,24 132:7 139:23	140:2,2 148:4,5 149:4 154:25 159:21,23 171:10 171:20 173:7,8,9 179:5 181:6 190:6 199:12 201:11 202:3,5 219:17,22 220:2,3 255:14,16 255:21 300:14,16 went 7:5 54:2,3 57:12 93:13 131:4 177:13 267:25 268:9 273:20 weren't 103:6 158:12 261:9 271:14 west 156:15 wetland 68:20 71:10 296:17 wetlands 9:10 136:15 260:13 we'll 18:22 22:24 we're 3:4 10:10 11:3 21:10,11 28:13 52:25 66:25 88:8 100:15 111:7 114:3 127:6,15,19 136:17,20 146:5 147:10 157:8,16 158:7 165:10 173:16 180:6,19 185:14 190:15 212:21,22 227:11 228:22,23 230:14 235:3 252:11 286:19 290:20 293:14 295:8,12 304:17 we've 15:5,6,10,11 19:13 27:19 30:8 75:10 93:1 180:15 187:7 199:22,25 206:20 212:18 218:20 228:15 245:1 264:9 280:7	286:11 291:11 whatsoever 215:19 whereof 308:18 wider 166:4,5 widespread 250:10 250:17 wildlife 11:22 12:12 12:13 15:15 16:1 17:3 220:22 willing 19:17 304:1 304:3 Wisconsin 4:21,25 5:4,11 8:24 9:4,5,8 15:22 witness 3:7 11:5 19:2,18,20 20:2,3 20:8 21:1,2,3 22:3 22:7 301:23,25 303:18,19 308:18 witnesses 21:23 22:1 women 203:2,3,5,21 204:1,2,6,10,14 205:13 wonder 53:4 wondering 27:21 wood 294:20 WOODS0003436... 307:6 Woodward-Clyde 129:18 131:4 186:10,12 187:1 187:20 188:11 189:11 190:25 306:13 Woodward-Clyde's 191:3 word 10:14 100:4 126:23 210:13 235:3,4,7 236:7 248:25 worded 244:7 wording 141:7 words 4:9 21:4 86:15 108:22 170:10 175:8
---	---	--	--

276:3 283:1	world 15:10 26:12 34:25	40:17 109:7,13	160:14,24 161:5
work 5:25 6:2,2,16	worst 222:25	yellowish 156:7	179:20 181:18
6:21 7:9 9:18 10:5	wouldn't 159:1	Yep 137:5 286:18	182:1
10:17,20 11:8	235:19 293:19	yield 134:5	10/15/09 306:22
12:15,18 13:5 14:2	write 247:21 266:19	York 1:2,21 4:4	10/8/09 306:23
14:3,9,14,18,25	writing 9:25 88:20	288:11	10:07 52:22,23
15:5,7,10,11,15	128:23 129:4	<hr/> Z <hr/>	10:22 52:24,25
16:3,12,15,16,20	244:21 246:5,6,7	ZEICHNER 2:16	10:39 67:1,2
17:7 18:12,12	261:4,6 277:13	zero 148:15 157:14	10:42 67:3,5
22:20 23:1,7,11,15	written 203:10	zoom 36:24	100 139:25 140:6,9
23:16 24:6,19 25:2	257:1,1,10 258:4	<hr/> \$ <hr/>	140:14,17,21
25:4,13,14 27:3	261:2,12 263:21	\$8 198:12	141:21 142:6
43:24 47:12 55:12	266:21 273:8	<hr/> 0 <hr/>	146:15,15 148:13
60:24 65:16 74:24	wrong 111:22	0.005 112:12	174:8 184:6
81:16 82:7 85:18	117:22 203:4	0.325 108:22 109:2	100,000 143:23
88:4 94:11 97:7	wrote 220:13 246:3	109:9 166:24	204:1
123:5 129:25	246:15 266:13,21	167:9,16	1050 2:4
130:17 144:17	267:6,8 273:21	06830 2:18	1069438 208:16
145:16 164:22	<hr/> X <hr/>	<hr/> 1 <hr/>	11 1:3 132:5 272:23
187:5,6,13 194:1	X 109:8 110:8 157:8	1 27:12,13 144:25	272:25 307:10
209:4 210:16	158:25 198:4	145:3 167:15	11A 255:10
213:15 225:3	283:15 306:1	185:5 190:22	11/11/08 307:4
228:6 230:1 234:6	xylene 116:25	194:21 202:7	11/12/07 306:18
241:3 243:14	xylenes 110:22,25	210:21 255:19,23	11/7/08 306:16
244:2 254:19	116:16	255:25 273:11	11:17 93:4,5
262:3 272:15	<hr/> Y <hr/>	275:15 306:11	11:20 93:6,8
273:4,5,20 274:1	y 108:16,17 130:3	1,000 137:16,24	12 141:14 276:19,21
286:25 287:17	157:11 283:15,15	141:5 143:7	307:13
298:1 299:16	yeah 4:8 13:18	146:14 147:3	12th 308:19
300:2 304:1,10	27:17 28:5,8,17	152:19 153:4,18	12,000 283:22,22,23
worked 6:6,18,19	37:16,24 51:17	159:10,16 161:5	12:07 127:11,12
7:12 8:10,21,24	89:18 92:18 106:3	220:25 221:8,9	120,000 283:22
9:5 10:22 11:19	134:24 162:14,17	275:6 276:9	126 245:7,19
12:21 15:14,21,24	196:16,24 208:18	278:11 283:21	13 253:15 279:18,20
15:25 18:5 40:3	210:14 216:13	284:11	279:22 307:15
189:1 237:15,22	246:15 263:11	1,206 137:2	14 281:19,21 307:17
278:2	year 3:25 35:23 36:6	1:07 127:13,15	1459 224:4,7
workers 120:1	years 7:14,15 12:22	10 201:22 202:4	15th 302:21 304:4,7
219:25 227:2	100:24 262:6	270:11 271:20,22	150,000 159:4
working 232:11	293:6	307:7	158 244:11 245:4
238:12 242:22	yellow 37:14 39:1	10,000 144:19,24	16 177:7,12 182:14
249:5 277:18		145:2,10,24	183:17,18 185:12
290:12 298:20			16th 308:23
workover 238:8			163 244:11,22 245:2
works 22:4 282:13			173 207:7,8

18 94:7,12 95:17
 98:13
1801 1:21 302:22
186 306:13
1900s 26:8 84:8
1940s 85:2
1962 87:4 88:9,14
 91:16 93:15
1967 33:19 93:11
1971 224:5,8
1972 95:18 99:2
 113:24 300:15
1973 36:6
1974 217:20
1975 269:3
1976 214:13,15
 269:3
1986 155:16
1987 4:23
1990 33:19 34:4,5
 95:18 99:2 100:22
 100:24 113:25
 114:11 169:19,20
 173:23,25 205:9
 228:4 229:25
 233:4 234:1,3,7
 293:14 300:15
1990s 115:2 129:23
 175:15 176:2
 177:6 183:20
 272:2 276:24
1992 34:10,15 108:4
 108:9 203:11
 226:17
1993 219:13
1994 112:23 114:4,7
1998 11:19 12:24
1999 130:5

2

2 148:13 186:13,15
 188:17 189:5
 194:21 202:6,8
 252:21 275:15
 280:25 306:13

2,500 113:8
2.4 220:6
2:21 180:7,8
2:32 180:9,11
20 33:18 201:19
 293:6 305:23
20s 106:25
200,000 159:2
 162:25
2000 306:13
2003 131:23
20036-5306 2:4
2006 131:24
2007 23:2 258:4
 263:22
2008 270:24
2009 267:25
2010 28:1 263:23
2011 1:6,20 3:4
 308:19
2015 308:20
202.530.9594 2:5
202.622.0900 2:18
202.955.8500 2:5
203.862.9889 2:19
207 306:14
209 306:16
21 308:20
216 308:23
22 33:6
2268146 67:14
2268197 67:14
2300 2:11
25 170:8
250 200:22,23
 201:19
252 306:18
262 306:19
267 306:22
27 224:4 306:11
270 307:4
271 307:7
272 307:10
276 307:13
279 307:15

281 307:17

3

3 207:16,18 208:10
 211:8 266:2,5
 306:3,14
3:46 230:15,16
3:58 230:16,18
30 293:6
300,000 161:24
 163:1
34 131:25
35 2:17
350 33:17
356 33:5 171:24
 173:10
3718 1:3
374 214:15
38 154:20 155:1
 160:17 165:4
 268:20 290:22,23

4

4 208:6,7,11 211:9
 266:11 267:6,8,9
 267:12 268:15,18
 280:24 293:12,25
 295:9,20
4.2 224:3
4/7/10 306:11
400 222:25
400,000 162:23
41 247:21 248:5
45 132:9 133:13
 291:8

5

5 112:11 157:15,15
 209:20,22,23
 211:9 252:7,9,11
 259:19,19 306:16
5,000 160:10 161:5
 178:22 179:1,4,18
 185:6 188:14
 195:1,7,9 284:10

285:1,4,5
5-1 214:10
5-10 226:13,13
 231:4
5-11 229:24 232:2
5-14 233:3,3
5-15 233:24
5-4 214:10
5.10 227:4
5:28 286:20,21
5:34 286:21,23
5:57 304:18,19
50 181:25 245:9
 303:6
500 158:2 200:23,23
57 194:20
59 167:8

6

6 252:3,5 282:23,25
 306:18 307:17
6-10 215:9
6-13 243:21 244:10
 244:10
6-15 245:6,7
6-20 245:25
6-24 247:21 249:18
6-25 216:20
6-26 216:20
6-33 217:18
6-5 241:19,19
6.12 243:5
6.6 249:20
60 8:11 32:4 70:22
 70:23 286:12,25
 287:7,7,17 289:17
 290:8 297:24
61 58:10,12
64,000 133:9,11,13
 134:4 135:4,10
650 308:23

7

7 28:1 148:12
 262:19,21 267:19

270:15 306:19
70s 49:21
700 2:10
713.221.2320 2:12
713.221.2330 2:12
76 245:10
77002 2:11

8

8 267:16,18 270:16
 306:22
8th 267:25
8,400 286:5
80 246:3,11,19,20
 246:22
80s 49:22
80202 308:23
81 140:2,20
84 177:10,13

9

9 1:6,20 180:17,19
 231:14 270:17,18
 270:20,21 302:21
 307:4
9th 3:4
9:05 1:20 3:4
90 7:16
90s 49:22
916 49:11,17,25
92 7:16 141:20
93 135:1 142:1,18
94 194:21,21 255:10
97 142:7
98 140:22
99 142:5