

March 15, 2012

Julie Ann Carter
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1594 West North Temple
Suite 1210
Salt Lake City, UT 84116

RECEIVED
MAR 21 2012
DIV. OF OIL, GAS & MINING

RE: Informal Conference - PR Springs
ABI File No.: A6016FC
Hearing, taken February 23, 2012

Dear Ms. Carter,

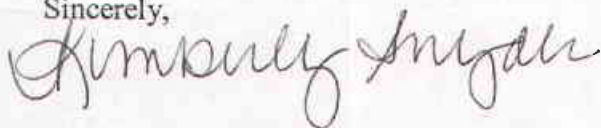
The official transcript in the above-mentioned matter was already processed and distributed by our office to all counsel. It was brought to the court reporter's attention that the header on the transcript was incorrect. We would like to clarify with this letter the following:

Page 1, line 1: "BEFORE THE BOARD OF OIL, GAS AND MINING" should read "BEFORE THE DIVISION OF OIL, GAS AND MINING".

Please keep this letter with your transcript as you would an errata sheet, making it apart thereof.

I apologize for the inconvenience this has caused you. If you have any questions, please contact me at: 800-288-3376, extension 3230 or you may e-mail me at ksnyder@depo.com.

Sincerely,



Kimberly Snyder
Atkinson-Baker, Inc.

CC: Denise A. Dragoo, Esq.
File

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

5
6 IN THE MATTER OF THE HEARING
7 ON LIVING RIVERS' PROTEST OF
8 RED LEAF RESOURCES' NOTICE OF
INTENTION TO COMMENCE LARGE MINE
OPERATIONS FOR THE SOUTHWEST #1 MINE,
M/047/0103, IN UTAH COUNTY, UTAH.

19 REPORTED BY: Michelle Mallonee, RPR

A6016FC

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

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16 Paul Baker, Environmental Manager
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17 Leslie Heppler, Engineer
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19 Tom Munson, Hydrologist
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12 Jeff Hartley
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15 Bob Bayer
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22 John Weisheit
Living Rivers
23 Elliott Lips
Great Basin Earth Science, Inc.
24
25

Page 3

1 PRESENT FOR STATE OF UTAH OFFICE OF ENERGY DEVELOPMENT:
2 Samantha Julian, Director
John Nowoslawski, Manager of Unconventional Energy
3 Development
Gibson Peters, P.E.
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I N D E X

STATEMENT BY:	PAGE
THE DIVISION	
Paul Baker	13
LIVING RIVERS	
Rob Dubuc	17
Elliott Lips	23
RED LEAF RESOURCES	
Denise Dragoo	34
Bob Bayer	47
THE DIVISION	
Steve Alder	49
Leslie Heppler	49
Tom Munson	50
DISCUSSION LEAD BY HEARING OFFICER BAZA	53

Page 4

1
2
3
4
5
6
7
8
9
10
11
12
13
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P R O C E E D I N G S
(9:13 a.m.)

HEARING OFFICER BAZA: Folks, let's go ahead and get started. Good morning to you all. My name is John Baza, director for the Division. I'm the hearing officer for this particular conference. Before beginning, I'm just going to read a few things, talk a minute, and then we'll start into the actual hearing portion of this.

First of all, I want to establish kind of the tone of this meeting. This room is small by design. I want it to be somewhat more intimate. I want it to be more of a discussion and not necessarily a formal back and forth, although I am creating some structure to this, which you will hear about in just a minute.

The court reporter is here, but is principally for my use. It's not necessary to have a transcript of this, but I know it would be hard for me to try to look back on this and work from written notes. So she's here. She's going to be making note of what you say. If she asks you to speak up at any particular time or slow down, please pay attention to that. And we'll try to work with her and make sure she's got a good record of what's happening today.

Let me start by saying today is Thursday,

Page 5

2 (Pages 2 to 5)

A6016FC

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

1 February 23, 2012. This hearing is being conducted at
2 the Department of Natural Resources Building in Salt Lake
3 City at -- well, it's almost 9:15 now. It was scheduled
4 to start at 9:00.

5 The purpose of the hearing is two-fold. First
6 of all, to provide an opportunity for those who have
7 submitted comments regarding the Division's conditional
8 tentative approval of the Red Leaf Resources' Notice of
9 Intention to commence large mine operations for the
10 Southwest #1 Mine M/047/0103, to present the basis for
11 their comments, and to provide the operator, the
12 applicant, and the Division a chance to respond to those
13 comments.

14 And two, within a reasonable time frame after
15 the hearing, I, as a hearing officer, will issue a final
16 appealable order, determining whether the applicant has
17 met the relevant rules and a Final Notice of Intention
18 should be approved for the Southwest #1 mine.

19 The scope of the information and comments that
20 we are going to receive today during this proceeding, I'm
21 going to limit to those comments that were presented in
22 the November 18, 2011, Living Rivers' protest to the
23 tentative decision to approve the Notice of Intention to
24 commence large mining operations for the Red Leaf
25 Resources Southwest #1 mine. And I'm going to list those

Page 6

1 four identified areas for you that were included in that
2 letter to the Division.

3 First, Living Rivers alleges that, "The NOI
4 fails to account adequately for the possible existence of
5 susceptible groundwater resources in the area of the
6 mine. Second, the NOI fails to account for the possible
7 impacts to groundwater in the area of the mine. Third,
8 that there's no evidence that Red Leaf intends to obtain
9 or that DOGM intends to require a groundwater permit from
10 the Division of Water Quality, as required by DWQ
11 regulations. And fourth, the NOI fails to provide
12 adequate information to show that the design of the
13 EnShale capsules will be sufficient to prevent leakage of
14 petrochemicals into the area surrounding the mine, and
15 specifically into local perched groundwater aquifers.

16 There was also a comment presented from Jennifer
17 Spinti, of the Institute for Clean and Secure Energy. I
18 do not believe she is here today, so I am going to forego
19 that comment regarding that letter that we received.

20 So pursuant to Utah Code Annotated Section
21 40-8-13(d)(3) and Utah Code Annotated Section 63G-4-201,
22 the Division noticed the hearing as a formal hearing.
23 And this hearing will commence as a formal hearing before
24 the Division.

25 Pursuant to Utah Code Annotated Section

Page 7

1 63G-4-207, "Any person may file a signed written petition
2 to intervene in a formal proceeding." To date, the
3 hearing officer has not received the written petition
4 from anyone seeking to intervene in this proceeding.

5 Pursuant to Utah Code Annotated Section
6 63G-4-202(3), "Any time before a final order is issued,
7 the presiding officer may convert a formal adjudicated
8 proceeding to informal adjudicated proceeding if it is in
9 the public interest and does not unfairly prejudice the
10 rights of any party."

11 As hearing officer, I've determined that
12 converting this hearing from formal hearing to informal
13 hearing is in the public interest and does not unfairly
14 prejudice the parties. Additionally, the parties have
15 stipulated to the conversion and have agreed that the
16 formal notice satisfies any relevant notice requirements
17 for the informal hearing.

18 So, the hearing will be conducted informally
19 pursuant to Utah Code Annotated Section 63G-4-203,
20 Procedures for Informal Hearing; Utah Administrative Code
21 R647-5-106, Procedures for Informal Phase; Utah
22 Administrative Code R647-5-107, Exhaustion of
23 Administrative Remedies.

24 In the event there is a conflict between Utah
25 Code Section 40-8-1 et seq. and Implementing Rules for

Page 8

1 Large Mining Operations at Utah Administrative Code R647,
2 the Utah Administrative Procedures Act shall govern.

3 Pursuant to Utah Code Annotated Section
4 63G-4-103(f), the parties to this hearing are the
5 protestants, Living Rivers, through their representative
6 Western Resource Advocates; the applicant, Red Leaf
7 Resources; the Division of Oil, Gas and mining; and then,
8 of course, any agreed person who submitted and was
9 granted intervention prior to conversion of the
10 proceeding from formal to informal, which there are none.

11 Pursuant to Utah Code Annotated Section
12 63G-4-203(1)(g) and Utah Administrative Code
13 R647-5-106(9), intervention in this informal proceeding
14 is prohibited.

15 Pursuant to Utah Code Annotated Section
16 63G-4-203(1)(c), "The parties shall testify, present
17 evidence, and comment on the issues presented in their
18 previous comments to the Division."

19 So the procedure for today's hearing will be as
20 follows -- and frankly, I'm limiting this to a two-hour
21 time frame. And I'm going to ask the parties to minimize
22 their comments to that two-hour time frame in this order:
23 First, I'm going to ask the Division to provide a brief
24 history of the permit leading up to this hearing, which I
25 anticipate should take ten minutes or less. Then I'm

Page 9

3 (Pages 6 to 9)

A6016FC**HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012**

1 going to ask Living Rivers to present the basis for their
2 comments and their protest. And I'm going to ask them to
3 do that in approximately 20 minutes. And then I'm going
4 to ask Red Leaf Resources to have an opportunity to
5 address those comments. And I'm also going to ask that
6 you do that in 20 minutes. And then finally, I'm going
7 to allow the Division to have an opportunity to address
8 the comments in an additional 20 minutes.

9 Now, recognizing that there may be some leeway
10 in that and that we're going to try to do this in two
11 hours, hopefully there will be a little bit of time left
12 to resolve any unresolved issues.

13 Earlene, I'm going to ask you to help me with
14 some time keeping here, if you could.

15 So post hearing: After the hearing, and
16 reviewing the information in the Division's file at the
17 date of the decision, the evidence and testimony
18 presented, and any additional information requested, the
19 hearing officer will issue an order determining whether
20 the applicant has met the relevant rules and whether a
21 final permit shall be approved. After the issuance of a
22 final order by the hearing officer, the parties may
23 appeal the decision, pursuant to R647-5-106 part 17.

24 I would also again indicate to you that this is
25 informal. It is an intimate setting. I would ask

Page 10

1 parties to be respectful of each other's comments. And
2 note that we have some time frames that we're going to
3 try to constrain ourselves to.

4 But also that, in my own opinion, the purpose
5 that I would hope to achieve out of this as a hearing
6 officer is determining was there anything in the
7 Division's performance of the analysis and their review
8 of the application that was not in accordance with the
9 rules that we need to correct? And that's my principal
10 purpose for wanting to do this hearing.

11 So let me ask: Does anybody have any questions
12 before we start?

13 MR. DUBUC: Mr. Baza, we may take, if we may, a
14 few more than 20 minutes. Just we weren't prepared for
15 that limitation. I don't think it will be much more,
16 perhaps five minutes, if that would be acceptable.

17 HEARING OFFICER BAZA: Okay. Yeah. I know
18 there's going to be some slop here. I'm just trying to
19 keep it within that two-hour time frame.

20 MR. DUBUC: Okay.

21 MS. DRAGOO: Mr. Hearing Officer, we had a
22 question, too, about in the event that there's something
23 technical and new that's brought up and it looks like we
24 need to convert back to a formal hearing, we would
25 reserve that right. So say that it looks like there's

Page 11

1 some new issue that needs discovery, or something like
2 that, we would reserve that right.

3 HEARING OFFICER BAZA: I understand.

4 MS. DRAGOO: Thank you.

5 HEARING OFFICER BAZA: I think we probably
6 should introduce the people speaking for the parties.
7 First of all, for the Division, I assume it will be
8 principally Mr. Alder?

9 MR. ALDER: Steve Alder. I'll be appearing
10 for -- helping the Division; although I think we'll
11 handle it pretty much individually by the Division people
12 who did the review. They'll make their own comments as
13 appropriate. Paul Baker will do a brief introduction of
14 the mine first.

15 HEARING OFFICER BAZA: Okay.

16 MR. ALDER: With Paul, we have -- I could
17 introduce the people. Leslie and Tom will be addressing
18 the hydrologic issues.

19 HEARING OFFICER BAZA: Okay. And when you make
20 your comment, I'll ask that you give your full names so
21 the court reporter can pick that up.

22 And then for Living Rivers, it will be?

23 MR. DUBUC: Yes, good morning. I'm Rob Dubuc.
24 I'm counsel for Living Rivers. This is Elliott Lips, who
25 will be testifying. And my colleague, Joro Walker, will

Page 12

1 be here as well.

2 HEARING OFFICER BAZA: Sounds great.

3 And for Red Leaf Resources?

4 MS. DRAGOO: Denise Dragoo, here on behalf -- as
5 counsel for Red Leaf Resources. Laura Nelson, as company
6 representative. Fran Amendola, who prepared the Notice
7 of Intent on behalf of Northwest. And Bob Bayer, who is
8 our hydrologist and geologist.

9 HEARING OFFICER BAZA: Seated next to me is
10 Emily Lewis from the Attorney General's office, who will
11 be assisting me as legal counsel as a hearing officer.
12 Then in the back is Earlene Russell, who is just going to
13 staff the meeting for me. I think that identifies pretty
14 much everybody who wants to participate in the hearing.
15 So why don't we go ahead and have, first of all,
16 the Division present a brief history of the application
17 and the permit review.

18 STATEMENTS FROM THE DIVISION

19 MR. BAKER: I'm Paul Baker. And Steve Alder
20 asked me to present a brief history and overview of the
21 mine. I apologize that I didn't look up exact dates for
22 when submittals were received and reviews were sent, but
23 I'll do the best I can.

24 The mine is in -- the proposed mine is in
25 Township 13 South, Ranges 22 and 23 East in Uintah

Page 13

4 (Pages 10 to 13)

1 County. It's in central Uintah County near the Seep
2 Ridge Road.
3 The operator is proposing to mine -- the entire
4 proposed disturbed area is 1477 acres on three sections
5 of land. It's primarily land that's owned by the Trust
6 Lands Administration, although there is private
7 inholding.

8 Just a general overview of what would happen in
9 a mining operation. First, the land would be cleared.
10 Soil would be removed and stockpiled. There would be
11 pre-stripping of overburden where required and that
12 material would be removed. And the oil shale ore would
13 be blasted, removed, crushed in preparation for
14 constructing cells, capsules where the oil shale would be
15 processed. And once these capsules are basically
16 excavated, the operator would put in a layer of what they
17 call bentonite amended soil, or BAS. It would be a
18 three-foot layer of BAS. And that would be covered on
19 the bottom by a steel pan. And that would then be
20 covered by 13 feet of gravel. And then the oil shale ore
21 would be put back into the capsule and -- crushed and put
22 back into the capsule. And the entire capsule would be
23 surrounded by this 13 feet of gravel, and on the outside,
24 the three-foot area of bentonite amended soil.

25 As the ore is put back into the capsule, there

Page 14

1 are also pipes that are put in that would help -- or that
2 would be used to heat the oil shale ore. And then they
3 would go through the process of heating that and
4 extracting oil or the kerogen. And once the capsule
5 was -- once that process was complete, eventually there
6 would be another tier, another level put on top of that
7 one. And basically, the process would be repeated. And
8 this process of constructing the capsules proceeds over a
9 several-year period.

10 Like I say, covering that 1400 or so acres,
11 there would also be a shop and office buildings, oil
12 storage facilities, things like that.

13 When once the capsules have been allowed to
14 cool, they will be graded and then soil will be placed on
15 top of them, and the area reseeded and revegetated. I'm
16 sure we'll be getting into more details of exactly what
17 the mining operation will be. But that's kind of the
18 basis of it.

19 The Division originally received the application
20 in April of 2011. And I don't remember exactly what
21 month the first review went out -- a few months later. I
22 said I didn't look up those dates, and I apologize for
23 that. And following that review, the Division received,
24 I believe it was two more submittals that were reviewed.
25 And they were reviewed really more informally than with a

Page 15

1 formal review. We didn't send another formal review
2 letter. Rather, we communicated with the operator. And
3 they made a few changes to the application until the
4 Division issued a tentative approval, a conditional
5 tentative approval, in October of 2011. That then went
6 to public notice. And it was published in Salt Lake City
7 and Vernal newspapers.

8 The public notice period ended November 28,
9 2011, and the Division received several letters: The one
10 that we're discussing today, of course, from Western
11 Resource Advocates; a comment letter from Jennifer Spinti
12 from the University of Utah; we received two letters from
13 the Governor's Resource Development Coordinating
14 Committee; and several letters in support of the project.

15 I think that's the basis of what I would have to
16 present.

17 HEARING OFFICER BAZA: Okay. And did you
18 mention the date upon which you issued the tentative
19 approval and when that notice went out?

20 MR. BAKER: That was in October of 2011. Again,
21 I don't have the exact dates.

22 HEARING OFFICER BAZA: Okay. Excuse me for just
23 a minute. I'm just trying to pull up information on my
24 tablet here.

25 On the 20th of October, it looks like the

Page 16

1 tentative decision to approve was sent out by the
2 Division.

3 MR. BAKER: Okay. That sounds about right.

4 HEARING OFFICER BAZA: Okay. Anything else,
5 Paul or the Division?

6 MR. ALDER: No.

7 HEARING OFFICER BAZA: Okay.

8 MR. BAKER: No, I don't think so. Not for now.

9 HEARING OFFICER BAZA: Why don't we go ahead,
10 and I believe the next item I indicated is we would hear
11 from Living Rivers, Mr. Dubuc. And again, 20 minutes,
12 but we'll allow for some leeway there.

13 STATEMENTS FROM LIVING RIVERS

14 MR. DUBUC: We will be as succinct as possible.

15 Good morning, Mr. Baza. As I said, my name is
16 Rob Dubuc. What I will do is I have a brief prepared
17 opening statement. And then Mr. Lips will testify on a
18 few issues, specifically those addressed in our comment
19 letter.

20 Living Rivers' task today is admittedly a
21 difficult one, and that's to convince you to overturn
22 your agency's decision to recommend approval of Red
23 Leaf's NOI; to say, more or less, that your agency made a
24 mistake; and to direct your agency personnel go back and
25 redo the recommendation. No agency director would take

Page 17

5 (Pages 14 to 17)

A6016FC

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

1 such a task lightly.
2 On top of that, there is the pressure that the
3 industry is bringing to allow it to develop these
4 resources as quickly as possible. Red Leaf wants
5 certainty. They want a streamlined permitting process,
6 and they want approval in months, not years. We're all
7 aware of the political rhetoric surrounding development
8 of these resources, that Utah is the Saudi Arabia of oil
9 shale, that the state is open for business for tar sands
10 and oil shale development, and that we need to push for
11 mining these resources to help free our country from its
12 dependence on foreign oil.
13 In a letter sent to you a few weeks ago, Red
14 Leaf contends that we shouldn't even be here today, that
15 our concerns are non substantive, that all the issues
16 that we raise relate to groundwater quality, and that
17 these issues can and will be dealt with through the
18 groundwater discharge permit process at DWQ.
19 But as you know, it's not that simple. While
20 there is overlap between the oversight provided by the
21 two agencies, when it comes to issues such as impacts to
22 groundwater, each of those agencies has its own set of
23 regulations and its own requirements to account for any
24 possible impacts to the environment, including
25 groundwater.

Page 18

1 As we noted in our protest, for your agency,
2 those requirements require you to make sure that the NOI
3 adequately accounts for both presence of groundwater,
4 under R347-4-106(8) (sic), and for the impacts of that
5 groundwater, under R347-4-109(1) (sic). And it is those
6 regulatory responsibilities that bring us here today.
7 Let me make a brief editorial aside about the
8 regulatory framework that your agency is using to
9 regulate oil shale and tar sands. In the current
10 regulations, both of these come under the heading "Non
11 Coal" -- regulations that work much better for more
12 traditional hard rock mining. Unfortunately, the non
13 coal regs don't take into account the experimental nature
14 and the new technologies associated with oil shale and
15 tar sand mining. As we've seen so far, each of these
16 proposed mines is unique, not just from -- unique not
17 just from hard rock mining but from each other. And I'd
18 like to take this opportunity to request a meeting with
19 you and your staff in the next few months to discuss some
20 possible changes to these regulations that would be a
21 better fit for these new industries.
22 Now, I understand that companies such as Red
23 Leaf would prefer not to have their activities
24 characterized as "first of a kind" or "experimental"
25 because both of these labels imply risk. In today's

Page 19

1 economic climate, risky ventures tend to scare away
2 investors. But those labels are accurate. The process
3 that Red Leaf has proposed has never been done before on
4 any scale, let alone the one outlined in the NOI. It is
5 first of a kind and it is experimental. And as Mr. Lips
6 will outline, the risks associated with it are not
7 limited to economic ones.

8 You've been provided a brief outline of Red
9 Leaf's proposal, but let me put it in some perspective.
10 In its NOI, Red Leaf has stated that it plans to build a
11 series of capsules. Each capsule will cover 450,000
12 square feet over ten acres in size, 130 feet tall. To
13 give you some perspective on the scale, that's a capsule
14 that's 12 1/2 times as large as the building we're
15 sitting in and three times as tall. But the proposal is
16 not to build one of those capsules, it's to build 118 of
17 them, 68 of the capsules in the bottom layer and 50
18 additional capsules stacked on top of that bottom.
19 That's a total of 1219 acres worth of capsules covering
20 over 53 million square feet, almost two square miles.

21 Underlying virtually all the company's claims
22 that this process is environmentally -- is that this
23 process is environmentally benign, that these capsules
24 are safe and that they will not leak petrochemicals and
25 leechate into the environment, either during the heating

Page 20

1 process or once the capsules have cooled and settled.
2 Let me state flat out we dispute that claim and
3 we dispute the company's right to make it. Fact of the
4 matter is that the closest the company has come to
5 building one of these capsules is a pilot project
6 approximately 1/10th of the proposed size of a single one
7 of these capsules. Without disclosing results of
8 whatever testing the company did on that pilot project or
9 proposing a conservative protective approach, it now
10 makes the claim that not only will these capsules work
11 for their intended purpose, but that the capsules will be
12 impermeable. And they're asking you to allow them to go
13 from a 1 1/2 acre pilot project to a 1219 acre production
14 with no steps in between. There's no plan for ramp-up of
15 the scale of this project or to build several scale-sized
16 capsules to see if they will work as designed. Instead,
17 Red Leaf wants it all and they want it now.

18 The fact of the matter is that the company is
19 pushing too hard and it's trying to take shortcuts
20 through the approval process. Let me give you an example
21 of how Red Leaf's rush to obtain approval has been
22 counterproductive.

23 Your agency based its decision to approve the
24 NOI, in part, on Red Leaf's assertion that, "The
25 operation of the proposed capsules will not result in

Page 21

6 (Pages 18 to 21)

1 discharge of pollutants nor is it probable that discharge
2 will result; therefore, Red Leaf does not believe that it
3 has a duty to apply for a groundwater discharge permit."

4 Several weeks before your agency issued its
5 tentative approval of the NOI, DWQ notified both the
6 company and your agency that a complete groundwater
7 permit application would, in fact, be required. In other
8 words, your agency's approval was premised on incorrect
9 information; namely, that DWQ agreed with Red Leaf that
10 no discharge of pollutants would result, based on the
11 capsule design.

12 Not only that, because your agency relied on
13 that premise, your personnel was deprived of the
14 information they needed to fulfill DOGM's regulatory
15 obligations, information that's still being provided to
16 DWQ today. But that's directly pertinent to determining
17 if this proposal will impact groundwater in the area of
18 the mine.

19 A full two months after you issued your
20 tentative approval, Red Leaf submitted a 195-page
21 groundwater application to DWQ. That application
22 contains a significant amount of information that wasn't
23 contained in the approved NOI, but that your agency
24 should have had before it made its recommendation to
25 approve this mine. Even with that additional

Page 22

1 information, DWQ has not only asked Red Leaf to provide
2 more information, but it's also asked the company to
3 expand its modeling to see what the long-term effects on
4 groundwater would be.

5 The company's data show, for instance, that the
6 spent shale will generate high pH leachate. And the
7 model that the company ran only went out to 30 years.

8 As I noted, Mr. Baza, this is information that
9 your agency should have had before it made its
10 recommendation to approve the mine. At a minimum, we are
11 asking you to take a step back and allow the permitting
12 process to run its course and to allow DWQ to obtain the
13 information it needs to make its decision.

14 But ultimately, we're asking you to direct your
15 personnel to reconsider their recommendation in light of
16 this new information so that any recommendation they make
17 is as informed as possible. To do anything else would be
18 a violation of your obligation under Utah law.

19 At this point, I'll turn to Mr. Lips, who will
20 outline in detail why the NOI fails to meet DOGM's
21 regulatory requirements.

22 MR. LIPS: Thank you, Mr. Baza. I appreciate
23 the opportunity to present these comments. I am Elliott
24 Lips, for the record.

25 The information presented in the NOI is

Page 23

1 insufficient to conclude that there are not groundwater
2 resources that will be impacted by the proposed mining
3 operation.

4 As a way of background, a little bit on the
5 geology. The Parachute Creek Member of the Green River
6 Formation is the surface bedrock formation throughout the
7 majority of Red Leaf parcels. This member contains the
8 Mahogany Oil Shale zone from which the raw ore would be
9 extracted. Open-pit mining operations would extend to a
10 depth of 250 feet below the ground surface. Underlying
11 the Parachute Creek Member is the Douglas Creek Member of
12 the Green River Formation.

13 The groundwater permit application states that
14 the depth to the shallowest occurrence of groundwater
15 known is 600 feet below the ground surface and 350 feet
16 below the bottom of the open pit. However, there's
17 insufficient information in the NOI to support this
18 statement and, in fact, some information that contradicts
19 it. The NOI states that it is unlikely -- only states
20 that it is unlikely that the Parachute Creek and Douglas
21 Creek contains significant quantities of water, although
22 the NOI acknowledges that its presence in these rocks can
23 not be ruled out.

24 On a regional basis, the groundwater permit
25 application states that the Douglas Creek Member

Page 24

1 potentially contains the uppermost aquifer in the Green
2 River Formation in the eastern Uinta Basin. In fact, as
3 reported in both the NOI and the groundwater permit
4 application, the BLM considers both the Parachute Creek
5 and Douglas Creek Members as key aquifers in the general
6 Uinta Basin area. Furthermore, the groundwater permit
7 application acknowledges the presence of groundwater in
8 the Douglas Creek aquifer and discusses the movement and
9 areas of discharge in the southern and northern parts of
10 the Uinta Basin.

11 And finally, the groundwater permit application
12 provides data from nearby wells that have identified
13 groundwater occurrence that, "Likely reflect localized
14 perched aquifers associated with lenses of permeable
15 bedrock in the Douglas Creek Member of the Green River
16 Formation."

17 In spite of this, the NOI provides three lines
18 of evidence in support of their conclusion for the
19 absence of groundwater in the Parachute Creek and Douglas
20 Creek. First, the NOI reports that there are no USGS
21 mapped springs issuing from either of these members in or
22 near the parcels. This is insufficient evidence upon
23 which one can conclude that there are no aquifers. Not
24 all springs are mapped by the USGS. And this is not the
25 standard for determining the presence or absence of

Page 25

7 (Pages 22 to 25)

1 groundwater. More importantly, the NOI does not contain
2 the results of a thorough, systematic seep and spring
3 inventory of the parcels and nearby areas.

4 Furthermore, the NOI states -- citing Price and
5 Miller, a published report -- discussing springs issuing
6 from the Green River Formation.

7 The second line of evidence in support of their
8 conclusion for absence of groundwater, the NOI reports
9 that exploration drilling by Red Leaf Resources did not
10 encounter groundwater. Six holes were drilled for a
11 proposed 1656-acre mine area, which is insufficient to
12 establish the presence or absence of groundwater. The
13 NOI did not contain the drill logs, so it's not possible
14 to know what was or was not recorded during drilling.

15 Often during exploration drilling, the driller
16 or geologist simply does not make observations one way or
17 the other regarding the presence or absence of
18 groundwater. If this is the case, the lack of
19 observation of groundwater does not allow one to conclude
20 that there's an absence of groundwater. In fact, the
21 groundwater permit application reports that the holes
22 were drilled with water as a circulation medium and that
23 small quantities of water might not have been observed.

24 In addition, the statements made by Red Leaf in
25 the NOI that the wells did not encounter groundwater is

Page 26

1 contradicted by the recent groundwater permit
2 application, which reports that water was encountered
3 during drilling in one hole, RL-1, in fractures near the
4 top of the hole. This confirms the presence of
5 groundwater in the Parachute Creek Member of the Green
6 River Formation.

7 The groundwater permit application reports water
8 at 600 feet below the ground surface in the Red Leaf
9 water well; however, neither the NOI nor the groundwater
10 permit application provide information about this well,
11 such as its location, a geologic log, how the well was
12 completed, or results of aquifer tests, if conducted.

13 The third line of evidence provided in the NOI
14 is a summary of nearby wells on file with the Utah
15 Division of Water Rights. This provides little pertinent
16 information to the question of aquifers in the parcels to
17 be mined by Red Leaf because there are no drill logs, no
18 information on the geologic formations in which the wells
19 were completed, and no information on groundwater that
20 was encountered at shallower depths.

21 With regard to projected impacts to groundwater,
22 the NOI states that, "Groundwater is not susceptible to
23 any impacts from the mining and retorting operations
24 because it is isolated from these operations by several
25 hundred feet of low permeability marlstones."

Page 27

1 However, the NOI also reports that the first
2 porous unit occurs approximately 50 to 100 feet below the
3 Mahogany in the Douglas Creek Member. In fact, Figure 5
4 of the groundwater permit application shows the Douglas
5 Creek Member approximately 55 feet below the Mahogany oil
6 shale zone. In the Texas (sic) Seep Ridge Unit No. 2
7 well, less than two miles west of the Red Leaf Resources,
8 reports the Douglas Creek Member 49 feet below the
9 Mahogany.

10 In summary, the record is incomplete. And what
11 information exists indicates that there is the potential
12 for groundwater in localized perched aquifers in the
13 Douglas Creek Member approximately 50 feet below the
14 floor of the proposed mine and/or in fractures in the
15 Parachute Creek Member.

16 Red Leaf relies on the presumption that the
17 capsule design, particularly the bentonite amended soil,
18 or BAS layer, will prevent migration of fluids from the
19 ore. This presumption is key to Red Leaf's belief that
20 there will be no impacts to water resources.

21 In support of the groundwater permit
22 application, Red Leaf evaluated seepage of precipitation
23 through the upper BAS layer that will occur after the
24 mining has ceased and the capsules are reclaimed with a
25 cover of overburden and vegetated top soil.

Page 28

1 The seepage was evaluated using the Hydrologic
2 Evaluation of Landfill Performance, or HELP computer
3 program, from the U.S. Army Corps of Engineers. The
4 results of Red Leaf's analysis indicate that seepage of
5 precipitation through the upper BAS layer into the spent
6 ore will be, for the base reclaim case, 1683 gallons per
7 year per capsule. For the non-vegetated case, seepage
8 and precipitation water through the upper BAS layer will
9 be 73,772 gallons per year per capsule. They also looked
10 at a case of increased precipitation. Under that
11 scenario, the seepage through the upper BAS layer is
12 44,319 gallons per year per capsule.

13 First, the NOI does not discuss any of these
14 seepage analysis results. In fact, these seepage results
15 completely contradict statements made in the NOI that,
16 "The capsules are designed to be fully contained." And,
17 "fully isolated from the environment by design, both
18 during operation and following reclamation." And, "water
19 will not enter the hydrocarbon recovery zone of the
20 capsules."

21 More importantly, Red Leaf did not evaluate the
22 quantity of leachate that will percolate through the
23 lower BAS layer. Clearly, the BAS layer is not
24 impermeable. So it's logical to conclude that water will
25 seep down through the spent ore and ultimately through

Page 29

8 (Pages 26 to 29)

1 the lower BAS layer. In fact, the DWQ recognizes that
2 this is possible. And in a letter to Red Leaf Resources
3 dated February 10, 2012, instructed Red Leaf to conduct
4 additional analysis using the HELP model to evaluate this
5 exact scenario.

6 It's clear that even under the best-case
7 conditions, that in which the BAS layer remains intact
8 during the heating and extraction process, Red Leaf's
9 underlying presumption that the capsules are sufficient
10 to prevent migration of fluids is unsupported by their
11 own data and analysis. Furthermore, the NOI fails to
12 provide information that the BAS layer will remain
13 intact.

14 Red Leaf proposes to recover the oil that is
15 liberated from the rock as a result of being heated in
16 capsules constructed on site. The crushed ore will be
17 placed in the capsule in layers with heat-conducting
18 pipe. The liberated oil will be collected in pipes and
19 in a pan at the bottom of the capsule and directed to a
20 sump.

21 Red Leaf claims that all of the oil and volatile
22 hydrocarbons will be contained by constructing the
23 capsules with a three-foot layer of bentonite amended
24 soil, BAS, and a 13-foot layer of gravel between the BAS
25 and the ore.

Page 30

1 During the heating and extraction process, the
2 ore in the capsule loses approximately 40 to 45 feet in
3 total height. The initial thickness of the ore in each
4 tier is 100 feet.

5 This method of recovering hydrocarbons from oil
6 shale is a new concept that has never been demonstrated
7 at the scale that Red Leaf proposes. In order to
8 evaluate this new and untested design, the Division and
9 the public must rely on either the results of a pilot
10 project using the same construction and operation or on
11 the results of sufficient and appropriate laboratory
12 analysis and modeling. Unfortunately, the NOI fails to
13 provide information on either of these.

14 Red Leaf has constructed a test facility under
15 its exploration permit. However, the NOI contains no
16 information about the results of this test facility.
17 Specifically, there is no report of the evaluation of the
18 capsule design. No discussion of potential scaling
19 effects. No discussion of the liner or liner systems
20 that were used and how they might differ from what is
21 currently being proposed. No discussion of the geometry
22 of the test capsules. No discussion of the BAS and how
23 it was constructed. No analysis of the integrity of the
24 BAS during heating and extraction. And most importantly,
25 no evaluation of any seepage from the capsules.

Page 31

1 The NOI is further incomplete because it does
2 not address the loss of integrity of the proposed BAS as
3 a result of the heating and extraction process.
4 Specifically, the ore will be heated to a temperature of
5 725 degrees Fahrenheit. The NOI does not discuss the
6 impact that this will have on the integrity of the BAS.
7 In fact, Norwest, one of the Red Leaf's consultants,
8 recommended that this exact issue be evaluated.
9 Furthermore, Red Leaf acknowledges that the integrity of
10 the BAS is compromised by heat and states, "To keep the
11 BAS seal functioning, the BAS needs to be protected from
12 the heat that is introduced into the capsules from the
13 heating pipes."

14 Second, a loss of 40 to 45 feet in thickness in
15 the ore will exert stresses on the BAS. The groundwater
16 permit application states that the knuckle design will
17 keep the BAS in compression during and after settling,
18 and thereby prevent shear failures. However, Red Leaf
19 has not provided the results of any geotechnical analysis
20 or testing to support this assumption.

21 MS. RUSSELL: Twenty minutes has expired.

22 MR. LIPS: Okay. I have just a few more
23 minutes. I have, like, three minutes. Thank you.

24 The groundwater permit application simply states
25 that, "The information provided below on laboratory

Page 32

1 testing, pilot capsule investigation, and modeling are
2 high-level summaries of separate investigations and
3 reports."

4 Without providing the actual reports, it's not
5 possible for the Division, DWQ, or the public to evaluate
6 the validity of the claims made by Red Leaf.
7 Specifically, Red Leaf fails to demonstrate how
8 compressive stresses will extend from the sides of the
9 BAS to the center over distances of up to 900 feet.

10 In addition, the groundwater permit application
11 states that the BAS layer is predicted to stay intact, in
12 part due to the surcharge load from the weight of the
13 second tier capsule. This load would not exist for the
14 uppermost tier, and thus, compression of the BAS would be
15 significantly reduced.

16 As described and shown in the drawings in the
17 NOI, the BAS will remain intact during the settling of
18 the ore. It is not possible to reduce the volume of the
19 ore by 40 to 45 feet and not cause displacement of the
20 BAS. As shown by Red Leaf, the BAS would have to undergo
21 an approximate six percent volumetric change in order to
22 remain intact. The documents do not contain an analysis
23 of how this volumetric change, if it actually occurs,
24 will affect integrity of the BAS. If the BAS does not
25 undergo a volumetric change, there will be cracks as a

Page 33

9 (Pages 30 to 33)

<p>1 result of differential settlement and movement to 2 accommodate the displacement of the BAS. This movement 3 of the BAS will compromise its integrity.</p> <p>4 The NOI does not discuss how the differential 5 settlement of the ore in the capsules and the resulting 6 stresses it will apply to the BAS will affect the 7 integrity of the BAS. The NOI does not discuss the 8 effect that the volatile organics, gas pressure, or 9 degradation by steam and/or saline or alkaline fluids 10 will have on the BAS.</p> <p>11 In summary, the information presented in the NOI 12 is insufficient to conclude that the integrity of the BAS 13 will not be compromised during the heating and extraction 14 process or an evaluation of what impacts will occur if 15 the BAS integrity is compromised. Thank you.</p> <p>16 MR. DUBUC: That concludes our prepared remarks. 17 Do you have any questions?</p> <p>18 HEARING OFFICER BAZA: You know, I do have some 19 questions. But I am going to wait to hear from both Red 20 Leaf and the Division before I start asking that.</p> <p>21 So Denise, I'll turn the time over to you.</p> <p>22 STATEMENTS BY RED LEAF</p> <p>23 MS. DRAGOO: Great. Thank you, Director Baza. 24 I think the fatal flaw in the discussion that 25 we've just heard is the failure of Living Rivers to</p> <p style="text-align: right;">Page 34</p>	<p>1 submitted as an appendix to the NOI. It's Appendix S. 2 And we've attached that as Exhibit D to our materials.</p> <p>3 But just going through our response, we just 4 have gone through item by item the four issues that 5 Director Baza raised and are raised in the Living Rivers 6 letter.</p> <p>7 Going through that, first, the question about 8 whether the NOI adequately accounts for local groundwater 9 resources. And basically, this is a very simple 10 requirement under the Division's rules. There are just 11 two requirements. First, identification of depth to 12 groundwater. That's identified -- if you look at Exhibit 13 B of your packet, the NOI, pages 37 through 38 identify 14 those -- the depth to groundwater.</p> <p>15 In addition, Red Leaf meets the requirements, 16 simple requirements, of R647-4-109, which require an 17 impact statement and simply require that the operator 18 provide a narrative description of the groundwater 19 impacts. Those are set forth at pages 40 through 42, 20 attached as Exhibit C -- very clearly set forth.</p> <p>21 The Division issued an executive summary 22 confirming that Red Leaf had met these requirements. 23 That executive summary, dated October 5, 2011, is 24 attached as Exhibit E. It confirms that the records of 25 the nearby wells, which are retained by the Division of</p> <p style="text-align: right;">Page 36</p>
<p>1 acknowledge that the groundwater discharge permit is a 2 condition to the October 20th tentative decision. For 3 some reason, the comments submitted on November 18th, 4 which was nearly a month later, don't even acknowledge 5 the fact that Condition No. 1 of that October 20th 6 decision was that Red Leaf should go ahead and obtain the 7 groundwater discharge permit from the Division of Water 8 Quality. Despite that fact, they presented those 9 comments and suggested that, in fact, Red Leaf was not 10 going to obtain the groundwater discharge permit.</p> <p>11 We think that was such a fatal flaw that the 12 comments submitted were not even substantive. And we 13 suggest, in fact, that the Division should have gone 14 ahead and finalized the Notice of Intent in November 15 following the end of the 30-day comment period because 16 the comments submitted by Living Rivers were simply not 17 substantive.</p> <p>18 Overall, Red Leaf contends it has met the 19 statutory requirements and the regulatory requirements, 20 which were much more narrowly focused than those 21 discussed by Mr. Lips. We've prepared a response, which 22 I'll provide to you here, in writing which shows the 23 excerpts from the NOI and the groundwater permit that 24 address concerns. Living Rivers fails to acknowledge the 25 fact the groundwater permit application has been</p> <p style="text-align: right;">Page 35</p>	<p>1 Water Rights, reflect the depth of the groundwater. And 2 it's reflected in 2(d), "Isolated Perched Aquifers," as a 3 1312-foot deep well. So they identified the depth of 4 groundwater. That's all that is required.</p> <p>5 In addition, the Division confirmed at that time 6 and agreed with Red Leaf's conclusion that groundwater is 7 not susceptible to mining operations because it's 8 isolated by several hundred feet of low permeability 9 marlstone.</p> <p>10 So it was very clear that Red Leaf met the 11 requirements, and the Division properly issued the Notice 12 of Intent on those two bases.</p> <p>13 With respect to the concerns raised by Living 14 Rivers that the Parachute Creek and Douglas Creek 15 Formations, members of the Green River Formation, are not 16 adequately analyzed. There's a very detailed hydrologic 17 report provided in both the NOI and also in Appendix S. 18 This information confirms that there's not, on the basis 19 of both the USGS mapped springs that show that there are 20 none in this area and also that the water source is 21 located within a one-mile radius, confirm that this 22 area -- basically provide an adequate analysis of these 23 members. That's provided in Exhibit G. And the full 24 hydrology report is set forth in Appendix S.</p> <p>25 There was also a concern raised by Living Rivers</p> <p style="text-align: right;">Page 37</p>

1 that there was some groundwater encountered in drilling.
 2 But this was just a very little groundwater. We've
 3 addressed this on page 2 and added the discussion from
 4 Appendix S, which confirms that there was a small amount
 5 of water encountered in drilling those six core holes,
 6 but only in one of the six core holes. Small quantities
 7 of water were observed, but they're not significant and
 8 they're not in the water bearing -- any major water
 9 bearing horizon would have been recognized in this core
 10 hole drilling.

11 The well logs are set forth. Contrary to
 12 Mr. Elliott's (sic) suggestion, they are set forth in
 13 Figure 6 of the groundwater quality discharge application
 14 that's attached as Exhibit I.

15 Finally, the Notice of Intent provides a summary
 16 of the nearby water wells that are on file with the Utah
 17 Division of Water Rights. Those are attached as Exhibit
 18 K. And contrary to the allegations of Living Rivers,
 19 these wells are clearly identified in the state
 20 engineer's database location. And that database, you
 21 could simply take administrative notice of that. But if
 22 you need those database records, we've pulled them and we
 23 can provide them for the record, if you'd like.

24 There's also a concern raised by Living Rivers
 25 that the statements regarding isolation of groundwater

Page 38

1 are inaccurate and confusing. And this is really not the
 2 case. The NOI provides a summary of the existing
 3 literature in this area, which shows that there is a
 4 porous unit. About 50 to 100 people live in the Mahogany
 5 zone. However, this permeability is not uniform
 6 throughout the formation. And in Red Leaf's research,
 7 they found -- in core testing, they found no evidence of
 8 groundwater resources in this area. In addition,
 9 although Living Rivers suggests that there's
 10 inconsistencies in the data, they present no evidence to
 11 support its protests that there are groundwater resources
 12 in this area.

13 In addition, Red Leaf Resources contests the
 14 definition of "aquifer." In fact, Living Rivers provides
 15 no definition of aquifer. The definition that's
 16 appropriate in this case is that set forth by the
 17 Department of Environmental Quality. They define an
 18 aquifer as, "A geologic formation that contains
 19 sufficiently saturated permeable material to yield usable
 20 quantities of water to wells and springs." And based on
 21 that definition, there are no water resources that are
 22 affected in this area.

23 As we indicated, Living Rivers has relied on
 24 outdated information. The initial NOI, which was
 25 submitted in April, was updated in September. And in

Page 39

1 addition, of course, there was the October 20th decision
 2 of tentative approval of the Division, which confirmed
 3 that this entire permit was conditioned on obtaining a
 4 groundwater discharge permit. That discharge permit
 5 application was submitted as Appendix S. And once again,
 6 that's in the record.

7 The letter also states that -- from Living
 8 Rivers -- states incorrectly that Red Leaf does not
 9 intend to obtain and the Division does not intend to
 10 require a groundwater discharge permit. That's clearly
 11 not correct. Apparently, Living Rivers didn't carefully
 12 review the October 20th tentative approval, which was
 13 clearly conditioned on the Division of Water Rights'
 14 issuance of the groundwater permit.

15 In terms of the allegations that the EcoShale
 16 design will not prevent contamination, this issue is
 17 addressed very thoroughly in the groundwater discharge
 18 application submitted as Appendix S and under
 19 consideration of the Division of Water Quality. There
 20 are probably -- well, there are some 15 pages of detailed
 21 analysis regarding this and set forth, as noted in our
 22 letter, at pages 25 through 40 of Appendix S. Sections
 23 11, 12, and 13 of that groundwater discharge permit
 24 application addressed the design and also addressed the
 25 issues raised by Norwest.

Page 40

1 Norwest initially made some recommendations
 2 regarding the design of the EcoShale system. And they
 3 made those recommendations with respect to the April 21
 4 NOI that was submitted. That's been revised since in the
 5 NOI dated September 1, 2011, and addressed specifically,
 6 again, in the groundwater discharge permit application.

7 So we just -- in sum, the requirements of the
 8 Division of Oil, Gas and Mining, with respect to this
 9 issue and the Notice of Intent, are much more narrowly
 10 focused than those of the Division of Water Quality. The
 11 Division has appropriately conditioned the issuance of
 12 the NOI on the Division of Water Quality's determination
 13 as to whether -- analysis of the application and
 14 determination whether they should issue a permit,
 15 groundwater discharge permit, or whether one is not even
 16 required.

17 So the function of the Division of Water Quality
 18 is, of course, much more detailed. They have many more
 19 detailed requirements. And in terms of the integrity of
 20 the process, that's been detailed in great length in
 21 three sections of the groundwater discharge permit. And
 22 it's really something that's up to the Division of Water
 23 Quality now. It's something in their expertise.

24 The narrow focus of the Division of Oil, Gas and
 25 Mining Notice of Intent is to satisfy those two

Page 41

11 (Pages 38 to 41)

A6016FC**HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012**

1 requirements, depth to groundwater, which was clearly
2 identified, and secondly, provide an environmental
3 assessment of groundwater resources. And that was
4 provided. Those requirements are very simple, very
5 straightforward. And the applicant has met those
6 requirements. And the Division determined correctly that
7 those requirements were met.

8 So once again, we encourage the Division to
9 approve the Notice of Intent as conditioned on
10 October 20th and not wait until the Division of Water
11 Quality issues or decides not to issue its permit.

12 The overall objectives of the two programs are
13 very different. Division of Water Quality focuses
14 specifically on water quality and on the integrity of the
15 process. The Division is more concerned about providing
16 a general description of groundwater resources and
17 addressing reclamation.

18 I don't know. We may want -- Fran, since we've
19 got some extra time, do you want to address the issues
20 regarding the integrity of the bentonite amended soil
21 layer and the EcoShale patent to design?

22 MR. DUBUC: Before we do that, I would like to
23 object to the introduction of this document at this time.
24 This was -- we stipulated to this as being an informal
25 hearing.

Page 42

1 protest letter. And I think that, again, if you are
2 going to consider this and accept this document, then you
3 need to provide Living Rivers with an opportunity to
4 respond.

5 HEARING OFFICER BAZA: Well, I think there are
6 some concerns that I have about seeing the document for
7 the first time today.

8 And I'm assuming you're seeing it for the first
9 time as well.

10 MR. DUBUC: Absolutely.

11 HEARING OFFICER BAZA: So I'm not really opposed
12 to having it included as part of this consideration, but
13 it would probably be wise to have you take a look at it
14 and then give me some kind of input, maybe in the form of
15 a, you know, response letter to this.

16 MR. DUBUC: If we could have just a reasonable
17 time to respond to this.

18 MS. DRAGOO: We'll withdraw it. That's fine.
19 We'll withdraw it. We made the statement for the record.
20 And the record, it's all in.

21 MR. DUBUC: The cat's kind of out of the bag.
22 Mr. Baza was reviewing this as you were talking. I mean,
23 it was inappropriate to introduce this. But the cat is
24 out of the bag. And I feel at this point, Living Rivers
25 should have an opportunity to respond.

Page 44

1 MS. DRAGOO: Right.

2 MR. DUBUC: There was no provision for submittal
3 of written testimony.

4 And Mr. Baza, if you are going to consider this,
5 then I feel that the only adequate measure to counter
6 this is to give us an opportunity to respond to this
7 document. Otherwise, you should exclude this from the
8 record and not consider this in your deliberations.

9 MS. DRAGOO: I'd suggest that Mr. Lips just read
10 his statement into the record. And if it's a problem, I
11 can simply read mine into the record, which I just did.
12 The only thing this does is summarizes the response of
13 Red Leaf Resources to the specific four issues that were
14 raised by Director Baza and were also raised in the
15 letter of Living Rivers. So all this does is simply
16 assemble the information that's already in the record.
17 It simply copies, for the convenience of the hearing
18 officer, the references in the Notice of Intent and in
19 the groundwater permit. There's nothing new in that
20 letter.

21 MR. DUBUC: But again, this was prepared by
22 legal counsel, submitted by legal counsel. Are you
23 saying that it's totally devoid of any legal opinion of
24 any sort? What Mr. Lips did was provide technical
25 testimony clarifying the assertions that we made in our

Page 43

1 MS. DRAGOO: Well, we don't feel it's
2 inappropriate to introduce it. It's simply a summary of
3 what's already in the record. You presented your
4 argument.

5 HEARING OFFICER BAZA: Denise, would you have a
6 problem, though, if Mr. Dubuc has a chance to look at
7 this and then provide me with some kind of written
8 response to what's in here?

9 MS. DRAGOO: Perhaps a short period of time.

10 MR. DUBUC: The regulation provides sufficient
11 framework for responses, generally ten business days or
12 some sort.

13 MS. DRAGOO: Yeah, that's really basically our
14 summary of what's in the record. We'll withdraw it.

15 MR. DUBUC: Again, I think it's too late. The
16 cat's out of the bag.

17 HEARING OFFICER BAZA: Give me a minute.

18 MS. DRAGOO: All right.

19 HEARING OFFICER BAZA: Tell you what we're going
20 to do: Just in the interest of time here, I'm going to
21 let Emily take a look at this. And before you withdraw
22 it, before you say that it's not -- it shouldn't be
23 introduced, or whatever, I'd like to hear from the
24 Division and allow the Division to take their 20 minutes,
25 unless --

Page 45

12 (Pages 42 to 45)

A6016FC

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

<p>1 MS. DRAGOO: Sure, that's fine.</p> <p>2 HEARING OFFICER BAZA: -- that would be a</p> <p>3 problem here.</p> <p>4 MS. RUSSELL: I'm counting that Red Leaf has</p> <p>5 taken about 15 minutes of their time, a little less than</p> <p>6 15 minutes of their time. If you want to allow them time</p> <p>7 after that to continue their allotted time, that's fine.</p> <p>8 MS. DRAGOO: Sure. We'll reserve our -- some</p> <p>9 rebuttal.</p> <p>10 HEARING OFFICER BAZA: Rebuttal to what? You</p> <p>11 said you wanted to have Fran talk about something. Do</p> <p>12 you want to take a minute to do that? I mean, because</p> <p>13 obviously, Living Rivers had Elliott talk. And I don't</p> <p>14 know if Fran has some additional material.</p> <p>15 MS. DRAGOO: Right. And Fran, I guess I would</p> <p>16 like you to address a couple of issues. One is the</p> <p>17 question of the isolation of groundwater and the question</p> <p>18 about the additional water that was found and that was</p> <p>19 reported in the groundwater discharge application. And</p> <p>20 that's basically addressed in both the NOI and in</p> <p>21 Appendix S regarding that B group (phonetic) and</p> <p>22 encountering of the water at that time. Do you want to</p> <p>23 go through that?</p> <p>24 MR. AMENDOLA: Let me make a recommendation</p> <p>25 because Bob really represents the hydrologic component of</p>	<p>1 the drilling encountered water at depths, or any rock</p> <p>2 types, that suggested that they had sufficient</p> <p>3 permeability to host or contain groundwater.</p> <p>4 The recharge area for all of these aquifers has</p> <p>5 been -- any aquifers that might have been there have been</p> <p>6 long eroded away. We're at the edge, virtually, of</p> <p>7 the east --</p> <p>8 THE REPORTER: I'm sorry. "At the edge of"?</p> <p>9 Your voice is dropping again.</p> <p>10 MR. BAYER: -- the edge of the east Tavaputs,</p> <p>11 T-A-V-A-P-U-T-S, Plateau, with the south edge -- the</p> <p>12 exposures of these shallow formations through much of</p> <p>13 the -- all of Parachute Creek and the Douglas Creek</p> <p>14 aquifer that could serve as significant recharge area</p> <p>15 have long been eroded away. There is a big canyon down</p> <p>16 there to the south. So it's not surprising that there's</p> <p>17 no water encountered.</p> <p>18 Is that what you wanted to talk about, Denise?</p> <p>19 MS. DRAGOO: Yes. That's correct. I think</p> <p>20 that's good.</p> <p>21 HEARING OFFICER BAZA: Denise, was there</p> <p>22 anything else you wanted to cover?</p> <p>23 MS. DRAGOO: I think that's probably it. Maybe</p> <p>24 we could go on to the Division's presentation.</p> <p>25 HEARING OFFICER BAZA: All right, Steve. We'll</p>
<p>Page 46</p> <p>1 the application and is the primary author of the</p> <p>2 groundwater discharge permit. I think Bob should address</p> <p>3 the issue of groundwater and the presence or absence of</p> <p>4 any of the isolation.</p> <p>5 MS. DRAGOO: Okay.</p> <p>6 MR. BAYER: The RL-1 drill hole -- excuse me.</p> <p>7 Did the RL-1 -- I'm sorry. I'm easily distracted. Has</p> <p>8 to do with hair loss.</p> <p>9 The RL-1 drill hole did, indeed, encounter some</p> <p>10 waters in the very top of the bedrock in the hole. It is</p> <p>11 drilled in a draw or a small drainage. And given the</p> <p>12 time of year it was drilled, the observations the Norwest</p> <p>13 geologist reported to me were that it was fracture-hosted</p> <p>14 water, it did not persist to depth, and the fracturing</p> <p>15 was related to weathering and erosion. It certainly does</p> <p>16 not fit the description of an aquifer that has been</p> <p>17 described elsewhere in the Basin. And this is quite</p> <p>18 common in the areas like this, where you can get what we</p> <p>19 call compartmentalized groundwater --</p> <p>20 THE REPORTER: I'm sorry, "departmentalized"?</p> <p>21 Could you speak up a little bit? I couldn't hear you</p> <p>22 after "whatever we call departmentalized."</p> <p>23 MR. BAYER: Okay. It's quite common to have a</p> <p>24 little compartmentalized groundwater in a shallow</p> <p>25 subsurface like this, or it can occur. However, none of</p>	<p>1 turn the time over to you now.</p> <p>2 STATEMENTS BY THE DIVISION</p> <p>3 MR. ALDER: We thought -- just briefly, I would</p> <p>4 just preface our response to say that we thought it was</p> <p>5 appropriate to provide an opportunity for public comment</p> <p>6 on these issues and to have a hearing to address them.</p> <p>7 Although they are groundwater issues, and groundwater</p> <p>8 issues are dealt with under the permit that has been</p> <p>9 applied for with the Division of Water Quality, there is,</p> <p>10 of course, an obligation under our statute and rules to</p> <p>11 investigate and determine the compatibility of the NOI</p> <p>12 application with requirements to protect groundwater and</p> <p>13 to indicate what mitigation would be taken if there is a</p> <p>14 potential ...</p> <p>15 The requirements are pretty brief. The</p> <p>16 requirements at DWQ are much more extensive and,</p> <p>17 generally, we believe they are the experts in that area.</p> <p>18 But I would ask just briefly the Division to address the</p> <p>19 concerns that have been raised by Red Leaf.</p> <p>20 And you can go first, if you'd like, Leslie, and</p> <p>21 introduce yourself.</p> <p>22 MS. HEPPLER: I'm Leslie Heppler. And per</p> <p>23 direction by John at the beginning, we're limiting</p> <p>24 ourselves to November 18, 2011, by Western Resource</p> <p>25 Advocates -- the letter.</p>
<p>Page 47</p>	<p>Page 48</p>

13 (Pages 46 to 49)

A6016FC

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

1 And one of the areas that was brought up was
2 R647-4-106, "Operation Plan," which states, "The operator
3 shall provide a narrative description, referencing maps
4 or drawings, as necessary, of the proposed operations,"
5 including Item No. 8, "Depth to groundwater, extent of
6 overburden material, and geologic setting."
7 This information was provided in the NOI in the
8 form of a map, a geologic map, that I was able to double
9 check with an Open-File report that was published by UGS.
10 The report number was 549DM. And the geologic data was
11 correct.

12 There was also a typical cross section that was
13 provided for the area that referenced the overburden
14 material. And there was narrative in the plan that
15 described the depth to groundwater per our rule. I
16 followed -- I followed -- I followed our rules as
17 written. I have no further comment.

18 MR. MUNSON: My turn?

19 MR. ALDER: Yes.

20 MR. MUNSON: I'm Tom Munson. I'm the surface
21 water hydrologist for the Division.

22 My requirements in regards to the rules are
23 found under R647-4-105, "Maps, Drawings, and
24 Photographs," 1.12. And it states, "Perennial streams,
25 springs, and other bodies of water, roads, buildings,

Page 50

1 landing strips, electrical transmission lines, water
2 wells, oil and gas pipelines, existing wells, bore holes,
3 and other existing surface or subsurface facilities
4 within 500 feet of the proposed mining operations."

5 They identified those in relationship to their
6 comment that states that the NOI reports there are no
7 USGS mapped springs issuing from either of these
8 formations in or near the parcels. They say, "There's
9 insufficient evidence upon which to conclude there are no
10 aquifers that will be impacted by the mine. Not all
11 springs are mapped by the USGS. And for this and other
12 reasons, reference to such maps is not a standard for
13 determining the absence -- presence or absence of
14 groundwater."

15 Our rules don't require, do not identify a
16 specific methodology or -- a specific methodology for
17 identifying springs. And there is no standard, per se,
18 for doing that. The method that they chose is acceptable
19 to the Division. That, and based on any of their
20 observations of the field, would have been recorded. In
21 conversations with them, they said that. And there was
22 no evidence of any springs or seeps within 500 feet of
23 the property.

24 So from my perspective, they address that
25 question, meeting the requirements of our rules.

Page 51

1 HEARING OFFICER BAZA: Okay.

2 MR. ALDER: And with regard to the rule that
3 requires impact assessment and discussion of mitigation,
4 did they satisfy those requirements?

5 MR. MUNSON: Yeah. R647-4-109, "Impact
6 Assessment. The operator shall provide a general
7 narrative description identifying potential surface and
8 subsurface impacts." And specifically No. 1 "Impacts to
9 the Surface and Groundwater Systems." They have provided
10 a very detailed -- not a general -- narrative in regards
11 to surface water impacts, and provided quite detailed
12 surface water designs using definitely industry standards
13 in regards to that information and have met the
14 requirements of that rule, from our perspective.

15 MR. ALDER: Would there be a storm water --

16 MR. MUNSON: -- storm water plan, a designed
17 storm water plan using all the appropriate -- and
18 actually, we do not have specific storm events, designed
19 storm events. So they just used what is considered a
20 standard design event, and actually went above and beyond
21 what we would have required for that design. And very
22 appropriately designed a system which will work, I
23 thought, very well based on my technical expertise of 29
24 years as a surface water hydrologist working on hundreds
25 of mines.

Page 52

1 MR. ALDER: I didn't mean to cut you off. Thank
2 you. We didn't get your resume in here.

3 MR. MUNSON: No, I can give you one, if you'd
4 like.

5 MR. ALDER: I believe the Director is familiar
6 with your expertise.

7 And Leslie, were there any -- did you see any
8 reason, did you concur that there was no potential for
9 groundwater impacts from the mines?

10 MS. HEPPLER: Yeah. Based on their design of
11 using a bentonite amended soil and also the natural
12 occurring geology, anywhere from five feet of a low
13 transmissivity shale that is naturally occurring all the
14 way up to the 500 feet that has been found at particular
15 locations, it's belt and suspenders. There is double
16 protection there.

17 MR. ALDER: So you felt that rule was satisfying
18 the --

19 MS. HEPPLER: Yes, that is correct.

20 MR. ALDER: That's all we have.

21 Unless you have more, Paul, that you want --

22 MR. BAKER: No.

23 DISCUSSION LED BY HEARING OFFICER BAZA

24 HEARING OFFICER BAZA: I have just a set of
25 inquiries that I'd like to make. And I'm probably going

Page 53

14 (Pages 50 to 53)

1 to start with the Division and work backwards, then, to
2 Living Rivers.

3 Just for everybody's knowledge, Steve said that
4 I was familiar with Leslie and Tom's expertise and
5 background. I think through various things that are
6 happening with the Division, I'm also familiar with
7 Mr. Bayer's and Mr. Lips' background and expertise as
8 well. So I'm not unfamiliar with any of those things.

9 I guess my first question would go to you,
10 Mr. Alder, maybe with the help of Division staff.

11 Living Rivers, I mean, one of the first
12 statements out of Mr. Dubuc's mouth was that the Division
13 made a mistake. So I'd kind of like to hone in on what
14 the rulings say or the statute says about the Division's
15 responsibility relative to a large mining NOI. What are
16 we supposed to do with it? Does it specify how we are
17 supposed to analyze that and what our responsibility is
18 to the public and the state for that?

19 MR. ALDER: Well, I think the answer to that
20 question is that the rules that address a large mine NOI
21 cover everything from five acres and larger to Kennecott
22 copper mine. And the regulations themselves are quite
23 general and not very specific. And so it requires the
24 expertise and experience of the Division's hydrologist
25 and geologist, such as have testified, to kind of adapt

Page 54

1 the rules to the circumstances. And that's not to say
2 that they should lessen the analysis, it's just that it's
3 very general. It's under Rule 647-4-109 that requires
4 that the operator -- so the application and the NOI
5 should "provide a general narrative description
6 identifying the potential surface and or subsurface
7 impacts, including impacts to surface groundwater
8 systems, potential impacts to species" -- that's not an
9 issue here -- "and impacts to the soil resources." That
10 apparently has not been raised in the objections. And
11 then finally it says at the end, "Actions which are
12 proposed to mitigate any of the above-referenced
13 impacts."

14 So it is really pretty basic, just, you know,
15 what are the impacts and what's been done to affect them.
16 There is no restriction that says you have to have a
17 certain number of monitoring wells. And so it's on the
18 operator and the operator's understanding that these
19 mines are going to be certainly subject to a great deal
20 of scrutiny to make sure that they provide a good, solid
21 application that addresses those issues. And the
22 Division also looks at them to make sure that they do, to
23 their professional expertise. And that's really it.

24 In addition, the application requires additional
25 information about depth to groundwater, the size of the

Page 55

1 mine, the overburden, the type of reclamation -- a lot of
2 things that aren't at issue here. But with regard to
3 groundwater, again, in the application, it's pretty
4 limited. But we're limited to the rules, if that's your
5 question, and whether or not it complies. And the rules
6 are not very specific.

7 HEARING OFFICER BAZA: Well, that last statement
8 of yours was probably very telling, that the rules are
9 not very specific. And I'm glad that you brought up the
10 R647-4-109. It's been raised already.

11 How does -- maybe this is a question for
12 Mr. Baker. How does the staff use that impact
13 assessment? What conclusions are expected to be drawn
14 from that?

15 MR. BAKER: Well, we would look at the impact
16 assessment and determine what mitigation needs to be
17 done, as it says in the rules; the degree of impact that
18 there might be and how that would affect the environment;
19 and whether mitigation is required and what degree of
20 mitigation.

21 HEARING OFFICER BAZA: I'm putting you on the
22 spot here. Where in the rules does it talk about
23 mitigation?

24 MR. BAKER: It's in 109.

25 HEARING OFFICER BAZA: 109?

Page 56

1 MR. BAKER: 109.5.

2 HEARING OFFICER BAZA: So Part 5. I think it
3 says, "Actions which are proposed to mitigate any of the
4 above-referenced impacts."

5 MR. BAKER: Yes.

6 HEARING OFFICER BAZA: Okay. So you would make
7 an analysis of those impacts. You'd identify potential
8 mitigations. And does that become inclusive, then, as
9 part of the tentative approval?

10 MR. BAKER: That information should be included
11 in the NOI, whatever mitigation plans are required.

12 HEARING OFFICER BAZA: So through some kind of
13 iterative process, you are going back and forth to the
14 operator, and you're saying, "This is what's appropriate
15 for mitigation. You should include it in your NOI."

16 MR. BAKER: Yes, that's right.

17 HEARING OFFICER BAZA: Okay. This is another
18 question for the Division. And this might be a hard one
19 to answer, so think about this for a minute.

20 So how much information is adequate? Whether it
21 refers to groundwater resources or the bentonite amended
22 soil or anything like that. I mean, we're all
23 scientists -- or at least most of us are scientists. And
24 I'm sure we would like to get as much information as
25 possible.

Page 57

15 (Pages 54 to 57)

A6016FC

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

1 But when do you reach a point as a Division
2 staff member and say, "This is good enough. We've got
3 enough information to make a decision"?
4 MR. BAKER: I think that has to be something
5 that the staff member judges based on their professional
6 experience. And I don't know how to answer it any better
7 than that. The people that we have are highly educated
8 and experienced, and they can make those judgments.
9 HEARING OFFICER BAZA: And you are talking about
10 yourself and Tom and Leslie?
11 MR. BAKER: Well, me as a biologist. But Tom
12 and Leslie as hydrologist and geologist, yes.
13 HEARING OFFICER BAZA: Sure. Okay. So it is
14 somewhat of a judgment call, but you use your best
15 professional expertise to make that judgment call?
16 MR. BAKER: Yes, absolutely.
17 HEARING OFFICER BAZA: Okay. Let me turn to Red
18 Leaf Resources now. Like I said, I'm going in reverse
19 order.
20 I think, Denise, one of the things you said was
21 that water resources are defined by usable water.
22 MS. DRAGOO: "Aquifer," the term "aquifer,"
23 right.
24 HEARING OFFICER BAZA: Oh, okay. Can you
25 clarify that for me a little bit?

Page 58

1 MS. DRAGOO: Yes. Well, throughout the protest
2 of Living Rivers, they continue to assert that certain,
3 for instance, porous units were aquifers. And that's not
4 the case. An aquifer is defined under the Department of
5 Environmental Quality rules as, "A geologic formation
6 that contains sufficient saturated permeable material to
7 yield usable quantities of water to wells and springs."
8 That's R317-6-1.1. And that's the definition that was
9 relied on by Red Leaf Resources in preparing its NOI and
10 relied upon by the Division in determining that there
11 were basically no water resources, groundwater resources
12 affected.
13 HEARING OFFICER BAZA: Okay. So I'm not wanting
14 to put words in your mouth. But would it be Red Leaf's
15 opinion that because they couldn't define or they
16 couldn't identify usable water, that the information
17 included in the NOI was good enough?
18 MS. DRAGOO: Yes, exactly.
19 HEARING OFFICER BAZA: Okay.
20 MS. DRAGOO: There was adequate information.
21 For instance, the six core holes were drilled. They
22 found a little bit of water, but not sufficient to be
23 usable. And so it didn't meet the definition of an
24 aquifer.
25 HEARING OFFICER BAZA: Okay.

Page 59

1 MR. BAYER: Can I add? Since the groundwater
2 application was brought up and the water encountered in
3 Hole RL-1 was also brought up, I neglected to say before
4 that, that water stopped flowing shortly before the hole
5 was completed. And no more water was encountered. So
6 it, indeed, was compartmentalized from the source of
7 shallow groundwater. Certainly not usable, except for
8 the mice, maybe, that ran by at night.
9 MR. ALDER: From the definition, "aquifer" is
10 not a term used in the general rules.
11 HEARING OFFICER BAZA: I realize that. It talks
12 about "groundwater resources," correct.
13 Denise, you've referenced the groundwater permit
14 information -- application and permit information and
15 analysis being done by DWQ.
16 Since the Division issued its October 20
17 tentative decision, in Red Leaf's mind, how does that DWQ
18 analysis and decision making integrate with what the
19 Division of Oil, Gas and Mining must do?
20 MS. DRAGOO: Right. This goes back to the
21 October 20th tentative decision. And basically, there
22 the Division simply required that the permit be submitted
23 30 days prior to the commencement of operations. So it's
24 clear that the Division is relying on the Division of
25 Water Quality to make the determination as to whether or

Page 60

1 not, you know, the groundwater discharge permit is
2 required, the type of permit, whether it's going to be
3 permit by rule, a site specific permit, or maybe no
4 permit at all. So the Division of Oil, Gas and Mining
5 conditioned its tentative approval October 20th on,
6 really, the Division of Water Resources -- or Water
7 Quality in making that determination.
8 HEARING OFFICER BAZA: And you also indicated
9 that -- I think one of your comments was that DOGM should
10 not wait on a DWQ decision for final approval of the NOI.
11 MS. DRAGOO: Right.
12 HEARING OFFICER BAZA: And that's based on the
13 fact that the approval of the Division would then be
14 conditioned on whatever decision DWQ has to make?
15 MS. DRAGOO: Right. That's correct. So, for
16 instance, the Division of Oil, Gas and Mining, there's a
17 whole series of federal, state, and local permits that
18 have to be obtained. But the NOI can go forward before,
19 for instance, a building permit is issued by the local
20 zoning authority, or whatever. The fact that the
21 Division's rules specifically provide that -- you know,
22 just because you obtain a Notice of Intent, that doesn't
23 mean that it obviates the need to comply with other
24 Department of Environment Quality rules or permits,
25 conditions, that type of thing.

Page 61

16 (Pages 58 to 61)

1 So obviously, the operator has the duty to go
2 ahead and comply with all those requirements. And so we
3 would urge that the NOI be issued, subject to that -- to
4 the determination by the Division of Water Quality
5 whether or not a permit is required and the type of
6 permit.

7 HEARING OFFICER BAZA: Okay. I'm going to
8 transition now to Living Rivers. Yeah, we've got plenty
9 of time.

10 Mr. Dubuc, you had a statement, I believe, when
11 you started out, that Division of Water Quality and the
12 Division of Oil, Gas and Mining are somewhat separate
13 agencies of state government with somewhat separate
14 responsibilities?

15 MR. DUBUC: Yes, sir.

16 HEARING OFFICER BAZA: Would that indicate to
17 you that we shouldn't be talking to each other?

18 MR. DUBUC: Oh, no. If that's the impression I
19 gave, I certainly didn't mean to give that. I think
20 that's one of the difficulties that we have seen in the
21 past and will continue to see, is how do those two
22 agencies interact with each other?

23 We recognize that there are limited resources
24 and areas of expertise in each of those agencies. But a
25 great deal of what the Division of Water Quality does,

Page 62

1 for instance, in the area of groundwater, is really
2 needed to inform the Division of Oil, Gas and Mining --
3 and the impacts to groundwater. And those impacts are
4 required -- the assessment of those impacts are required
5 by your regulations. And I am hard-pressed to say how
6 your Division can make a decision in a vacuum.

7 If you have a Division of Water Quality over
8 here saying, "We don't have enough information. We need
9 more. We haven't made up our mind what kind of permit,
10 if we're going to need a permit," I'm hard pressed to see
11 how your agency, four months in advance of today, could
12 have said, "This is fine. This meets our requirements."

13 Again, we would like to meet with you at some
14 point outside of this forum to discuss the regulation of
15 these new extraction processes. But it's almost like you
16 need to work with each other in some sort of tandem, that
17 the Division of Oil, Gas and Mining can reach a point in
18 its deliberative process, and it then must turn to its
19 sister agency and their expertise to inform it, to fill
20 in the gap of what your agency is not able to derive in
21 terms of information. And until that process is
22 complete, I think that a final decision by your agency is
23 premature.

24 And that's what I was trying to say is we
25 recognize that there are different agencies, but there is

Page 63

1 a great deal of overlap between them. And there's a gray
2 area.

3 HEARING OFFICER BAZA: So is it your assertion
4 as part of this proceeding that we shouldn't make a
5 decision until Water Quality finalizes theirs?

6 MR. DUBUC: Absolutely. I think that is
7 absolutely premature. Even to make it conditioned, how
8 do you give final approval conditioned on something that
9 could totally change the game? There is a basic
10 assumption in the NOI that a groundwater permit would not
11 be required. It states that. We've talked to the
12 Division of Water Quality. They say the groundwater
13 permit is not going to be required.

14 There's a very elaborate process that goes into
15 a groundwater application, 195 pages worth of process,
16 and it's still not enough. None of this was in the NOI.
17 None of this was considered by your Division before it
18 made a tentative approval. I don't see how that can be
19 an informed decision.

20 Yes, the permitting process has to go through
21 its normal course of back and forth between agencies.
22 And only then is it appropriate for your agency to make a
23 final decision.

24 HEARING OFFICER BAZA: Mr. Baker, is the water
25 quality application included as part of the Division's

Page 64

1 records on the NOI now?

2 MR. BAKER: It is included as Appendix S, as has
3 been discussed earlier.

4 But I think there are two separate processes
5 here. The Division has its own processes and has its own
6 rules. And we have to make a determination whether we
7 believe the NOI meets the requirements of the R647 rules.
8 And that's where we issued our conditional approval --
9 our tentative approval.

10 HEARING OFFICER BAZA: Now in the course of your
11 analysis of the NOI, between the time it was submitted in
12 April and when you issued the tentative approval in
13 October, that six months, I mean, does the staff have
14 conversations with the folks at Water Quality? Do they
15 interact?

16 MR. BAKER: Yeah, they do. You know, I'm not
17 sure exactly how much they did in this particular case.
18 I can't say.

19 HEARING OFFICER BAZA: Tom or Leslie, can you
20 answer that, how much interaction you had?

21 MR. MUNSON: Well, I've had conversations with
22 them, you know, off and on about a number of things,
23 specifically about Red Leaf. And I would -- from my
24 perspective, I'm surface water. So I didn't really have
25 as much interaction regarding that. But Leslie had.

Page 65

17 (Pages 62 to 65)

1 MS. HEPLER: Yeah, I probably talked to them
2 two or three times by the phone in conversations that
3 lasted anywhere from a half an hour to an hour.
4 HEARING OFFICER BAZA: If they presented a
5 concern about the groundwater permitting, or something
6 like that, would that tailor your decision on the NOI --
7 and did it?
8 MS. HEPLER: Not on our approval on the NOI.
9 We've met -- what has been submitted to us has met our
10 rules. But in this same frame, just because we give them
11 approval for this doesn't mean they can speed down the
12 highway. They have to meet all other regulations. So
13 you can't say, "You can't get your driver's license
14 until" -- you know, you can't do those inferences. You
15 can't hold one up based on the other.
16 MR. DUBUC: May I respond?
17 HEARING OFFICER BAZA: Yeah. Let me hear what
18 you have to say.
19 MR. DUBUC: Again, a basic premise of the NOI
20 that your agency approved was that a groundwater permit
21 application would not be required by the Division of
22 Water of Quality. And it states as much, that there will
23 be no groundwater impacts.
24 The Division of Water Quality did not notify
25 your Division that a groundwater application would be

Page 66

1 required until approximately two weeks before you made a
2 decision. So it's impossible for any of that information
3 to have been considered in your deliberations. And
4 again, this groundwater application, this 195-page
5 document, was not submitted until after two months after
6 that tentative approval. So how the information in here
7 could have been considered by your Division is hard to
8 see.
9 MS. DRAGOO: Could we respond to that --
10 HEARING OFFICER BAZA: Let's hear.
11 MS. DRAGOO: -- as well?
12 Actually, Bob Bayer wrote that letter.
13 MR. BAYER: Let's talk about where this whole
14 business of a groundwater permit is not required to get
15 started. It began in a conversation at a pre-design
16 conference, which Leslie Heppler was in and several folks
17 from DEQ were present as well.
18 I made the argument to the Division of Water
19 Quality -- rightfully or wrongfully, it was a technical
20 argument -- that basically given the containment here,
21 we're talking about a fully-contained surface facility,
22 that on a strict reading of the rules, the DWQ rules
23 might not require a permit at all. That got some nods
24 and kind of, "Well, that's interesting."
25 So the Division never once opined -- the

Page 67

1 Division of Water Quality never once rendered an opinion
2 that that was true or not. However, we contended on
3 behalf of Red Leaf that for certain reasons that are very
4 clear in the rules and the letter that made the -- which
5 is in the public record over at DWQ and is appended to --
6 it's an appendix in the NOI -- said simply -- we describe
7 the geology, we describe the groundwater setting, et
8 cetera. It says simply because of the definitions within
9 the groundwater rules, we don't believe this facility has
10 the potential to impact groundwater; therefore, no, we
11 don't believe a permit is needed. That was the strategy
12 that was proposed because -- and we still contend that
13 the way that the groundwater rules are written, that
14 that's a reasonable argument.
15 The Division of Water Quality rejected that
16 argument in a letter and said, "No, you've got to have --
17 you've got to submit a permit application." So then we
18 did that.
19 The document that we provided complies with the
20 rules as best we can. And it's true that the Division of
21 Water Quality has asked some additional questions, all of
22 which will be addressed, will be addressed appropriately.
23 There are some very experienced senior
24 scientists that have done the modeling work, et cetera,
25 that's been referenced. And Red Leaf is very confident

Page 68

1 that they responded to all of those questions that were
2 mentioned by Mr. Lips in his testimony, that they have
3 recently sent out in their letter.
4 I'd also point out that the groundwater
5 discharge permit is only part of the DWQ permitting
6 process. They also have to -- if they're going to
7 regulate this as a facility that might discharge to
8 groundwater, they have to issue what's called a
9 "construction permit." That's totally within their
10 regulatory purview. And they will have to do that. And
11 they will have review plans and designs sufficient, on
12 top of whatever is in the groundwater discharge permit,
13 as necessary, to issue that construction permit. That is
14 clearly in their purview for regulating any kind of waste
15 water treatment facility or anything else. That's where
16 that authority comes from.
17 I just remind you, Director Baza, as a former
18 Board member, that the Utah Mine Reclamation Act
19 specifically states -- and I can't quote it -- something
20 like, you know, except for matters of what related to
21 water quality, the Division has authority over basically
22 protecting the environment or whatever. However, the
23 authority regarding water quality resides with the
24 Department of Environmental Quality.
25 Since the groundwater rules were written, I

Page 69

18 (Pages 66 to 69)

1 commented on them heavily on behalf of the Utah Mining
2 Association almost 25 years ago. That has been a
3 consistent approach. And the relationship that's been
4 described here today by the Division staff has been the
5 same relationship, the same process that has worked very
6 effectively for the last 25 years.

7 HEARING OFFICER BAZA: Let me turn a little bit
8 to the groundwater, or the hydrologic science. I'm
9 afraid that I know just enough about that to be
10 dangerous. But I have some questions. And maybe this is
11 a combination of Mr. Lips and Mr. Bayer who can help
12 answer this.

13 I think there's been some comment about
14 compartmentalized groundwater and perched aquifers. What
15 I know of that is it would almost seem to me that a
16 perched aquifer, by definition, is somewhat isolated.

17 What's your thought on that, Mr. Lips?

18 MR. LIPS: I think that's an accurate
19 generalization or a characterization that perched
20 aquifers or, as Mr. Bayer described, these
21 compartmentalized occurrences of groundwater would be
22 differentiated from those that have a larger aerial
23 extent that may extend over several miles or tens of
24 miles. So they're typically smaller in aerial extent and
25 thickness.

Page 70

1 HEARING OFFICER BAZA: So maybe you could help
2 me understand a little bit. I mean, Red Leaf Resources
3 is a mining company that will have some surface impacts.
4 They are characterizing this as they will have limited
5 impact on the hydrologic groundwater resources of the
6 area.

7 What do you see as the potential damage? I
8 mean, if -- let's say that the contaminant, somehow --
9 hydrocarbon was to seep into one of these perched
10 aquifers. What are we talking about the magnitude of
11 that kind of impact? What ultimately could happen?

12 MR. LIPS: Well, I think the potential impact,
13 it's difficult to say unless you know how big or how
14 extensive that groundwater occurrence is, and
15 particularly, where that water would discharge to the
16 surface. And if there are contaminants that are
17 introduced into that groundwater system as a result of
18 this proposed operation, then the question becomes:
19 Where do those contaminants potentially go? Are there
20 small occurrences of discharge points from these
21 localized groundwater systems that are used by wildlife
22 or avian species? Do these groundwater systems connect
23 to surface flow? And what are the potential impacts to
24 downstream surface water systems? Those are the types of
25 questions that you can only begin to ask and attempt to

Page 71

1 answer when you know the basics of what resource is
2 there.

3 And I guess the fact that these are perched or
4 somehow isolated or discontinuous doesn't diminish their
5 importance, either, with regard to the R647 rules or from
6 a hydrologic standpoint. And, you know, quite frankly,
7 there's been a lot of discussion about what is or isn't
8 an aquifer. And the R647-4-109 impact assessment doesn't
9 reference "aquifer," it references "subsurface impacts."
10 And then it goes on to projected impacts to groundwater
11 systems. And that would include these compartmentalized
12 groundwater systems. That's how it was described. And
13 it would include small or perched or isolated aquifers.
14 Those are part of the groundwater system that requires
15 under R647-4-109 the Division -- "There shall be a
16 general narrative description identifying potential
17 impacts, subsurface impacts."

18 And so you know, I think that it's appropriate
19 to recognize that these are groundwater systems that have
20 the potential to be impacted by this operation. And
21 that's sort of the answer to your question.

22 HEARING OFFICER BAZA: Okay. You talked a fair
23 amount in technical specificity about seepage results
24 from the capsules, integrity of the BAS, things like
25 that. Are those things that are analyzed as part of the

Page 72

1 DWQ permit approval, or ...

2 MR. LIPS: They were submitted as part of the
3 permit application to DWQ in December. And that permit
4 application has been attached to and incorporated with
5 the Division NOI.

6 They are looking at that. They are considering
7 it. And, in fact, that was one of the comments that the
8 DWQ made to Red Leaf on February 12, 2012, was asking for
9 additional analysis specifically on that issue of seepage
10 and the modeling of seepage of precipitation into and
11 ultimately out of these containment capsules.

12 So it is an issue. I believe, based on the fact
13 that the information was submitted to DWQ and that
14 they've commented on it and asked for additional
15 information, I think it's safe to assume they are looking
16 at that.

17 MS. DRAGOO: Could we respond to that, Director
18 Baza?

19 HEARING OFFICER BAZA: Well, my next question is
20 for you. So let me hear what you have to say.

21 MS. DRAGOO: Okay. Fran, could you address the
22 quality assurance plan?

23 MR. AMENDOLA: My name is Fran Amendola.

24 As part of the application that was submitted to
25 groundwater quality, there's been a QA/QC plan that has

Page 73

19 (Pages 70 to 73)

1 been submitted with respect to the BAS layer and the
2 construction of that BAS layer. And basically what the
3 QA/QC plan does is outlines a procedure that will define
4 how the BAS will be constructed and to achieve the
5 permeability level that were -- we had in the design.
6 And that permeability is 10 to the minus 7. And that is
7 a particular piece of information that the Division of
8 Water Quality is very interested in. They will also be
9 involved with monitoring the performance of that QA/QC
10 plan to confirm that we can achieve that level of
11 containment in the capsules.

12 Couple other things I wanted to mention. We
13 talked about the HELP model and the penetration of
14 moisture. The HELP model was actually designed to look
15 at the cover of the capsules. And when we talk about
16 "cover," we need to be thinking about, about a foot of
17 soil, two feet of overburden, three feet of BAS, and
18 about 13 feet of insulation or gravel material before you
19 even get to the spent shale. And the HELP model really
20 does look at how moisture moves into that cover material.

21 And what we saw after modeling the area and the
22 capsules for a 30-year time period using conservative
23 parameters was that we saw .01-inch of moisture entering
24 the three feet of BAS. And there was some comment about
25 does that -- you know, we need to look at that over a

Page 74

1 longer time period. That has come up. We're going to
2 address that as part of the response to the Division of
3 Water Quality.

4 But realize that when we did the modeling, we
5 used very conservative parameters, we used high moisture
6 or precipitation values. And we still ended up with
7 0.01-inch penetration into the BAS. That doesn't even
8 get into the 13 feet of insulation that we have before we
9 reach the spent ore.

10 So we're looking at that very closely. We're
11 going to continue to look at it.

12 But even running the model for a long time, it
13 doesn't say that you'll get greater penetration because,
14 like weather, the model results will incorporate cyclical
15 events, wet periods, dry periods. So that front of
16 moisture will move. Sometimes it will recede, and
17 sometimes it will again move forward or lower into the
18 BAS -- or maybe not even reach the BAS.

19 So that issue that you raised is certainly
20 something that we're looking at. But I think the
21 integrity of the BAS is a very important aspect of the
22 project and it's supported by design. But it's, most
23 importantly, going to be supported by a QA/QC program
24 that's going to help confirm that we can achieve that
25 design.

Page 75

1 HEARING OFFICER BAZA: Did you have something
2 more to say to that?

3 MR. LIPS: Just a quick clarification and
4 comment.

5 That the HELP model run, that it was based on
6 the permeability of 1 times 10 to the minus 7 for the
7 BAS. And the numbers that I cited are from the HELP
8 model results of what penetrated through. So this is
9 looking at the bottom of the BAS layer. So your model
10 results did show that even under this best case scenario
11 of what you call conservative assumptions, there would be
12 sufficient seepage of precipitation water through the BAS
13 in significant quantities in terms of gallons per year.

14 MR. AMENDOLA: I'd like to verify your
15 numbers --

16 MR. LIPS: Oh, sure.

17 MR. AMENDOLA: -- from that. But you also
18 stated numbers that represented a non-revegetated
19 condition.

20 MR. LIPS: Right.

21 MR. AMENDOLA: And we have a very strict
22 commitment with the Division of Oil, Gas and Mining to
23 have revegetation performance standards. So the
24 likelihood of us having an exposed surface for an
25 extended time period, which that worst-case scenario you

Page 76

1 might be referring to is not a very probably case.

2 MR. LIPS: Understand.

3 HEARING OFFICER BAZA: And I don't want to get
4 into a tennis match between experts here.

5 MR. BAYER: It was getting fun.

6 HEARING OFFICER BAZA: I appreciate your
7 comments on both sides. I think they're valuable.

8 But I'm going to pose a question to you, Denise,
9 and maybe additionally to Paul and Steve.

10 But hypothetically, let's say we moved ahead
11 with a final approval on the NOI while Water Quality is
12 still finishing up their analysis of the groundwater
13 permit. And let's go further to hypothetically say that
14 something in their analysis suggests a change in mining
15 operation or design or something else.

16 How does that get addressed as a change to the
17 NOI and the Division's approval of that?

18 MS. DRAGOO: Well, in the event that that was
19 required, you could certainly modify the NOI. That
20 happens quite a bit. Conditions occur or circumstances
21 occur, and the NOI is -- there's a new condition.

22 In fact, Red Leaf Resources committed to the
23 Division to notifying them in the event that their
24 monitoring plan would change, or something to that effect
25 as a result of the NOI -- sorry, as a result of the --

Page 77

20 (Pages 74 to 77)

1 MR. ALDER: Could you speak up a little bit? I
2 can't hear.

3 MS. DRAGOO: Sure. I was just saying that Red
4 Leaf Resources has committed to getting back to the
5 Division in the event that the Division of Water Quality
6 requires additional monitoring, or something to that
7 effect. So they could simply modify the Notice of
8 Intent.

9 MR. ALDER: I hope Director Baza can hear now.

10 MS. DRAGOO: Right. But there's no need to stop
11 the process until all of the permits are in place. And
12 the Division is protected because the actual mining
13 cannot commence until the groundwater discharge permit is
14 issued or until the Division of Water Quality makes a
15 determination that one is not required.

16 HEARING OFFICER BAZA: Paul, Steve, is that how
17 the process usually works?

18 MR. BAKER: Yes, it is. If the Division of
19 Water Quality was to make some requirements that would
20 require a modification to the plan, then we would have
21 Red Leaf submit an amendment.

22 HEARING OFFICER BAZA: And that's all to be done
23 before mining operations commence, correct?

24 MR. BAKER: Before -- it depends on what aspect
25 of the operation it affected. Theoretically, they could

Page 78

1 begin, say, stripping topsoil, or something like that.
2 But anything that was affected by the requirement from
3 Water Quality would need to be delayed until that was
4 taken care of.

5 HEARING OFFICER BAZA: You had a comment, Mr.
6 Dubuc?

7 MR. DUBUC: Well, the problem with that,
8 Mr. Baza, is oftentimes those things are done behind the
9 scenes. Your Division noted earlier that several
10 informal conferences took place that are not part of the
11 record.

12 If changes are going to be made to the NOI, then
13 I think the public has a right to comment on those. And
14 oftentimes, those types of changes -- the process is not
15 set up to facilitate that. And that is the danger of
16 what you are suggesting.

17 MS. DRAGOO: That's not correct. It's a public
18 process. There's a C1-C2 Form that's submitted. That's
19 a public process amending the NOI. It's not done behind
20 closed doors. It's all part of the public record.
21 You'll find that in the Division's -- on their website.

22 MR. DUBUC: Not to have a tennis match, but
23 there's a difference between being on the record and
24 being subject to public notice and comment.

25 HEARING OFFICER BAZA: Steve?

Page 79

1 MR. ALDER: Yeah, well, there are two different
2 things. With regard to the question about whether an
3 amendment gives public notice, that depends on whether
4 it's defined as a "revision" or an "amendment." A
5 revision requires public notice and an amendment would
6 not.

7 But I was -- with regard to the other question
8 that you asked. Prior to the mining beginning, then
9 there would be that opportunity for making changes to the
10 permit and, depending whether it was an amendment or
11 revision, public notice.

12 But then after operations begin, I didn't want
13 you to have the impression that the only requirement is
14 that impact analysis. Because there are the requirements
15 in the rules for operational practices and reclamation
16 practices that have minimum standards which require
17 protection of the environment for deleterious materials
18 and protection of hydrology systems, if those are
19 observed. And hopefully, the monitoring is sufficient
20 enough that we become aware of that. Then the permit
21 would need to be modified to address those issues as well
22 because the mine has to comply with those practices.

23 HEARING OFFICER BAZA: We're approaching our two
24 hours here. I need to consult with counsel for just a
25 minute. So if you kind of hang loose for me while we

Page 80

1 step outside.

2 (A break was taken from 11:10 a.m. to 11:14 a.m.)

3 HEARING OFFICER BAZA: Okay. Thanks for
4 indulging me. First of all, let me ask the court
5 reporter. You don't need to include this on the record.

6 (A discussion was held off the record.)

7 HEARING OFFICER BAZA: In terms of the document
8 that was submitted by Denise today. Yes, I was looking
9 at it while you were talking. From what I could see of
10 the document, you basically narrated much of what was
11 said in the letter, anyway.

12 MS. DRAGOO: Exactly.

13 HEARING OFFICER BAZA: And the appendices that
14 you included appear to be documents that have already
15 been submitted as part of the NOI. There might be
16 something different in there.

17 But in due regard to the fact that we don't
18 want to spring anything on anybody and we don't want any
19 surprises at this, I would say why don't I give you,
20 Living Rivers, the seven days that the court reporter has
21 to give me a transcript to craft a response to what that
22 document is. And, you know, you don't have to belabor
23 it. Keep it brief. But at least give me an idea of what
24 you think is in there, whether you object to it or not.

25 MR. DUBUC: So a week from today, is that what

Page 81

21 (Pages 78 to 81)

A6016FC**HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012**

1 you are?
2 HEARING OFFICER BAZA: Yeah. Because Michelle
3 will try to get me the transcript within a week. And I
4 certainly will not finalize a decision on this before
5 then.
6 MS. DRAGOO: And we'd have an opportunity to
7 review that, as well, in the event it raises something
8 new?
9 HEARING OFFICER BAZA: I believe we should be
10 open with everybody. I mean, the things that are
11 presented here are public documents. They're part of the
12 Division's file. Your response will be part of the
13 Division's file. And you'll certainly be able to look at
14 that as well.
15 MR. DUBUC: I will serve that on you and on the
16 Division as well.
17 MS. DRAGOO: Thank you.
18 MR. DUBUC: Is electronic fine?
19 MS. DRAGOO: Sure. That would be fine.
20 MR. DUBUC: Steve, electronic, my response? Is
21 that fine?
22 MR. ALDER: Yeah, that's fine.
23 HEARING OFFICER BAZA: So, since we're pushing
24 the time limit here, I need to conclude this. And I'll
25 do this by saying that I'll take the evidence and the

Page 82

1 information presented here, your answers to my questions
2 under advisement. And within a reasonable amount of
3 time, I'm going to issue a final order on this,
4 determining whether the applicant met the relevant rules
5 and if a final Notice of Intention should be approved.
6 Again, that will not happen before the week that it takes
7 me to get the transcript and your response and all of
8 that. So all of that will be under consideration.
9 I'd like you to know that any party who
10 participated in the hearing today has an appeal right.
11 And they may appeal that final order within ten days of
12 the day I issue it, pursuant to Utah Administrative Code
13 R647-5-106 Part 9.
14 I want to thank everyone that was here today. I
15 think this has been constructive. It really has, for my
16 benefit. I appreciate the hard work the Division has put
17 in. I know that Red Leaf has put a lot of hard work into
18 this. I'm glad that we've had the opportunity to listen
19 to Living Rivers and your comments and your concerns.
20 And honestly, I am going to take all that under
21 consideration as part of a final decision on this. So I
22 appreciate it. I hope you've all found it somewhat
23 constructive.
24 But know that we're not going to belabor this.
25 I hope to issue the final decision not too long after all

Page 83

1 these documents come in to me.
2 MS. LEWIS: And just as a clerical note, the
3 appeal is at 106(17) not (9).
4 HEARING OFFICER BAZA: Thanks.
5 MS. NELSON: Director Baza, as the proponent for
6 Red Leaf and lead for Red Leaf here, would it be all
7 right if I made one final comment? I don't think it will
8 introduce anything new.
9 HEARING OFFICER BAZA: Okay. All right. Go
10 ahead.
11 MS. NELSON: First of all, I just want to thank
12 you, especially for organizing our conference today. I
13 do agree it is an important discourse and very
14 informative.
15 I also want to note that we do respect Living
16 Rivers' concerns. And I think with that regard, we have
17 pursued a very diligent effort to address concerns, and
18 that we will do so, also, in the DWQ process.
19 We do recognize that there are different
20 agencies from which we must seek permits. And in
21 response to the tentative approval, we did pursue that
22 process with DWQ and in concurrence with their letter
23 that they submitted to us, similar to how we'll pursue
24 all other processes. And it is our effort to be as
25 transparent for the State so that they can fully review

Page 84

1 the efficacy of our process in the field. And I think
2 that the documents that we've provided not only meet the
3 Division's rules, but also, I think, fulfilled that
4 obligation on the part of Red Leaf.
5 And the reason I wanted to mention that is
6 because Mr. Dubuc did dispute -- or did state that he
7 disputed Red Leaf's ability to make that claim. And so I
8 thought it was important that we also be able to say that
9 we are committed to that diligent effort and that we
10 ought to have a right to make that claim. Thank you.
11 HEARING OFFICER BAZA: Thank you.
12 Well, I appreciate everyone's attendance today
13 and also those people who are here to observe. We'll
14 move forward on this. My intent is to make progress. So
15 thank you.
16 MS. DRAGOO: Thank you.
17 (The matter concluded at 11:23 a.m.)
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Page 85

22 (Pages 82 to 85)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	<p>CERTIFICATE</p> <p>State of Utah)</p> <p>ss.</p> <p>County of Salt Lake)</p> <p>I, Michelle Mallonee, a Registered Professional Reporter and Notary Public in and for the State of Utah, do hereby certify:</p> <p>That the proceedings of said matter was reported by me in stenotype and thereafter transcribed into typewritten form;</p> <p>That the same constitutes a true and correct transcription of said proceedings so taken and transcribed;</p> <p>I further certify that I am not of kin or otherwise associated with any of the parties of said cause of action, and that I am not interested in the event thereof.</p> <p>WITNESS MY HAND at Salt Lake City, Utah, this 28th day of February, 2012.</p> <p>_____ Michelle Mallonee, RPR, CSR</p>	
	Page 86	

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

Page 1

61:19 buildings 15:11 50:25 business 18:9 45:11 67:14	cleared 14:9 clearly 29:23 36:20 38:19 40:10,13 42:1 69:14 clerk 84:2 climate 20:1 closed 79:20 closely 75:10 closest 21:4 coal 19:11,13 Code 7:20,21,25 8:5,19 8:20,22,25 9:1,3,11,12 9:15 83:12 colleague 12:25 collected 30:18 combination 70:11 come 19:10 21:4 75:1 84:1 comes 18:21 69:16 commence 1:7 6:9,24 7:23 78:13,23 commencement 60:23 comment 7:16,19 9:17 12:20 16:11 17:18 35:15 49:5 50:17 51:6 70:13 74:24 76:4 79:5 79:13,24 84:7 commented 70:1 73:14 comments 6:7,11,13,19 6:21 9:18,22 10:2,5,8 11:1 12:12 23:23 35:3 35:9,12,16 61:9 73:7 77:7 83:19 commitment 76:22 committed 77:22 78:4 85:9 Committee 16:14 common 47:18,23 communicated 16:2 companies 19:22 company 13:5 21:4,8,18 22:6 23:2,7 71:3 company's 20:21 21:3 23:5 compartmentalized 47:19,24 60:6 70:14,21 72:11 compatibility 49:11 complete 15:5 22:6 63:22 completed 27:12,19 60:5 completely 29:15 complies 56:5 68:19 comply 61:23 62:2 80:22 component 46:25 compression 32:17 33:14 compressive 33:8 compromise 34:3 compromised 32:10 34:13,15 computer 29:2 concept 31:6 concern 37:25 38:24 66:5 concerned 42:15 concerns 18:15 35:24 37:13 44:6 49:19 83:19 84:16,17 conclude 24:1 25:23 26:19 29:24 34:12 51:9 82:24 concluded 85:17	concludes 34:16 conclusion 25:18 26:8 37:6 conclusions 56:13 concur 53:8 concurrence 84:22 condition 35:2,5 76:19 77:21 conditional 6:7 16:4 65:8 conditioned 40:3,13 41:11 42:9 61:5,14 64:7,8 conditions 30:7 61:25 77:20 conduct 30:3 conducted 6:1 8:18 27:12 conference 5:7 67:16 84:12 conferences 79:10 confident 68:25 confirm 37:21 74:10 75:24 confirmed 37:5 40:2 confirming 36:22 confirms 27:4 36:24 37:18 38:4 conflict 8:24 confusing 39:1 connect 71:22 conservative 21:9 74:22 75:5 76:11 consider 43:4,8 44:2 consideration 40:19 44:12 83:8,21 considered 52:19 64:17 67:3,7 considering 73:6 considers 25:4 consistent 70:3 constitutes 86:9 constrain 11:3 constructed 30:16 31:14 31:23 74:4 constructing 14:14 15:8 30:22 construction 31:10 69:9 69:13 74:2 constructive 83:15,23 consult 80:24 consultants 32:7 contain 26:1,13 33:22 48:3 contained 22:23 29:16 30:22 containment 67:20 73:11 74:11 contains 22:22 24:7,21 25:1 31:15 39:18 59:6 contaminant 71:8 contaminants 71:16,19 contamination 40:16 contend 68:12 contended 68:2 contends 18:14 35:18 contests 39:13 continue 46:7 59:2 62:21 75:11 contradict 29:15 contradicted 27:1 contradicts 24:18	contrary 38:11,18 convenience 43:17 conversation 67:15 conversations 51:21 65:14,21 66:2 conversion 8:15 9:9 convert 8:7 11:24 converting 8:12 convince 17:21 cool 15:14 cooled 21:1 Coordinating 16:13 copies 43:17 copper 54:22 core 38:5,6,9 39:7 59:21 Corps 29:3 correct 11:9 40:11 48:19 50:11 53:19 60:12 61:15 78:23 79:17 86:9 correctly 42:6 counsel 12:24 13:5,11 43:22,22 80:24 counter 43:5 counterproductive 21:22 counting 46:4 country 18:11 County 1:8 14:1,1 86:4 couple 46:16 74:12 course 9:8 16:10 23:12 40:1 41:18 49:10 64:21 65:10 court 1:21 5:16 12:21 81:4,20 cover 20:11 28:25 48:22 54:21 74:15,16,20 covered 14:18,20 covering 15:10 20:19 cracks 33:25 craft 81:21 creating 5:14 Creek 24:5,11,11,20,21 24:25 25:4,5,8,15,19 25:20 27:5 28:3,5,8,13 28:15 37:14,14 48:13 48:13 cross 50:12 crushed 14:13,21 30:16 CSR 86:17 current 19:9 currently 31:21 cut 53:1 cyclical 75:14 C1-C2 79:18	deal 55:19 62:25 64:1 dealt 18:17 49:8 Dean 2:15 December 73:3 decides 42:11 decision 6:23 10:17,23 17:1,22 21:23 23:13 35:2,6 40:1 58:3 60:17 60:18,21 61:10,14 63:6 63:22 64:5,19,23 66:6 67:2 82:4 83:21,25 deep 37:3 define 39:17 59:15 74:3 defined 58:21 59:4 80:4 definitely 52:12 definition 39:14,15,15,21 59:8,23 60:9 70:16 definitions 68:8 degradation 34:9 degree 56:17,19 degrees 32:5 delayed 79:3 deleterious 80:17 deliberations 43:8 67:3 deliberative 63:18 demonstrate 33:7 demonstrated 31:6 Denise 3:2 4:15 13:4 34:21 45:5 48:18,21 58:20 60:13 77:8 81:8 Department 1:2,15 6:2 39:17 59:4 61:24 69:24 departmentalized 47:20 47:22 dependence 18:12 depending 80:10 depends 78:24 80:3 deprived 22:13 depth 24:10,14 36:11,14 37:1,3 42:1 47:14 50:5 50:15 55:25 depths 27:20 48:1 DEQ 67:17 derive 63:20 describe 68:6,7 described 33:16 47:17 50:15 70:4,20 72:12 description 36:18 42:16 47:16 50:3 52:7 55:5 72:16 design 5:11 7:12 22:11 28:17 29:17 31:8,18 32:16 40:16,24 41:2 42:21 52:20,21 53:10 74:5 75:22,25 77:15 designed 21:16 29:16 52:16,18,22 74:14 designs 52:12 69:11 Despite 35:8 detail 23:20 detailed 37:16 40:20 41:18,19,20 52:10,11 details 15:16 determination 41:12,14 60:25 61:7 62:4 65:6 78:15 determine 49:11 56:16 determined 8:11 42:6 determining 6:16 10:19
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D

D 4:7 5:1 36:2
damage 71:7
Dana 2:15
danger 79:15
dangerous 70:10
data 23:5 25:12 30:11
39:10 50:10
database 38:20,20,22
date 1:17 8:2 10:17 16:18
dated 30:3 36:23 41:5
dates 13:21 15:22 16:21
day 83:12 86:14
days 45:11 60:23 81:20
83:11

<p>11:6 22:16 25:25 51:13 59:10 83:4 develop 18:3 development 3:10 4:1.3 16:13 18:7.10 devoid 43:23 differ 31:20 difference 79:23 different 42:13 63:25 80:1 81:16 84:19 differential 34:1.4 differentiated 70:22 difficult 17:21 71:13 difficulties 62:20 diligent 84:17 85:9 diminish 72:4 direct 17:24 23:14 directed 30:19 direction 49:23 directly 22:16 director 2:15,21 4:2 5:6 17:25 34:23 36:5 43:14 53:5 69:17 73:17 78:9 84:5 discharge 18:18 22:1.1.3 22:10 25:9 35:1.7,10 38:13 40:4.4,10,17,23 41:6,15,21 46:19 47:2 61:1 69:5,7,12 71:15 71:20 78:13 disclosing 21:7 discontinuous 72:4 discourse 84:13 discovery 12:1 discuss 19:19 29:13 32:5 34:4,7 63:14 discussed 35:21 65:3 discusses 25:8 discussing 16:10 26:5 discussion 4:22 5:13 31:18,19,21,22 34:24 38:3 52:3 53:23 72:7 81:6 displacement 33:19 34:2 dispute 21:2,3 85:6 disputed 85:7 distances 33:9 distracted 47:7 disturbed 14:4 Division 2:2,6,9,11,15,17 2:18,20,24 4:9,17 5:6 6:12 7:2,10,22,24 9:7 9:18,23 10:7 12:7,10 12:11 13:16,18 15:19 15:23 16:4,9 17:2,5 27:15 31:8 33:5 34:20 35:7,13 36:21,25 37:5 37:11 38:17 40:2,9,13 40:19 41:8,10,11,12,17 41:22,24 42:6,8,10,13 42:15 45:24,24 49:2,9 49:18 50:21 51:19 54:1,6,10,12 55:22 57:18 58:1 59:10 60:16,19,22,24,24 61:4 61:6,13,16 62:4,11,12 62:25 63:2,6,7,17 64:12,17 65:5 66:21,24 66:25 67:7,18,25 68:1 68:15,20 69:21 70:4</p>	<p>72:15 73:5 74:7 75:2 76:22 77:23 78:5,5,12 78:14,18 79:9 82:16 83:16 Division's 6:7 10:16 11:7 36:10 48:24 54:14,24 61:21 64:25 77:17 79:21 82:12,13 85:3 document 42:23 43:7 44:2,6 67:5 68:19 81:7 81:10,22 documents 33:22 81:14 82:11 84:1 85:2 DOGM 7:9 61:9 DOGM's 22:14 23:20 doing 51:18 doors 79:20 double 50:8 53:15 Douglas 24:11,20,25 25:5,8,15,19 28:3,4,8 28:13 37:14 48:13 downstream 71:24 Dr 3:10 Dragoo 3:2 4:15 11:21 12:4 13:4,4 34:23 43:1 43:9 44:18 45:1,9,13 45:18 46:1,8,15 47:5 48:19,23 58:22 59:1,18 59:20 60:20 61:11,15 67:9,11 73:17,21 77:18 78:3,10 79:17 81:12 82:6,17,19 85:16 drainage 47:11 draw 47:11 drawings 33:16 50:4,23 drawn 56:13 drill 26:13 27:17 47:6,9 drilled 26:10,22 47:11,12 59:21 driller 26:15 drilling 26:9,14,15 27:3 38:1,5,10 48:1 driver's 66:13 dropping 48:9 dry 75:15 Dubuc 3:18 4:12 11:13 11:20 12:23,23 17:11 17:14,16 34:16 42:22 43:2,21 44:10,16,21 45:6,10,15 62:10,15,18 64:6 66:16,19 79:6,7 79:22 81:25 82:15,18 82:20 85:6 Dubuc's 54:12 due 33:12 81:17 duty 22:3 62:1 DWQ 7:10 18:18 22:5,9 22:16,21 23:1,12 30:1 33:5 49:16 60:15,17 61:10,14 67:22 68:5 69:5 73:1,3,8,13 84:18 84:22</p>	<p>eastern 25:2 economic 20:1.7 EcoShale 40:15 41:2 42:21 edge 48:6,8,10,11 editorial 19:7 educated 58:7 effect 34:8 77:24 78:7 effectively 70:6 effects 23:3 31:19 efficacy 85:1 effort 84:17,24 85:9 either 20:25 25:21 31:9 31:13 51:7 72:5 elaborate 64:14 electrical 51:1 electronic 82:18,20 Elliott 3:24 4:13 12:24 23:23 46:13 Elliott's 38:12 Emily 2:5 13:10 45:21 encounter 26:10,25 47:9 encountered 27:2,20 38:1,5 48:1,17 60:2,5 encountering 46:22 encourage 42:8 ended 16:8 75:6 Energy 3:10 4:1,2 7:17 Engineer 2:18 Engineers 29:3 engineer's 38:20 EnShale 7:13 enter 29:19 entering 74:23 entire 14:3,22 40:3 environment 18:24 20:25 29:17 56:18 61:24 69:22 80:17 environmental 2:16 3:10 3:15 39:17 42:2 59:5 69:24 environmentally 20:22 20:23 eroded 48:6,15 erosion 47:15 especially 84:12 ESQ 2:5,10 3:2,5,18,18 establish 5:10 26:12 et 8:25 68:7,24 evaluate 29:21 30:4 31:8 33:5 evaluated 28:22 29:1 32:8 evaluation 29:2 31:17,25 34:14 event 8:24 11:22 52:20 77:18,23 78:5 82:7 86:12 events 52:18,19 75:15 eventually 15:5 everybody 13:14 82:10 everybody's 54:3 everyone's 85:12 evidence 7:8 9:17 10:17 25:18 22:26 7:27,13 39:7,10 51:9,22 82:25 exact 13:21 16:21 30:5 32:8 exactly 15:16,20 59:18 65:17 81:12</p>	<p>example 21:20 excavated 14:16 excerpts 35:23 exclude 43:7 excuse 16:22 47:6 executive 36:21,23 exert 32:15 Exhaustion 8:22 Exhibit 36:2,12,20,24 37:23 38:14,17 exist 33:13 existence 7:4 existing 39:2 51:2,3 exists 28:11 expand 23:3 expected 56:13 experience 54:24 58:6 experienced 58:8 68:23 experimental 19:13,24 20:5 expertise 41:23 52:23 53:6 54:4,7,24 55:23 58:15 62:24 63:19 experts 49:17 77:4 expired 32:21 exploration 26:9,15 31:15 exposed 76:24 exposures 48:12 extend 24:9 33:8 70:23 extended 76:25 extensive 49:16 71:14 extent 50:5 70:23,24 extra 42:19 extracted 24:9 extracting 15:4 extraction 30:8 31:1,24 32:3 34:13 63:15</p>	<p>F F 2:10 facilitate 79:15 facilities 15:12 51:3 facility 31:14,16 67:21 68:9 69:7,15 fact 21:3,18 22:7 24:18 25:2 26:20 28:3 29:14 30:1 32:7 35:5,8,9,13 35:25 39:14 61:13,20 72:3 73:7,12 77:22 81:17 Fahrenheit 32:5 fails 7:4,6,11 23:20 30:11 31:12 33:7 35:24 failure 34:25 failures 32:18 fair 72:22 familiar 53:5 54:4,6 far 19:15 fatal 34:24 35:11 February 1:17 6:1 30:3 73:8 86:14 federal 61:17 feel 43:5 44:24 45:1 feet 14:20,23 20:12,12,20 24:10,15,15 27:8,25 28:2,5,8,13 31:2,4 32:14 33:9,19 37:8 51:4,22 53:12,14 74:17 74:17,18,24 75:8</p>	<p>felt 53:17 field 51:20 85:1 Figure 28:3 38:13 file 1:24 8:1 10:16 27:14 38:16 82:12,13 fill 63:19 final 6:15,17 8:6 10:21 10:22 61:10 63:22 64:8,23 77:11 83:3,5 83:11,21,25 84:7 finalize 82:4 finalized 35:14 finalizes 64:5 finally 10:6 25:11 38:15 55:11 find 79:21 fine 44:18 46:1,7 63:12 82:18,19,21,22 finishing 77:12 first 5:10 6:5 7:3 9:23 12:7,14 13:15 14:9 15:21 19:24 20:5 25:20 28:1 29:13 36:7 36:11 44:7,8 49:20 54:9,11 81:4 84:11 fit 19:21 47:16 five 11:16 53:12 54:21 flat 21:2 flaw 34:24 35:11 floor 1:21 28:14 flow 71:23 flowing 60:4 fluids 28:18 30:10 34:9 focus 41:24 focused 35:20 41:10 focuses 42:13 folks 5:4 65:14 67:16 followed 50:16,16,16 following 15:23 29:18 35:15 follows 9:20 foot 74:16 forego 7:18 foreign 18:12 form 44:14 50:8 79:18 86:8 formal 5:13 7:22,23 8:2,7 8:12,16 9:10 11:24 16:1,1 formation 24:6,6,12 25:2 25:16 26:6 27:6 37:15 39:6,18 59:5 formations 27:18 37:15 48:12 51:8 former 69:17 forth 5:14 36:19,20 37:24 38:11,12 39:16 40:21 57:13 64:21 forum 63:14 forward 61:18 75:17 85:14 found 39:7,7 46:18 50:23 53:14 59:22 83:22 four 7:1 36:4 43:13 63:11 fourth 7:11 fractures 27:3 28:14 fracture-hosted 47:13 fracturing 47:14 frame 6:14 9:21,22 11:19 66:10</p>
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HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

Page 4
1-800-288-3376

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HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

issues 9:17 10:12 12:18
17:18 18:15,17,21 36:4
40:25 42:11,19 43:13
46:16 49:6,7,8 55:21
80:21
issuing 25:21 26:5 51:7
item 17:10 36:4,4 50:5
iterative 57:13

J

JBR 3:15
Jeff 3:12
Jennifer 7:16 16:11
John 2:2 3:22 4:2 5:5
49:23
Joro 3:18 12:25
judges 58:5
judgment 58:14,15
judgments 58:8
Julian 4:2

K

K 38:18
keep 11:19 32:10,17
81:23
keeping 10:14
Kennecott 54:21
kerogen 15:4
key 25:5 28:19
kin 86:11
kind 5:10 15:17 19:24
20:5 44:14,21 45:7
54:13,25 57:12 63:9
67:24 69:14 71:11
80:25
know 5:18 11:17 18:19
26:14 34:18 42:18
44:15 46:14 55:14
58:6 61:1,21 65:16,22
66:14 69:20 70:9,15
71:13 72:1,6,18 74:25
81:22 83:9,17,24
knowledge 54:3
known 24:15
knuckle 32:16

L

labels 19:25 20:2
laboratory 31:11 32:25
lack 26:18
Lake 1:16 2:7,12 3:4,7,20
6:2 16:6 86:4,13
LANCE 3:5
land 14:5,5,9
Landfill 29:2
landing 51:1
Lands 14:6
large 1:7 6:9,24 9:1
20:14 54:15,20
larger 54:21 70:22
lasted 66:3
late 45:15
Laura 3:10 13:5
LaVonne 2:21
law 23:18
layer 14:16,18 20:17
28:18,23 29:5,8,11,23
29:23 30:1,7,12,23,24
33:11 42:21 74:1,2
76:9

layers 30:17
leachate 23:6
lead 4:22 84:6
leading 9:24
Leaf 1:7 3:1,11 4:14 6:8
6:24 7:8 9:6 10:4 13:3
13:5 18:4,14 19:23
20:3,10 21:17 22:2,9
22:20 23:1 24:7 26:9
26:24 27:8,17 28:7,16
28:22 29:21 30:2,3,14
30:21 31:7,14 32:9,18
33:6,7,20 34:20,22
35:6,9,18 36:15,22
37:10 39:13 40:8
43:13 46:4 49:19
58:18 59:9 65:23 68:3
68:25 71:2 73:8 77:22
78:4,21 83:17 84:6,6
85:4
Leaf's 17:23 20:9 21:21
21:24 28:19 29:4 30:8
32:7 37:6 39:6 59:14
60:17 85:7

leak 20:24
leakage 7:13
LED 53:23
leechate 20:25 29:22
leeway 10:9 17:12
left 10:11
legal 13:11 43:22,22,23
LEHNHOF 3:5,6
length 41:20
lenses 25:14
Leslie 2:18 4:19 12:17
49:20 22:53:7 54:4
58:10,12 65:19,25
67:16
lessen 55:2
letter 7:2,19 16:2,11
17:19 18:13 30:2 36:6
40:7,22 43:15,20 44:1
44:15 49:25 67:12
68:4,16 69:3 81:11
84:22
letters 16:9,12,14
let's 5:4 6:7,10,13 71:8
77:10,13
level 15:6 74:5,10
Lewis 2:5 13:10 84:2
liberated 30:15,18
license 66:13
light 23:15
lightly 18:1
likelihood 76:24
limit 6:21 82:24
limitation 11:15
limited 20:7 56:4,4 62:23
71:4
limiting 9:20 49:23
line 26:7 27:13
liner 31:19,19
lines 25:17 51:1
Lips 3:24 4:13 12:24
17:17 20:5 23:19,22,24
32:22 35:21 43:9,24
54:7 69:2 70:11,17,18
71:12 73:2 76:3,16,20
77:2
list 6:25

listen 83:18
literature 39:3
little 10:11 24:4 27:15
38:2 46:5 47:21,24
58:25 59:22 70:7 71:2
78:1
live 39:4
Living 1:6 3:23 4:11 6:22
7:3 9:5 10:1 12:22,24
17:11,13,20 34:25
35:16,24 36:5 37:13,25
38:18,24 39:9,14,23
40:7,11 43:15 44:3,24
46:13 54:2,11 59:2
62:8 81:20 83:19
84:15
LLP 3:6
load 33:12,13
local 7:15 36:8 61:17,19
localized 25:13 28:12
71:21
located 37:21
location 27:11 38:20
locations 53:15
log 27:11
logical 29:24
logs 26:13 27:17 38:11
long 48:6,15 75:12 83:25
longer 75:1
long-term 23:3
look 5:18 13:21 15:22
36:12 44:13 45:6,21
56:15 74:14,20,25
75:11 82:13
looked 29:9
looking 73:6,15 75:10,20
76:9 81:8
looks 11:23,25 16:25
55:22
loose 80:25
loses 31:2
loss 32:2,14 47:8
lot 56:1 72:7 83:17
low 27:25 37:8 53:12
lower 29:23 30:1 75:17

M

magnitude 71:10
Mahogany 24:8 28:3,5,9
39:4
Main 3:6
major 38:8
majority 24:7
making 5:20 60:18 61:7
80:9
Mallonee 1:19 86:5,17
Manager 2:16 4:2
map 50:8,8
mapped 25:21,24 37:19
51:7,11
maps 50:3,23 51:12
marlstone 37:9
marlstones 27:25
match 77:4 79:22
material 14:12 39:19
46:14 50:6,14 59:6
74:18,20
materials 36:2 80:17
matter 1:6 21:4 18 85:17
86:7

matters 69:20
mean 44:22 46:12 53:1
54:11 57:22 61:23
62:19 65:13 66:11
71:2 82:10
measure 43:5
medium 26:22
meet 23:20 59:23 63:13
66:12 85:2
meeting 5:11 13:13 19:18
51:25
meets 36:15 63:12 65:7
member 24:5,7,11,11,25
25:15 27:5 28:3,5,8,13
28:15 58:2,5 69:18
members 25:5,21 37:15
37:23
mention 16:18 74:12
85:5
mentioned 69:2
met 6:17 10:20 35:18
36:22 37:10 42:5,7
52:13 66:9,9 83:4
method 31:5 51:18
methodology 51:16,16
mice 60:8
Michelle 1:19 82:2 86:5
86:17
migration 28:18 30:10
miles 20:20 28:7 70:23
70:24
Miller 26:5
million 20:20
mind 60:17 63:9
mine 1:7 8:6 9:10,18,25
7:6,7,14 12:14 13:21
13:24,24 14:3 22:18,25
23:10 26:11 28:14
43:11 51:10 54:20,22
56:1 69:18 80:22
mined 27:17
mines 19:16 52:25 53:9
55:19
minimize 9:21
minimum 23:10 80:16
mining 1:1 2:2,9,15,15
2:17,18,20,24 6:24 9:1
9:7 14:9 15:17 18:11
19:12,15,17 24:2,9
27:23 28:24 37:7 41:8
41:25 51:4 54:15
60:19 61:4,16 62:12
63:2,17 70:1 71:3
76:22 77:14 78:12,23
80:8
minus 74:6 76:6
minute 5:8,15 16:23
45:17 46:12 57:19
80:25
minutes 9:25 10:3,6,8
11:14,16 17:11 32:21
32:23,23 45:24 46:5,6
mistake 17:24 54:13
mitigate 55:12 57:3
mitigation 49:13 52:3
56:16,19,20,23 57:11
57:15
mitigations 57:8
model 23:7 30:4 74:13,14
74:19 75:12,14 76:5,8

76:9
modeling 23:3 31:12
33:1 68:24 73:10
74:21 75:4
modification 78:20
modified 80:21
modify 77:19 78:7
moisture 74:14,20,23
75:5,16
monitoring 55:17 74:9
77:24 78:6 80:19
month 15:21 35:4
months 15:21 18:6 19:19
22:19 63:11 65:13
67:5
morning 5:5 12:23 17:15
mouth 54:12 59:14
move 75:16,17 85:14
moved 77:10
movement 25:8 34:1,2
moves 74:20
Munson 2:19 4:20 50:18
50:20,20 52:5,16 53:3
65:21
M/047/0103 1:8 6:10

N

N 1:21 4:7 5:1
name 5:5 17:15 73:23
names 12:20
narrated 81:10
narrative 36:18 50:3,14
52:7,10 55:5 72:16
narrow 41:24
narrowly 35:20 41:9
natural 1:2,15 2:6,11 6:2
53:11
naturally 53:13
nature 19:13
near 14:1 25:22 27:3
51:8
nearby 25:12 26:3 27:14
36:25 38:16
nearly 35:4
necessarily 5:13
necessary 5:17 50:4
69:13
need 11:9,24 18:10 38:22
44:3 61:23 63:8,10,16
74:16,25 78:10 79:3
80:21,24 81:5 82:24
needed 22:14 63:2 68:11
needs 12:1 23:13 32:11
56:16
neglected 60:3
neither 27:9
Nelson 3:10 13:5 84:5,11
never 20:3 31:6 67:25
68:1
new 11:23 12:1 19:14,21
23:16 31:6 84:19
63:15 77:21 82:8 84:8
newspapers 16:7
night 60:8
nods 67:23
NOI 7:3,6,11 17:23 19:2
20:4,10 21:24 22:5,23
23:20,25 24:17,19,22
25:3,17,20 26:1,4,8,13
26:25 27:9,13,22 28:1

<p>29:13,15 30:11 31:12 31:15 32:1,5 33:17 34 4,7,11 35:23 36:1,8 36:13 37:17 39:2,24 41:4,5,12 46:20 49:11 50:7 51:6 54:15,20 55:4 57:11,15 59:9,17 61:10,18 62:3 64:10,16 65:1,7,11 66:6,8,19 68:6 73:5 77:11,17,19 77:21,25 79:12,19 81:15 non 18:15 19:10,12 non-revegetated 76:18 non-vegetated 29:7 normal 64:21 North 1:15 2:6,11 northern 25:9 Northwest 13:7 Norwest 3:14 32:7 40:25 41:1 47:12 Notary 86:5 note 5:20 11:2 84:2,15 noted 19:1 23:8 40:21 79:9 notes 5:19 notice 1:7 6:8,17,23 8:16 8:16 13:6 16:6,8,19 35:14 37:11 38:15,21 41:9,25 42:9 43:18 61:22 78:7 79:24 80:3 80:5,11 83:5 noticed 7:22 notified 22:5 notify 66:24 notifying 77:23 November 6:22 16:8 35:3,14 49:24 Nowoslawski 4:2 number 50:10 55:17 65:22 numbers 76:7,15,18</p> <hr/> <p>O</p> <p>O 5:1 object 42:23 81:24 objections 55:10 objectives 42:12 obligation 23:18 49:10 85:4 obligations 22:15 observation 26:19 observations 26:16 47:12 51:20 observe 85:13 observed 26:23 38:7 80:19 obtain 7:8 21:21 23:12 35:6,10 40:9 61:22 obtained 61:18 obtaining 40:3 obviates 61:23 obviously 46:13 62:1 occur 28:23 34:14 47:25 77:20,21 occurrence 24:14 25:13 71:14 occurrences 70:21 71:20 occurring 53:12,13 occurs 28:2 33:23</p>	<p>October 16:5,20,25 35:2 35:5 36:23 40:1,12 42:10 60:16,21 61:5 65:13 office 2:5,10 4:1 13:10 15:11 officer 2:2,4 4:22 5:4,6 6:15 8:3,7,11 10:19,22 11:6,17,21 12:3,5,15 12:19 13:2,9,11 16:17 16:22 17:4,7,9 34:18 43:18 44:5,11 45:5,17 45:19 46:2,10 48:21,25 52:1 53:23,24 56:7,21 56:25 57:2,6,12,17 58:9,13,17,24 59:13,19 59:25 60:11 61:8,12 62:7,16 64:3,24 65:10 65:19 66:4,17 67:10 70:7 71:1 72:22 73:19 76:1 77:3,6 78:16,22 79:5,25 80:23 81:3,7 81:13 82:2,9,23 84:4,9 85:11 oftentimes 79:8,14 Oh 58:24 62:18 76:16 oil 1:1 2:2,9,15,17,18,20 2:21,24 9:7 14:12,14 14:20 15:2,4,11 18:8 18:10,12 19:9,14 24:8 28:5 30:14,18,21 31:5 41:8,24 51:2 60:19 61:4,16 62:12 63:2,17 76:22 okay 11:17,20 12:15,19 16:17,22 17:3,4,7 32:22 47:5,23 52:1 57:6,17 58:13,17,24 59:13,19,25 62:7 72:22 73:21 81:3 84:9 once 14:15 15:4,5,13 21:1 40:5 42:8 67:25 68:1 ones 20:7 one-mile 37:21 open 18:9 24:16 82:10 opening 17:17 Open-File 50:9 Open-pit 24:9 operation 14:9 15:17 21:25 24:3 29:18 31:10 50:2 71:18 72:20 77:15 78:25 operational 80:15 operations 1:8 6:9,24 9:1 24:9 27:23,24 37:7 50:4 51:4 60:23 78:23 80:12 operator 6:11 14:3,16 16:2 36:17 50:2 52:6 55:4,18 57:14 62:1 operator's 55:18 opined 67:25 opinion 11:4 43:23 59:15 68:1 opportunity 6:6 10:4,7 19:18 23:23 43:6 44:3 44:25 49:5 80:9 82:6 83:18 opposed 44:11</p>	<p>order 6:16 8:6 9:22 10:19,22 31:7 33:21 58:19 83:3,11 ore 14:12,20,25 15:2 24:8 28:19 29:6,25 30:16,25 31:2,3 32:4 32:15 33:18,19 34:5 75:9 organics 34:8 organizing 84:12 originally 15:19 other's 11:1 ought 85:10 outdated 39:24 outline 20:6,8 23:20 outlined 20:4 outlines 74:3 outside 14:23 63:14 81:1 overall 35:18 42:12 overburden 14:11 28:25 50:6,13 56:1 74:17 overlap 18:20 64:1 oversight 18:20 overtake 17:21 overview 13:20 14:8 owned 14:5</p> <hr/> <p>P</p> <p>P 5:1 packet 36:13 page 4:8 38:3 pages 36:13,19 40:20,22 64:15 pan 14:19 30:19 Parachute 24:5,11,20 25:4,19 27:5 28:15 37:14 48:13 parameters 74:23 75:5 parcels 24:7 25:22 26:3 27:16 51:8 part 10:23 21:24 33:12 44:12 57:2,9 64:4,25 69:5 72:14,25 73:2,24 75:2 79:10,20 81:15 82:11,12 83:13,21 85:4 participate 13:14 participated 83:10 particular 5:7,21 53:14 65:17 74:7 particularly 28:17 71:15 parties 8:14,14 9:4,16,21 10:22 11:1 12:6 86:11 parts 25:9 party 8:10 83:9 patent 42:21 Paul 2:16 4:10 12:13,16 13:19 17:5 53:21 77:9 78:16 pay 5:22 penetrated 76:8 penetration 74:13 75:7 75:13 people 12:6,11,17 39:4 58:7 85:13 percent 33:21 perched 7:15 25:14 28:12 37:2 70:14,16,19 71:9 72:3,13 percolate 29:22 Perennial 50:24</p>	<p>performance 11:7 29:2 74:9 76:23 period 15:9 16:8 35:15 45:9 74:22 75:1 76:25 periods 75:15,15 permeability 27:25 37:8 39:5 48:3 74:5,6 76:6 permeable 25:14 39:19 59:6 permit 7:9 9:24 10:21 13:17 18:18 22:3,7 24:13,24 25:3,6,11 26:21 27:1,7,10 28:4 28:21 31:15 32:16,24 33:10 35:1,7,10,23,25 40:3,4,4,10,14,23 41:6 41:14,15,21 42:11 43:19 47:2 49:8 60:13 60:14,22 61:1,2,3,3,4 61:19 62:5,6 63:9,10 64:10,13 66:20 67:14 67:23 68:11,17 69:5,9 69:12,13 73:1,3,3 77:13 78:13 80:10,20 permits 61:17,24 78:11 84:20 permitting 18:5 23:11 64:20 66:5 69:5 persist 47:14 person 8:1 9:8 personnel 17:24 22:13 23:15 perspective 20:9,13 51:24 52:14 65:24 pertinent 22:16 27:15 Peters 4:3 petition 8:1,3 petrochemicals 7:14 20:24 pH 23:6 Phase 8:21 phone 66:2 phonetic 46:21 Photographs 50:24 pick 12:21 piece 74:7 pilot 21:5,8,13 31:9 33:1 pipe 30:18 pipelines 51:2 pipes 15:1 30:18 32:13 pit 24:16 place 78:11 79:10 placed 15:14 30:17 plan 21:14 50:2,14 52:16 52:17 73:22,25 74:3,10 77:24 78:20 plans 20:10 57:11 69:11 Plateau 48:11 please 5:22 plenty 62:8 point 23:19 44:24 58:1 63:14,17 69:4 points 71:20 political 18:7 pollutants 22:1,10 porous 28:2 39:4 59:3 portion 5:9 pose 77:8 possible 74:6 17:14 18:4 18:24 19:20 23:17</p>	<p>26:13 30:2 33:5,18 57:25 post 10:15 potential 28:11 31:18 49:14 52:7 53:8 55:6,8 57:7 68:10 71:7,12,23 72:16,20 potentially 25:1 71:19 practices 80:15,16,22 precipitation 28:22 29:5 29:8,10 73:10 75:6 76:12 predicted 33:11 preface 49:4 prefer 19:23 prejudice 8:9,14 premature 63:23 64:7 premise 22:13 66:19 premised 22:8 preparation 14:13 prepared 11:14 13:6 17:16 34:16 35:21 43:21 preparing 59:9 presence 19:3 24:22 25:7 25:25 26:12,17 27:4 47:3 51:13 present 2:14 3:9,21 4:1 6:10 9:16 10:1 13:16 13:20 16:16 23:23 39:10 67:17 presentation 48:24 presented 6:21 7:16 9:17 10:18 23:25 34:11 35:8 45:3 66:4 82:11 83:1 President 3:10 presiding 8:7 pressed 63:10 pressure 18:2 34:8 presumption 28:16,19 30:9 pretty 12:11 13:13 49:15 55:14 56:3 prevent 7:13 28:18 30:10 32:18 40:16 previous 9:18 pre-design 67:15 pre-stripping 14:11 Price 26:4 primarily 14:5 primary 47:1 principal 11:9 principally 5:16 12:8 prior 9:9 60:23 80:8 private 14:6 probable 22:1 probably 12:5 40:20 44:13 48:23 53:25 56:8 66:1 77:1 problem 43:10 45:6 46:3 79:7 procedure 9:19 74:3 Procedures 8:20,21 9:2 proceeding 6:20 8:2,4,8 8:8 9:10,13 64:4 proceedings 86:7,9 proceeds 15:8 process 15:3,5,7,8 18:5 18:18 20:2,22,23 21:1</p>
---	--	---	--	--

21:20 23:12 30:8 31:1
32:3 34:14 41:20
42:15 57:13 63:18,21
64:14,15,20 69:6 70:5
78:11,17 79:14,18,19
84:18,22 85:1
processed 14:15
processes 63:15 65:4,5
84:24
production 21:13
professional 55:23 58:5
58:15 86:5
program 29:3 75:23
programs 42:12
progress 85:14
prohibited 9:14
project 16:14 21:5,8,13
21:15 31:10 75:22
projected 27:21 72:10
properly 37:11
property 51:23
proponent 84:5
proposal 20:9,15 22:17
proposed 13:24 14:4
19:16 20:3 21:6,25
24:2 26:11 28:14
31:21 32:2 50:4 51:4
55:12 57:3 68:12
71:18
proposes 30:14 31:7
proposing 14:3 21:9
protect 49:12
protected 32:11 78:12
protecting 69:22
protection 53:16 80:17
80:18
protective 21:9
protest 1:6 6:22 10:2
19:1 44:1 59:1
protestants 9:5
protests 39:11
provide 6:6,11 7:11 9:23
23:1 27:10 30:12
31:13 35:22 36:18
37:22 38:23 42:2
43:24 44:3 45:7 49:5
50:3 52:6 55:5,20
61:21
provided 18:20 20:8
22:15 27:13 32:19,25
37:17,23 42:4 50:7,13
52:9,11 68:19 85:2
provides 25:12,17 27:15
38:15 39:2,14 45:10
providing 33:4 42:15
provision 43:2
public 8:9,13 16:6,8 31:9
33:5 49:5 54:18 68:5
79:13,17,19,20,24 80:3
80:5,11 82:11 86:5
published 16:6 26:5 50:9
pull 16:23
pulled 38:22
purpose 6:5 11:4,10
21:11
pursuant 7:20,25 8:5,19
9:3,11,15 10:23 83:12
pursue 84:21,23
pursued 84:17
purview 69:10,14

push 18:10
pushing 21:19 82:23
put 14:16,21,21,25 15:1
15:6 20:9 59:14 83:16
83:17
putting 56:21
P.E. 4:3

Q

QA/QC 74:3,9 75:23
QA/QC 73:25
quality 7:10 18:16 35:8
38:13 39:17 40:19
41:10,17,23 42:11,13
42:14 49:9 59:5 60:25
61:7,24 62:4,11,25
63:7 64:5,12,25 65:14
66:22,24 67:19 68:1,15
68:21 69:21,23,24
73:22,25 74:8 75:3
77:11 78:5,14,19 79:3
Quality's 41:12
quantities 24:21 26:23
38:6 39:20 59:7 76:13
quantity 29:22
question 11:22 27:16
36:7 46:17,17 51:25
54:9,20 56:5,11 57:18
71:18 72:21 73:19
77:8 80:2,7
questions 11:11 14:17,19
68:21 69:1 70:10
71:25 83:1
quick 76:3
quickly 18:4
quite 47:17,23 52:11
54:22 72:6 77:20
quote 69:19

R

R 2:2 5:1
radius 37:21
raise 18:16
raised 36:5,5 37:13,25
38:24 40:25 43:14,14
49:19 55:10 56:10
75:19
raises 82:7
ramp-up 21:14
ran 23:7 60:8
Ranges 13:25
raw 24:8
reach 58:1 63:17 75:9,18
read 5:8 43:9,11
reading 67:22
realize 60:11 75:4
really 15:25 39:1 41:22
44:11 45:13 46:25
55:14,23 61:6 63:1
65:24 74:19 83:15
reason 35:3 53:8 85:5
reasonable 6:14 44:16
68:14 83:2
reasons 51:12 68:3
rebuttal 46:9,10
recede 75:16
receive 6:20
received 7:19 8:3 13:22
15:19,23 16:9,12
recharge 48:4,14

reclaim 29:6
reclaimed 28:24
reclamation 29:18 42:17
56:1 69:18 80:15
recognize 62:23 63:25
72:19 84:19
recognized 38:9
recognizes 30:1
recognizing 10:9
recommend 17:22
recommendation 17:25
22:24 23:10,15,16
46:24
recommendations 41:1,3
recommended 32:8
reconsider 23:15
record 5:23 23:24 28:10
38:23 40:6 43:8,10,11
43:16 44:19,20 45:3,14
68:5 79:11,20,23 81:5
81:6
recorded 26:14 51:20
records 36:24 38:22 65:1
recover 30:14
recovering 31:5
recovery 29:19
Red 1:7 3:1,11 4:14 6:8
6:24 7:8 9:6 10:4 13:3
13:5 17:22 18:4,13
19:22 20:3,8,10 21:17
21:21,24 22:2,9,20
23:1 24:7 26:9,24 27:8
27:17 28:7,16,19,22
29:4,21 30:2,3,8,14,21
31:7,14 32:7,9,18 33:6
33:7,20 34:19,22 35:6
35:9,18 36:15,22 37:6
37:10 39:6,13 40:8
43:13 46:4 49:19
58:17 59:9,14 60:17
65:23 68:3,25 71:2
73:8 77:22 78:3,21
83:17 84:6,6 85:4,7
redo 17:25
reduce 33:18
reduced 33:15
reference 51:12 72:9
referenced 50:13 60:13
68:25
references 43:18 72:9
referencing 50:3
referring 77:1
refers 57:21
reflect 25:13 37:1
reflected 37:2
regard 27:21 52:2 56:2
72:5 80:2,7 81:17
84:16
regarding 6:7 7:19 26:17
38:25 40:21 41:2
42:20 46:21 65:25
69:23
regards 50:22 52:10,13
regional 24:24
Registered 86:5
regs 19:13
regulate 19:9 69:7
regulating 69:14
regulation 45:10 63:14
regulations 7:11 18:23

19:10,11,20 54:22 63:5
66:12
regulatory 19:6,8 22:14
23:21 35:19 69:10
rejected 68:15
relate 18:16
related 47:15 69:20
relationship 51:5 70:3,5
relative 54:15
relevant 6:17 8:16 10:20
83:4
relied 22:12 39:23 59:9
59:10
relies 28:16
rely 31:9
relying 60:24
remain 30:12 33:17,22
remains 30:7
remarks 34:16
Remedies 8:23
remember 15:20
remind 69:17
removed 14:10,12,13
rendered 68:1
repeated 15:7
report 26:5 31:17 37:17
37:24 50:9,10
reported 1:19 25:3 46:19
47:13 86:7
reporter 5:16 12:21
47:20 48:8 81:5,20
86:5
REPORTERS 1:21
reports 25:20 26:8,21
27:2,7 28:1,8 33:3,4
51:6
representative 9:5 13:6
represented 76:18
represents 46:25
request 19:18
requested 10:18
require 7:9 19:2 36:16
36:17 40:10 51:15
67:23 78:20 80:16
required 7:10 14:11 22:7
37:4 41:16 52:21
56:19 57:11 60:22
61:2 62:5 63:4,4 64:11
64:13 66:21 67:1,14
77:19 78:15
requirement 36:10 79:2
80:13
requirements 8:16 18:23
19:2 23:21 35:19,19
36:11,15,16,22 37:11
41:7,19 42:1,4,6,7
49:12,15,16 50:22
51:25 52:4,14 62:2
63:12 65:7 78:19
80:14
requires 52:3 54:23 55:3
55:24 72:14 78:6 80:5
research 39:6
reseeded 15:15
reserve 11:25 12:2 46:8
resides 69:23
resolve 10:12
resource 3:17 9:6 16:11
16:13 49:24 72:1
resources 1:2,7,15 2:6,11

3:1,11 4:14 6:2,8,25
7:5 9:7 10:4 13:3,5
18:4,8,11 24:2 26:9
28:7,20 30:2 36:9 39:8
39:11,13,21 42:3,16
43:13 55:9 57:21
58:18,21 59:9,11,11
60:12 61:6 62:23 71:2
71:5 77:22 78:4
respect 37:13 41:3,8 74:1
84:15
respectful 11:1
respond 6:12 43:6 44:4
44:17,25 66:16 67:9
73:17
responded 69:1
response 35:21 36:3
43:12 44:15 45:8 49:4
75:2 81:21 82:12,20
83:7 84:21
responses 45:11
responsibilities 19:6
62:14
responsibility 54:15,17
restriction 55:16
result 21:25 22:2,10
30:15 32:3 34:1 71:17
77:25,25
resulting 34:5
results 21:7 26:2 27:12
29:4,14,14 31:9,11,16
32:19 72:23 75:14
76:8,10
resume 53:2
retained 36:25
retorting 27:23
revegetated 15:15
revegetation 76:23
reverse 58:18
review 11:7 12:12 13:17
15:21,23 16:1 40:12
69:11 82:7 84:25
reviewed 15:24,25
reviewing 10:16 44:22
reviews 13:22
revised 41:4
revision 80:4,5,11
rhetoric 18:7
Ridge 14:2 28:6
right 11:25 12:2 17:3
21:3 43:1 45:18 46:15
48:25 57:16 58:23
60:20 61:11,15 76:20
78:10 79:13 83:10
84:7,9 85:10
rightfully 67:19
rights 8:10 27:15 37:1
38:17,40:13
risk 19:25
risks 20:6
risky 20:1
River 24:5,12 25:2,15
26:6 27:6 37:15
Rivers 1:6 3:23 4:11 6:22
7:3 9:5 10:1 12:22,24
17:11,13,20 34:25
35:16,24 36:5 37:14,25
38:18,24 39:9,14,23
40:8,11 43:15 44:3,24
46:13 54:2,11 59:2

62:8 81.20 83:19 84:16 RL-1 27:3 47:6,7,9 60:3 Road 14:2 roads 50:25 Rob 3:18 4:12 12:23 17:16 rock 19:12,17 30:15 48:1 rocks 24:22 room 5:11 RPR 1:19 86:17 rule 50:15 52:2,14 53:17 55:3 61:3 ruled 24:23 rules 6:17 8:25 10:20 11:9 36:10 49:10 50:16,22 51:15,25 54:20 55:1 56:4,5,8,17 56:22 59:5 60:10 61:21,24 65:6,7 66:10 67:22,22 68:4,9,13,20 69:25 72:5 80:15 83:4 85:3 rulings 54:14 run 23:12 76:5 running 75:12 rush 21:21 Russell 2:24 13:12 32:21 46:4 R317-6-1.1 59:8 R347-4-106(8) 19:4 R347-4-109(1) 19:5 R647 9:1 65:7 72:5 R647-4-105 50:23 R647-4-106 50:2 R647-4-109 36:16 52:5 56:10 72:8,15 R647-5-106 8:21 10:23 83:13 R647-5-106(9) 9:13 R647-5-107 8:22	science 3:24 70:8 scientists 57:23,23 68:24 scope 6:19 scrutiny 55:20 se 51:17 seal 32:11 Seated 13:9 second 7:6 26:7 32:14 33:13 secondly 42:2 section 7:20,21,25 8:5,19 8:25 9:3,11,15 50:12 sections 14:4 40:22 41:21 Secure 7:17 see 21:16 23:3 53:7 62:21 63:10 64:18 67:8 71:7 81:9 seeing 44:6,8 seek 84:20 seeking 8:4 seen 19:15 62:20 seep 14:1 26:2 28:6 29:25 71:9 seepage 28:22 29:1,4,7 29:11,14,14 31:25 72:23 73:9,10 76:12 seeps 51:22 send 16:1 senior 68:23 sent 13:22 17:1 18:13 69:3 separate 33:2 62:12,13 65:4 September 39:25 41:5 seq 8:25 series 20:11 61:17 serve 48:14 82:15 set 18:22 36:19,20 37:24 38:11,12 39:16 40:21 53:24 79:15 setting 10:25 50:6 68:7 settled 21:1 settlement 34:1,5 settling 32:17 33:17 seven 81:20 several-year 15:9 shale 14:12,14,20 15:2 18:9,10 19:9,14 23:6 24:8 28:6 31:6 53:13 74:19 shallow 47:24 48:12 60:7 shallower 27:20 shallowest 24:14 shear 32:18 shop 15:11 short 45:9 shortcuts 21:19 shortly 60:4 show 7:12 23:5 37:19 76:10 shown 33:16,20 shows 28:4 35:22 39:3 sic 19:4,5 28:6 38:12 sides 33:8 77:7 signed 8:1 significant 22:22 24:21 38:7 48:14 76:13 significantly 33:15 similar 84:23 simple 18:19 36:9,16	42:4 simply 26:16 32:24 35:16 36:17 38:21 43:11,15 43:17 45:2 60:22 68:6 68:8 78:7 single 21:6 sir 62:15 sister 63:19 site 30:16 61:3 SITLA 2:21,23 sitting 20:15 six 26:10 33:21 38:5,6 59:21 65:13 size 20:12 21:6 55:25 slop 11:18 slow 5:21 small 5:11 26:23 38:4,6 47:11 71:20 72:13 smaller 70:24 SNELL 3:2 soil 14:10,17,24 15:14 28:17,25 30:24 42:20 53:11 55:9 57:22 74:17 solid 55:20 somewhat 5:12 58:14 62:12,13 70:16 83:22 Sonja 2:22 sorry 47:20 48:8 77:25 sort 43:24 45:12 63:16 72:21 sounds 13:2 17:3 source 37:20 60:6 south 3:3,6,19 13:25 48:11,16 southern 25:9 Southwest 1:8 6:10,18,25 speak 5:21 47:21 78:1 speaking 12:6 species 55:8 71:22 specific 43:13 51:16,16 52:18 54:23 56:6,9 61:3 specifically 7:15 17:18 31:17 32:4 33:7 41:5 42:14 52:8 61:21 65:23 69:19 73:9 specificity 72:23 specify 54:16 speed 66:11 spent 23:6 29:5,25 74:19 75:9 Spinti 7:17 16:11 spite 25:17 spot 56:22 spring 26:2 81:18 springs 25:21,24 26:5 37:19 39:20 50:25 51:7,11,17,22 59:7 square 20:12,20,20 ss 86:3 stacked 20:18 staff 13:13 19:19 54:10 56:12 58:2,5 65:13 70:4 standard 25:25 51:12,17 52:20 standards 52:12 76:23 80:16 standpoint 72:6	start 5:9,25 6:4 11:12 34:20 54:1 started 5:5 62:11 67:15 state 1:3 4:1 18:9 21:2 38:19 54:18 61:17 62:13 84:25 85:6 86:3 86:6 stated 20:10 76:18 statement 4:8 17:17 24:18 36:17 43:10 44:19 56:7 62:10 statements 13:18 17:13 26:24 29:15 34:22 38:25 49:2 54:12 states 24:13,19,19,25 26:4 27:22 32:10,16,24 33:11 40:7,8 50:2,24 51:6 64:11 66:22 69:19 statute 49:10 54:14 statutory 35:19 stay 33:11 steam 34:9 steel 14:19 stenotype 86:7 step 23:11 81:1 steps 21:14 Steve 4:18 12:9 13:19 48:25 54:3 77:9 78:16 79:25 82:20 STEVEN 2:10 stipulated 8:15 42:24 stockpiled 14:10 stop 78:10 stopped 60:4 storage 15:12 storm 52:15,16,17,18,19 straightforward 42:5 strategy 68:11 streamlined 18:5 streams 50:24 Street 3:6 stresses 32:15 33:8 34:6 strict 67:22 76:21 stripping 79:1 strips 51:1 structure 5:14 subject 55:19 62:3 79:24 submit 68:17 78:21 submittal 43:2 submittals 13:22 15:24 submitted 6:7 9:8 22:20 35:3,12,16 36:1 39:25 40:5,18 41:4 43:22 60:22 65:11 66:9 67:5 73:2,13,24 74:1 79:18 81:8,15 84:23 substantive 18:15 35:12 35:17 subsurface 47:25 51:3 52:8 55:6 72:9,17 succinct 17:14 sufficient 7:13 30:9 31:11 45:10 48:2 59:6 59:22 69:11 76:12 80:19 sufficiently 39:19 suggest 35:13 43:9 suggested 35:9 48:2 suggesting 79:16	suggestion 38:12 suggests 39:9 77:14 Suite 2:7,12 3:3,7,19 sum 41:7 summaries 33:2 summarizes 43:12 summary 27:14 28:10 34:11 36:21,23 38:15 39:2 45:2,14 sump 30:20 support 16:14 24:17 25:18 26:7 28:21 32:20 39:11 supported 75:22,23 supposed 54:16,17 surcharge 33:12 sure 5:23 15:16 19:2 46:1 46:8 55:20,22 57:24 58:13 65:17 76:16 78:3 82:19 surface 24:6,10,15 27:8 50:20 51:3 52:7,9,11 52:12,24 55:6,7 65:24 67:21 71:3,16,23,24 76:24 surprises 81:19 surprising 48:16 surrounded 14:23 surrounding 7:14 18:7 susceptible 7:5 27:22 37:7 suspenders 53:15 system 41:2 52:22 71:17 72:14 systematic 26:2 systems 31:19 52:9 55:8 71:21,22,24 72:11,12 72:19 80:18
--	--	--	--	--

T

tablet 16:24
tailor 66:6
take 9:25 11:13 17:25
19:13,18 21:19 23:11
38:21 44:13 45:21,24
46:12 82:25 83:20
taken 1:15 46:5 49:13
79:4 81:2 86:9
takes 83:6
talk 5:8 46:11,13 48:18
56:22 67:13 74:15
talked 64:11 66:1 72:22
74:13
talking 44:22 58:9 62:17
67:21 71:10 81:9
talks 60:11
tall 20:12,15
tandem 63:16
tar 18:9 19:9,15
task 17:20 18:1
Tavaputs 48:10
technical 11:23 43:24
52:23 67:19 72:23
technologies 19:14
Telephone 2:8,13 3:4,8
3:20
Tell 45:19
telling 56:8
temperature 32:4
Temple 1:15 2:6,11 3:3

A6016FC

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

ten 9:25 20:12 45:11 83:11	times 20:14,15 66:2 76:6	uniform 39:5	58:21 59:7,11,16,22	Yeah 11:17 45:13 52:5
tend 20:1	today 5:24,25 6:20 7:18	unique 19:16,16	60:2,4,5,25 61:6,6 62:4	53:10 62:8 65:16 66:1
tennis 77:4 79:22	16:10 17:20 18:14	unit 28:2,6 39:4	62:11,25 63:7 64:5,12	66:17 80:1 82:2,22
tens 70:23	19:6 22:16 44:7 63:11	units 59:3	64:24 65:14,24 66:22	year 29:7,9,12 47:12
tentative 6:8,23 16:4,5	70:4 81:8,25 83:10,14	University 16:12	66:24 67:18 68:1,15,21	76:13
16:18 17:1 22:5,20	84:12 85:12	unresolved 10:12	69:15,21,23 71:15,24	years 18:6 23:7 52:24
35:2 40:2,12 57:9	today's 9:19 19:25	unsupported 30:10	74:8 75:3 76:12 77:11	70:2,6
60:17,21 61:5 64:18	Tom 2:19 4:20 12:17	untested 31:8	78:5,14,19 79:3	yield 39:19 59:7
65:9,12 67:6 84:21	50:20 58:10,11 65:19	updated 39:25		
term 58:22 60:10	Tom's 54:4	upper 28:23 29:5,8,11		
terms 40:15 41:19 63:21	tone 5:11	uppermost 25:1 33:14		
76:13 81:7	top 15:6,15 18:2 20:18	urge 62:3		
test 31:14,16,22	27:4 28:25 47:10	usable 39:19 58:21 59:7		
testified 54:25	69:12	59:16,23 60:7		
testify 9:16 17:17	topsoil 79:1	use 5:17 56:12 58:14		
testifying 12:25	total 20:19 31:3	USGS 25:20,24 37:19		
testimony 10:17 43:3,25	totally 43:23 64:9 69:9	51:7,11		
69:2	Township 13:25	usually 78:17		
testing 21:8 32:20 33:1	traditional 19:12	Utah 1:3,8,16 2:5,7,10,12		
39:7	transcribed 86:7,10	3 4,7,20 4 1 7:20,21,25		
tests 27:12	transcript 5:17 81:21	8:5,19,20,21,24 9:1,2,3		
Texas 28:6	82:3 83:7	9:11,12,15 16:12 18:8		
thank 12:4 23:22 32:23	transcription 86:9	23:18 27:14 38:16		
34:15,23 53:1 82:17	transition 62:8	69:18 70:1 83:12 86:3		
83:14 84:11 85:10,11	transmission 51:1	86:6,13		
85:15,16	transmissivity 53:13	U.S. 29:3		
Thanks 81:3 84:4	transparent 84:25			
theirs 64:5	treatment 69:15			
Theoretically 78:25	true 68:2,20 86:9			
thereof 86:12	Trust 14:5			
thickness 31:3 32:14	try 5:18,22 10:10 11:3			
70:25	82:3			
thing 43:12 61:25	trying 11:18 16:23 21:19			
things 5:8 15:12 54:5,8	63:24			
56:2 58:20 65:22	turn 23:19 34:21 49:1			
72:24,25 74:12 79:8	50:18 58:17 63:18			
80:2 82:10	70:7			
think 11:15 12:5,10	Twenty 32:21			
13:13 16:15 17:8	two 6:14 10:10 15:24			
34:24 35:11 44:1,5	16:12 18:21 20:20			
45:15 47:2 48:19,23	22:19 28:7 36:11			
54:5,19 57:2,19 58:4	37:12 41:25 42:12			
58:20 61:9 62:19	62:21 65:4 66:2 67:1,5			
63:22 64:6 65:4 70:13	74:17 80:1,23			
70:18 71:12 72:18	two-fold 6:5			
73:15 75:20 77:7	two-hour 9:20,22 11:19			
79:13 81:24 83:15	type 56:1 61:2,25 62:5			
84:7,16 85:1,3	types 48:2 71:24 79:14			
thinking 74:16	typewritten 86:8			
third 1:21 7:7 27:13	typical 50:12			
thorough 26:2	typically 70:24			
thoroughly 40:17	T-A-V-A-P-U-T-S 48:11			
thought 49:3,4 52:23				
70:17 85:8				
three 14:4 20:15 25:17				
32:23 41:21 66:2				
74:17,24				
three-foot 14:18,24				
30:23				
Thursday 1:17 5:25				
tier 15:6 31:4 33:13,14				
time 1:18 5:21 6:14 8:6				
9:21,22 10:11,14 11:2				
11:19 34:21 37:5				
42:19,23 44:7,9,17				
45:9,20 46:5,6,7,22				
47:12 49:1 62:9 65:11				
74:22 75:1,12 76:25				
82:24 83:3				

A6016FC

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

16:20 36:23 41:5	8 50:5			
49:24	801 2:8,13 3:4,8,20			
2012 1:17 6:1 30:3 73:8	818 1:22			
86:14	84101-1531 3:4			
21 41:3	84102 3:20			
22 13:25	84111 3:7			
23 1:17 4:13 6:1 13:25	84116 2:7,12			
25 40:22 70:2,6				
250 24:10				
257-1900 3:4				
28 16:8				
28th 86:14				
29 52:23				
299 3:6				
3				
30 23:7 60:23				
30-day 35:15				
30-year 74:22				
300 2:7,12				
34 4:15				
350 24:15				
37 36:13				
38 36:13				
4				
40 31:2 32:14 33:19				
36:19 40:22				
40-8-1 8:25				
40-8-13(d)(3) 7:21				
42 36:19				
44,319 29:12				
45 31:2 32:14 33:19				
450,000 20:11				
47 4:16				
487-9911 3:20				
49 4:18,19 28:8				
5				
5 28:3 36:23 57:2				
50 4:20 20:17 28:2,13				
39:4				
500 1:21 51 4:22 53:14				
53 4:22 20:20				
534-4435 3:8				
538-7200 2:8,13				
549DM 50:10				
55 28:5				
551-7300 1:22				
6				
6 38:13				
600 3:19 24:15 27:8				
63G-4-103(f) 9:4				
63G-4-201 7:21				
63G-4-202(3) 8:6				
63G-4-203 8:19				
63G-4-203(1)(c) 9:16				
63G-4-203(1)(g) 9:12				
63G-4-207 8:1				
647-4-109 55:3				
68 20:17				
7				
7 74:6 76:6				
725 32:5				
73,772 29:9				
8				

BEFORE THE BOARD OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
IN AND FOR THE STATE OF UTAH

ORIGINAL

IN THE MATTER OF THE HEARING
ON LIVING RIVERS' PROTEST OF
RED LEAF RESOURCES' NOTICE OF
INTENTION TO COMMENCE LARGE MINE
OPERATIONS FOR THE SOUTHWEST #1 MINE,
M/047/0103, IN UINTAH COUNTY, UTAH.

TAKEN AT: Department of Natural Resources
1594 West North Temple
Salt Lake City, Utah

DATE: Thursday, February 23, 2012

TIME: 9:13 a.m. to 11:23 a.m.

REPORTED BY: Michelle Mallonee, RPR

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FILE #A6016FC

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3 John Nowoslawski, Manager of Unconventional Energy
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7 I N D E X

8 STATEMENT BY:	PAGE
9 THE DIVISION	
10 Paul Baker	13
11 LIVING RIVERS	
12 Rob Dubuc	17
13 Elliott Lips	23
14 RED LEAF RESOURCES	
15 Denise Dragoo	34
16 Bob Bayer	47
17 THE DIVISION	
18 Steve Alder	49
19 Leslie Heppler	49
20 Tom Munson	50
21	
22 DISCUSSION LEAD BY HEARING OFFICER BAZA	53
23	
24	
25	

1 P R O C E E D I N G S

2 (9:13 a.m.)

3 - - -

4 HEARING OFFICER BAZA: Folks, let's go ahead and
5 get started. Good morning to you all. My name is John
6 Baza, director for the Division. I'm the hearing officer
7 for this particular conference. Before beginning, I'm
8 just going to read a few things, talk a minute, and then
9 we'll start into the actual hearing portion of this.

10 First of all, I want to establish kind of the
11 tone of this meeting. This room is small by design. I
12 want it to be somewhat more intimate. I want it to be
13 more of a discussion and not necessarily a formal back
14 and forth, although I am creating some structure to this,
15 which you will hear about in just a minute.

16 The court reporter is here, but is principally
17 for my use. It's not necessary to have a transcript of
18 this, but I know it would be hard for me to try to look
19 back on this and work from written notes. So she's here.
20 She's going to be making note of what you say. If she
21 asks you to speak up at any particular time or slow down,
22 please pay attention to that. And we'll try to work with
23 her and make sure she's got a good record of what's
24 happening today.

25 Let me start by saying today is Thursday,

1 February 23, 2012. This hearing is being conducted at
2 the Department of Natural Resources Building in Salt Lake
3 City at -- well, it's almost 9:15 now. It was scheduled
4 to start at 9:00.

5 The purpose of the hearing is two-fold. First
6 of all, to provide an opportunity for those who have
7 submitted comments regarding the Division's conditional
8 tentative approval of the Red Leaf Resources' Notice of
9 Intention to commence large mine operations for the
10 Southwest #1 Mine M/047/0103, to present the basis for
11 their comments, and to provide the operator, the
12 applicant, and the Division a chance to respond to those
13 comments.

14 And two, within a reasonable time frame after
15 the hearing, I, as a hearing officer, will issue a final
16 appealable order, determining whether the applicant has
17 met the relevant rules and a Final Notice of Intention
18 should be approved for the Southwest #1 mine.

19 The scope of the information and comments that
20 we are going to receive today during this proceeding, I'm
21 going to limit to those comments that were presented in
22 the November 18, 2011, Living Rivers' protest to the
23 tentative decision to approve the Notice of Intention to
24 commence large mining operations for the Red Leaf
25 Resources Southwest #1 mine. And I'm going to list those

1 four identified areas for you that were included in that
2 letter to the Division.

3 First, Living Rivers alleges that, "The NOI
4 fails to account adequately for the possible existence of
5 susceptible groundwater resources in the area of the
6 mine. Second, the NOI fails to account for the possible
7 impacts to groundwater in the area of the mine. Third,
8 that there's no evidence that Red Leaf intends to obtain
9 or that DOGM intends to require a groundwater permit from
10 the Division of Water Quality, as required by DWQ
11 regulations. And fourth, the NOI fails to provide
12 adequate information to show that the design of the
13 EnShale capsules will be sufficient to prevent leakage of
14 petrochemicals into the area surrounding the mine, and
15 specifically into local perched groundwater aquifers.

16 There was also a comment presented from Jennifer
17 Spinti, of the Institute for Clean and Secure Energy. I
18 do not believe she is here today, so I am going to forego
19 that comment regarding that letter that we received.

20 So pursuant to Utah Code Annotated Section
21 40-8-13(d)(3) and Utah Code Annotated Section 63G-4-201,
22 the Division noticed the hearing as a formal hearing.
23 And this hearing will commence as a formal hearing before
24 the Division.

25 Pursuant to Utah Code Annotated Section

1 63G-4-207, "Any person may file a signed written petition
2 to intervene in a formal proceeding." To date, the
3 hearing officer has not received the written petition
4 from anyone seeking to intervene in this proceeding.

5 Pursuant to Utah Code Annotated Section
6 63G-4-202(3), "Any time before a final order is issued,
7 the presiding officer may convert a formal adjudicated
8 proceeding to informal adjudicated proceeding if it is in
9 the public interest and does not unfairly prejudice the
10 rights of any party."

11 As hearing officer, I've determined that
12 converting this hearing from formal hearing to informal
13 hearing is in the public interest and does not unfairly
14 prejudice the parties. Additionally, the parties have
15 stipulated to the conversion and have agreed that the
16 formal notice satisfies any relevant notice requirements
17 for the informal hearing.

18 So, the hearing will be conducted informally
19 pursuant to Utah Code Annotated Section 63G-4-203,
20 Procedures for Informal Hearing; Utah Administrative Code
21 R647-5-106, Procedures for Informal Phase; Utah
22 Administrative Code R647-5-107, Exhaustion of
23 Administrative Remedies.

24 In the event there is a conflict between Utah
25 Code Section 40-8-1 et seq. and Implementing Rules for

1 Large Mining Operations at Utah Administrative Code R647,
2 the Utah Administrative Procedures Act shall govern.

3 Pursuant to Utah Code Annotated Section
4 63G-4-103(f), the parties to this hearing are the
5 protestants, Living Rivers, through their representative
6 Western Resource Advocates; the applicant, Red Leaf
7 Resources; the Division of Oil, Gas and mining; and then,
8 of course, any agreed person who submitted and was
9 granted intervention prior to conversion of the
10 proceeding from formal to informal, which there are none.

11 Pursuant to Utah Code Annotated Section
12 63G-4-203(1)(g) and Utah Administrative Code
13 R647-5-106(9), intervention in this informal proceeding
14 is prohibited.

15 Pursuant to Utah Code Annotated Section
16 63G-4-203(1)(c), "The parties shall testify, present
17 evidence, and comment on the issues presented in their
18 previous comments to the Division."

19 So the procedure for today's hearing will be as
20 follows -- and frankly, I'm limiting this to a two-hour
21 time frame. And I'm going to ask the parties to minimize
22 their comments to that two-hour time frame in this order:
23 First, I'm going to ask the Division to provide a brief
24 history of the permit leading up to this hearing, which I
25 anticipate should take ten minutes or less. Then I'm

1 going to ask Living Rivers to present the basis for their
2 comments and their protest. And I'm going to ask them to
3 do that in approximately 20 minutes. And then I'm going
4 to ask Red Leaf Resources to have an opportunity to
5 address those comments. And I'm also going to ask that
6 you do that in 20 minutes. And then finally, I'm going
7 to allow the Division to have an opportunity to address
8 the comments in an additional 20 minutes.

9 Now, recognizing that there may be some leeway
10 in that and that we're going to try to do this in two
11 hours, hopefully there will be a little bit of time left
12 to resolve any unresolved issues.

13 Earlene, I'm going to ask you to help me with
14 some time keeping here, if you could.

15 So post hearing: After the hearing, and
16 reviewing the information in the Division's file at the
17 date of the decision, the evidence and testimony
18 presented, and any additional information requested, the
19 hearing officer will issue an order determining whether
20 the applicant has met the relevant rules and whether a
21 final permit shall be approved. After the issuance of a
22 final order by the hearing officer, the parties may
23 appeal the decision, pursuant to R647-5-106 part 17.

24 I would also again indicate to you that this is
25 informal. It is an intimate setting. I would ask

1 parties to be respectful of each other's comments. And
2 note that we have some time frames that we're going to
3 try to constrain ourselves to.

4 But also that, in my own opinion, the purpose
5 that I would hope to achieve out of this as a hearing
6 officer is determining was there anything in the
7 Division's performance of the analysis and their review
8 of the application that was not in accordance with the
9 rules that we need to correct? And that's my principal
10 purpose for wanting to do this hearing.

11 So let me ask: Does anybody have any questions
12 before we start?

13 MR. DUBUC: Mr. Baza, we may take, if we may, a
14 few more than 20 minutes. Just we weren't prepared for
15 that limitation. I don't think it will be much more,
16 perhaps five minutes, if that would be acceptable.

17 HEARING OFFICER BAZA: Okay. Yeah. I know
18 there's going to be some slop here. I'm just trying to
19 keep it within that two-hour time frame.

20 MR. DUBUC: Okay.

21 MS. DRAGOO: Mr. Hearing Officer, we had a
22 question, too, about in the event that there's something
23 technical and new that's brought up and it looks like we
24 need to convert back to a formal hearing, we would
25 reserve that right. So say that it looks like there's

1 some new issue that needs discovery, or something like
2 that, we would reserve that right.

3 HEARING OFFICER BAZA: I understand.

4 MS. DRAGOO: Thank you.

5 HEARING OFFICER BAZA: I think we probably
6 should introduce the people speaking for the parties.
7 First of all, for the Division, I assume it will be
8 principally Mr. Alder?

9 MR. ALDER: Steve Alder. I'll be appearing
10 for -- helping the Division; although I think we'll
11 handle it pretty much individually by the Division people
12 who did the review. They'll make their own comments as
13 appropriate. Paul Baker will do a brief introduction of
14 the mine first.

15 HEARING OFFICER BAZA: Okay.

16 MR. ALDER: With Paul, we have -- I could
17 introduce the people. Leslie and Tom will be addressing
18 the hydrologic issues.

19 HEARING OFFICER BAZA: Okay. And when you make
20 your comment, I'll ask that you give your full names so
21 the court reporter can pick that up.

22 And then for Living Rivers, it will be?

23 MR. DUBUC: Yes, good morning. I'm Rob Dubuc.
24 I'm counsel for Living Rivers. This is Elliott Lips, who
25 will be testifying. And my colleague, Joro Walker, will

1 be here as well.

2 HEARING OFFICER BAZA: Sounds great.

3 And for Red Leaf Resources?

4 MS. DRAGOO: Denise Dragoo, here on behalf -- as
5 counsel for Red Leaf Resources. Laura Nelson, as company
6 representative. Fran Amendola, who prepared the Notice
7 of Intent on behalf of Northwest. And Bob Bayer, who is
8 our hydrologist and geologist.

9 HEARING OFFICER BAZA: Seated next to me is
10 Emily Lewis from the Attorney General's office, who will
11 be assisting me as legal counsel as a hearing officer.
12 Then in the back is Earlene Russell, who is just going to
13 staff the meeting for me. I think that identifies pretty
14 much everybody who wants to participate in the hearing.

15 So why don't we go ahead and have, first of all,
16 the Division present a brief history of the application
17 and the permit review.

18 STATEMENTS FROM THE DIVISION

19 MR. BAKER: I'm Paul Baker. And Steve Alder
20 asked me to present a brief history and overview of the
21 mine. I apologize that I didn't look up exact dates for
22 when submittals were received and reviews were sent, but
23 I'll do the best I can.

24 The mine is in -- the proposed mine is in
25 Township 13 South, Ranges 22 and 23 East in Uintah

1 County. It's in central Uintah County near the Seep
2 Ridge Road.

3 The operator is proposing to mine -- the entire
4 proposed disturbed area is 1477 acres on three sections
5 of land. It's primarily land that's owned by the Trust
6 Lands Administration, although there is private
7 inholding.

8 Just a general overview of what would happen in
9 a mining operation. First, the land would be cleared.
10 Soil would be removed and stockpiled. There would be
11 pre-stripping of overburden where required and that
12 material would be removed. And the oil shale ore would
13 be blasted, removed, crushed in preparation for
14 constructing cells, capsules where the oil shale would be
15 processed. And once these capsules are basically
16 excavated, the operator would put in a layer of what they
17 call bentonite amended soil, or BAS. It would be a
18 three-foot layer of BAS. And that would be covered on
19 the bottom by a steel pan. And that would then be
20 covered by 13 feet of gravel. And then the oil shale ore
21 would be put back into the capsule and -- crushed and put
22 back into the capsule. And the entire capsule would be
23 surrounded by this 13 feet of gravel, and on the outside,
24 the three-foot area of bentonite amended soil.

25 As the ore is put back into the capsule, there

1 are also pipes that are put in that would help -- or that
2 would be used to heat the oil shale ore. And then they
3 would go through the process of heating that and
4 extracting oil or the kerogen. And once the capsule
5 was -- once that process was complete, eventually there
6 would be another tier, another level put on top of that
7 one. And basically, the process would be repeated. And
8 this process of constructing the capsules proceeds over a
9 several-year period.

10 Like I say, covering that 1400 or so acres,
11 there would also be a shop and office buildings, oil
12 storage facilities, things like that.

13 When once the capsules have been allowed to
14 cool, they will be graded and then soil will be placed on
15 top of them, and the area reseeded and revegetated. I'm
16 sure we'll be getting into more details of exactly what
17 the mining operation will be. But that's kind of the
18 basis of it.

19 The Division originally received the application
20 in April of 2011. And I don't remember exactly what
21 month the first review went out -- a few months later. I
22 said I didn't look up those dates, and I apologize for
23 that. And following that review, the Division received,
24 I believe it was two more submittals that were reviewed.
25 And they were reviewed really more informally than with a

1 formal review. We didn't send another formal review
2 letter. Rather, we communicated with the operator. And
3 they made a few changes to the application until the
4 Division issued a tentative approval, a conditional
5 tentative approval, in October of 2011. That then went
6 to public notice. And it was published in Salt Lake City
7 and Vernal newspapers.

8 The public notice period ended November 28,
9 2011, and the Division received several letters: The one
10 that we're discussing today, of course, from Western
11 Resource Advocates; a comment letter from Jennifer Spinti
12 from the University of Utah; we received two letters from
13 the Governor's Resource Development Coordinating
14 Committee; and several letters in support of the project.

15 I think that's the basis of what I would have to
16 present.

17 HEARING OFFICER BAZA: Okay. And did you
18 mention the date upon which you issued the tentative
19 approval and when that notice went out?

20 MR. BAKER: That was in October of 2011. Again,
21 I don't have the exact dates.

22 HEARING OFFICER BAZA: Okay. Excuse me for just
23 a minute. I'm just trying to pull up information on my
24 tablet here.

25 On the 20th of October, it looks like the

1 tentative decision to approve was sent out by the
2 Division.

3 MR. BAKER: Okay. That sounds about right.

4 HEARING OFFICER BAZA: Okay. Anything else,
5 Paul or the Division?

6 MR. ALDER: No.

7 HEARING OFFICER BAZA: Okay.

8 MR. BAKER: No, I don't think so. Not for now.

9 HEARING OFFICER BAZA: Why don't we go ahead,
10 and I believe the next item I indicated is we would hear
11 from Living Rivers, Mr. Dubuc. And again, 20 minutes,
12 but we'll allow for some leeway there.

13 STATEMENTS FROM LIVING RIVERS

14 MR. DUBUC: We will be as succinct as possible.

15 Good morning, Mr. Baza. As I said, my name is
16 Rob Dubuc. What I will do is I have a brief prepared
17 opening statement. And then Mr. Lips will testify on a
18 few issues, specifically those addressed in our comment
19 letter.

20 Living Rivers' task today is admittedly a
21 difficult one, and that's to convince you to overturn
22 your agency's decision to recommend approval of Red
23 Leaf's NOI; to say, more or less, that your agency made a
24 mistake; and to direct your agency personnel go back and
25 redo the recommendation. No agency director would take

1 such a task lightly.

2 On top of that, there is the pressure that the
3 industry is bringing to allow it to develop these
4 resources as quickly as possible. Red Leaf wants
5 certainty. They want a streamlined permitting process,
6 and they want approval in months, not years. We're all
7 aware of the political rhetoric surrounding development
8 of these resources, that Utah is the Saudi Arabia of oil
9 shale, that the state is open for business for tar sands
10 and oil shale development, and that we need to push for
11 mining these resources to help free our country from its
12 dependence on foreign oil.

13 In a letter sent to you a few weeks ago, Red
14 Leaf contends that we shouldn't even be here today, that
15 our concerns are non substantive, that all the issues
16 that we raise relate to groundwater quality, and that
17 these issues can and will be dealt with through the
18 groundwater discharge permit process at DWQ.

19 But as you know, it's not that simple. While
20 there is overlap between the oversight provided by the
21 two agencies, when it comes to issues such as impacts to
22 groundwater, each of those agencies has its own set of
23 regulations and its own requirements to account for any
24 possible impacts to the environment, including
25 groundwater.

1 As we noted in our protest, for your agency,
2 those requirements require you to make sure that the NOI
3 adequately accounts for both presence of groundwater,
4 under R347-4-106(8) (sic), and for the impacts of that
5 groundwater, under R347-4-109(1) (sic). And it is those
6 regulatory responsibilities that bring us here today.

7 Let me make a brief editorial aside about the
8 regulatory framework that your agency is using to
9 regulate oil shale and tar sands. In the current
10 regulations, both of these come under the heading "Non
11 Coal" -- regulations that work much better for more
12 traditional hard rock mining. Unfortunately, the non
13 coal regs don't take into account the experimental nature
14 and the new technologies associated with oil shale and
15 tar sand mining. As we've seen so far, each of these
16 proposed mines is unique, not just from -- unique not
17 just from hard rock mining but from each other. And I'd
18 like to take this opportunity to request a meeting with
19 you and your staff in the next few months to discuss some
20 possible changes to these regulations that would be a
21 better fit for these new industries.

22 Now, I understand that companies such as Red
23 Leaf would prefer not to have their activities
24 characterized as "first of a kind" or "experimental"
25 because both of these labels imply risk. In today's

1 economic climate, risky ventures tend to scare away
2 investors. But those labels are accurate. The process
3 that Red Leaf has proposed has never been done before on
4 any scale, let alone the one outlined in the NOI. It is
5 first of a kind and it is experimental. And as Mr. Lips
6 will outline, the risks associated with it are not
7 limited to economic ones.

8 You've been provided a brief outline of Red
9 Leaf's proposal, but let me put it in some perspective.
10 In its NOI, Red Leaf has stated that it plans to build a
11 series of capsules. Each capsule will cover 450,000
12 square feet over ten acres in size, 130 feet tall. To
13 give you some perspective on the scale, that's a capsule
14 that's 12 1/2 times as large as the building we're
15 sitting in and three times as tall. But the proposal is
16 not to build one of those capsules, it's to build 118 of
17 them, 68 of the capsules in the bottom layer and 50
18 additional capsules stacked on top of that bottom.
19 That's a total of 1219 acres worth of capsules covering
20 over 53 million square feet, almost two square miles.

21 Underlying virtually all the company's claims
22 that this process is environmentally -- is that this
23 process is environmentally benign, that these capsules
24 are safe and that they will not leak petrochemicals and
25 leechate into the environment, either during the heating

1 process or once the capsules have cooled and settled.

2 Let me state flat out we dispute that claim and
3 we dispute the company's right to make it. Fact of the
4 matter is that the closest the company has come to
5 building one of these capsules is a pilot project
6 approximately 1/10th of the proposed size of a single one
7 of these capsules. Without disclosing results of
8 whatever testing the company did on that pilot project or
9 proposing a conservative protective approach, it now
10 makes the claim that not only will these capsules work
11 for their intended purpose, but that the capsules will be
12 impermeable. And they're asking you to allow them to go
13 from a 1 1/2 acre pilot project to a 1219 acre production
14 with no steps in between. There's no plan for ramp-up of
15 the scale of this project or to build several scale-sized
16 capsules to see if they will work as designed. Instead,
17 Red Leaf wants it all and they want it now.

18 The fact of the matter is that the company is
19 pushing too hard and it's trying to take shortcuts
20 through the approval process. Let me give you an example
21 of how Red Leaf's rush to obtain approval has been
22 counterproductive.

23 Your agency based its decision to approve the
24 NOI, in part, on Red Leaf's assertion that, "The
25 operation of the proposed capsules will not result in

1 discharge of pollutants nor is it probable that discharge
2 will result; therefore, Red Leaf does not believe that it
3 has a duty to apply for a groundwater discharge permit."

4 Several weeks before your agency issued its
5 tentative approval of the NOI, DWQ notified both the
6 company and your agency that a complete groundwater
7 permit application would, in fact, be required. In other
8 words, your agency's approval was premised on incorrect
9 information; namely, that DWQ agreed with Red Leaf that
10 no discharge of pollutants would result, based on the
11 capsule design.

12 Not only that, because your agency relied on
13 that premise, your personnel was deprived of the
14 information they needed to fulfill DOGM's regulatory
15 obligations, information that's still being provided to
16 DWQ today. But that's directly pertinent to determining
17 if this proposal will impact groundwater in the area of
18 the mine.

19 A full two months after you issued your
20 tentative approval, Red Leaf submitted a 195-page
21 groundwater application to DWQ. That application
22 contains a significant amount of information that wasn't
23 contained in the approved NOI, but that your agency
24 should have had before it made its recommendation to
25 approve this mine. Even with that additional

1 information, DWQ has not only asked Red Leaf to provide
2 more information, but it's also asked the company to
3 expand its modeling to see what the long-term effects on
4 groundwater would be.

5 The company's data show, for instance, that the
6 spent shale will generate high pH leachate. And the
7 model that the company ran only went out to 30 years.

8 As I noted, Mr. Baza, this is information that
9 your agency should have had before it made its
10 recommendation to approve the mine. At a minimum, we are
11 asking you to take a step back and allow the permitting
12 process to run its course and to allow DWQ to obtain the
13 information it needs to make its decision.

14 But ultimately, we're asking you to direct your
15 personnel to reconsider their recommendation in light of
16 this new information so that any recommendation they make
17 is as informed as possible. To do anything else would be
18 a violation of your obligation under Utah law.

19 At this point, I'll turn to Mr. Lips, who will
20 outline in detail why the NOI fails to meet DOGM's
21 regulatory requirements.

22 MR. LIPS: Thank you, Mr. Baza. I appreciate
23 the opportunity to present these comments. I am Elliott
24 Lips, for the record.

25 The information presented in the NOI is

1 insufficient to conclude that there are not groundwater
2 resources that will be impacted by the proposed mining
3 operation.

4 As a way of background, a little bit on the
5 geology. The Parachute Creek Member of the Green River
6 Formation is the surface bedrock formation throughout the
7 majority of Red Leaf parcels. This member contains the
8 Mahogany Oil Shale zone from which the raw ore would be
9 extracted. Open-pit mining operations would extend to a
10 depth of 250 feet below the ground surface. Underlying
11 the Parachute Creek Member is the Douglas Creek Member of
12 the Green River Formation.

13 The groundwater permit application states that
14 the depth to the shallowest occurrence of groundwater
15 known is 600 feet below the ground surface and 350 feet
16 below the bottom of the open pit. However, there's
17 insufficient information in the NOI to support this
18 statement and, in fact, some information that contradicts
19 it. The NOI states that it is unlikely -- only states
20 that it is unlikely that the Parachute Creek and Douglas
21 Creek contains significant quantities of water, although
22 the NOI acknowledges that its presence in these rocks can
23 not be ruled out.

24 On a regional basis, the groundwater permit
25 application states that the Douglas Creek Member

1 potentially contains the uppermost aquifer in the Green
2 River Formation in the eastern Uinta Basin. In fact, as
3 reported in both the NOI and the groundwater permit
4 application, the BLM considers both the Parachute Creek
5 and Douglas Creek Members as key aquifers in the general
6 Uinta Basin area. Furthermore, the groundwater permit
7 application acknowledges the presence of groundwater in
8 the Douglas Creek aquifer and discusses the movement and
9 areas of discharge in the southern and northern parts of
10 the Uinta Basin.

11 And finally, the groundwater permit application
12 provides data from nearby wells that have identified
13 groundwater occurrence that, "Likely reflect localized
14 perched aquifers associated with lenses of permeable
15 bedrock in the Douglas Creek Member of the Green River
16 Formation."

17 In spite of this, the NOI provides three lines
18 of evidence in support of their conclusion for the
19 absence of groundwater in the Parachute Creek and Douglas
20 Creek. First, the NOI reports that there are no USGS
21 mapped springs issuing from either of these members in or
22 near the parcels. This is insufficient evidence upon
23 which one can conclude that there are no aquifers. Not
24 all springs are mapped by the USGS. And this is not the
25 standard for determining the presence or absence of

1 groundwater. More importantly, the NOI does not contain
2 the results of a thorough, systematic seep and spring
3 inventory of the parcels and nearby areas.

4 Furthermore, the NOI states -- citing Price and
5 Miller, a published report -- discussing springs issuing
6 from the Green River Formation.

7 The second line of evidence in support of their
8 conclusion for absence of groundwater, the NOI reports
9 that exploration drilling by Red Leaf Resources did not
10 encounter groundwater. Six holes were drilled for a
11 proposed 1656-acre mine area, which is insufficient to
12 establish the presence or absence of groundwater. The
13 NOI did not contain the drill logs, so it's not possible
14 to know what was or was not recorded during drilling.

15 Often during exploration drilling, the driller
16 or geologist simply does not make observations one way or
17 the other regarding the presence or absence of
18 groundwater. If this is the case, the lack of
19 observation of groundwater does not allow one to conclude
20 that there's an absence of groundwater. In fact, the
21 groundwater permit application reports that the holes
22 were drilled with water as a circulation medium and that
23 small quantities of water might not have been observed.

24 In addition, the statements made by Red Leaf in
25 the NOI that the wells did not encounter groundwater is

1 contradicted by the recent groundwater permit
2 application, which reports that water was encountered
3 during drilling in one hole, RL-1, in fractures near the
4 top of the hole. This confirms the presence of
5 groundwater in the Parachute Creek Member of the Green
6 River Formation.

7 The groundwater permit application reports water
8 at 600 feet below the ground surface in the Red Leaf
9 water well; however, neither the NOI nor the groundwater
10 permit application provide information about this well,
11 such as its location, a geologic log, how the well was
12 completed, or results of aquifer tests, if conducted.

13 The third line of evidence provided in the NOI
14 is a summary of nearby wells on file with the Utah
15 Division of Water Rights. This provides little pertinent
16 information to the question of aquifers in the parcels to
17 be mined by Red Leaf because there are no drill logs, no
18 information on the geologic formations in which the wells
19 were completed, and no information on groundwater that
20 was encountered at shallower depths.

21 With regard to projected impacts to groundwater,
22 the NOI states that, "Groundwater is not susceptible to
23 any impacts from the mining and retorting operations
24 because it is isolated from these operations by several
25 hundred feet of low permeability marlstones."

1 However, the NOI also reports that the first
2 porous unit occurs approximately 50 to 100 feet below the
3 Mahogany in the Douglas Creek Member. In fact, Figure 5
4 of the groundwater permit application shows the Douglas
5 Creek Member approximately 55 feet below the Mahogany oil
6 shale zone. In the Texas (sic) Seep Ridge Unit No. 2
7 well, less than two miles west of the Red Leaf Resources,
8 reports the Douglas Creek Member 49 feet below the
9 Mahogany.

10 In summary, the record is incomplete. And what
11 information exists indicates that there is the potential
12 for groundwater in localized perched aquifers in the
13 Douglas Creek Member approximately 50 feet below the
14 floor of the proposed mine and/or in fractures in the
15 Parachute Creek Member.

16 Red Leaf relies on the presumption that the
17 capsule design, particularly the bentonite amended soil,
18 or BAS layer, will prevent migration of fluids from the
19 ore. This presumption is key to Red Leaf's belief that
20 there will be no impacts to water resources.

21 In support of the groundwater permit
22 application, Red Leaf evaluated seepage of precipitation
23 through the upper BAS layer that will occur after the
24 mining has ceased and the capsules are reclaimed with a
25 cover of overburden and vegetated top soil.

1 The seepage was evaluated using the Hydrologic
2 Evaluation of Landfill Performance, or HELP computer
3 program, from the U.S. Army Corps of Engineers. The
4 results of Red Leaf's analysis indicate that seepage of
5 precipitation through the upper BAS layer into the spent
6 ore will be, for the base reclaim case, 1683 gallons per
7 year per capsule. For the non-vegetated case, seepage
8 and precipitation water through the upper BAS layer will
9 be 73,772 gallons per year per capsule. They also looked
10 at a case of increased precipitation. Under that
11 scenario, the seepage through the upper BAS layer is
12 44,319 gallons per year per capsule.

13 First, the NOI does not discuss any of these
14 seepage analysis results. In fact, these seepage results
15 completely contradict statements made in the NOI that,
16 "The capsules are designed to be fully contained." And,
17 "fully isolated from the environment by design, both
18 during operation and following reclamation." And, "water
19 will not enter the hydrocarbon recovery zone of the
20 capsules."

21 More importantly, Red Leaf did not evaluate the
22 quantity of leechate that will percolate through the
23 lower BAS layer. Clearly, the BAS layer is not
24 impermeable. So it's logical to conclude that water will
25 seep down through the spent ore and ultimately through

1 the lower BAS layer. In fact, the DWQ recognizes that
2 this is possible. And in a letter to Red Leaf Resources
3 dated February 10, 2012, instructed Red Leaf to conduct
4 additional analysis using the HELP model to evaluate this
5 exact scenario.

6 It's clear that even under the best-case
7 conditions, that in which the BAS layer remains intact
8 during the heating and extraction process, Red Leaf's
9 underlying presumption that the capsules are sufficient
10 to prevent migration of fluids is unsupported by their
11 own data and analysis. Furthermore, the NOI fails to
12 provide information that the BAS layer will remain
13 intact.

14 Red Leaf proposes to recover the oil that is
15 liberated from the rock as a result of being heated in
16 capsules constructed on site. The crushed ore will be
17 placed in the capsule in layers with heat-conducting
18 pipe. The liberated oil will be collected in pipes and
19 in a pan at the bottom of the capsule and directed to a
20 sump.

21 Red Leaf claims that all of the oil and volatile
22 hydrocarbons will be contained by constructing the
23 capsules with a three-foot layer of bentonite amended
24 soil, BAS, and a 13-foot layer of gravel between the BAS
25 and the ore.

1 During the heating and extraction process, the
2 ore in the capsule loses approximately 40 to 45 feet in
3 total height. The initial thickness of the ore in each
4 tier is 100 feet.

5 This method of recovering hydrocarbons from oil
6 shale is a new concept that has never been demonstrated
7 at the scale that Red Leaf proposes. In order to
8 evaluate this new and untested design, the Division and
9 the public must rely on either the results of a pilot
10 project using the same construction and operation or on
11 the results of sufficient and appropriate laboratory
12 analysis and modeling. Unfortunately, the NOI fails to
13 provide information on either of these.

14 Red Leaf has constructed a test facility under
15 its exploration permit. However, the NOI contains no
16 information about the results of this test facility.
17 Specifically, there is no report of the evaluation of the
18 capsule design. No discussion of potential scaling
19 effects. No discussion of the liner or liner systems
20 that were used and how they might differ from what is
21 currently being proposed. No discussion of the geometry
22 of the test capsules. No discussion of the BAS and how
23 it was constructed. No analysis of the integrity of the
24 BAS during heating and extraction. And most importantly,
25 no evaluation of any seepage from the capsules.

1 The NOI is further incomplete because it does
2 not address the loss of integrity of the proposed BAS as
3 a result of the heating and extraction process.

4 Specifically, the ore will be heated to a temperature of
5 725 degrees Fahrenheit. The NOI does not discuss the
6 impact that this will have on the integrity of the BAS.

7 In fact, Norwest, one of the Red Leaf's consultants,
8 recommended that this exact issue be evaluated.

9 Furthermore, Red Leaf acknowledges that the integrity of
10 the BAS is compromised by heat and states, "To keep the
11 BAS seal functioning, the BAS needs to be protected from
12 the heat that is introduced into the capsules from the
13 heating pipes."

14 Second, a loss of 40 to 45 feet in thickness in
15 the ore will exert stresses on the BAS. The groundwater
16 permit application states that the knuckle design will
17 keep the BAS in compression during and after settling,
18 and thereby prevent shear failures. However, Red Leaf
19 has not provided the results of any geotechnical analysis
20 or testing to support this assumption.

21 MS. RUSSELL: Twenty minutes has expired.

22 MR. LIPS: Okay. I have just a few more
23 minutes. I have, like, three minutes. Thank you.

24 The groundwater permit application simply states
25 that, "The information provided below on laboratory

1 testing, pilot capsule investigation, and modeling are
2 high-level summaries of separate investigations and
3 reports."

4 Without providing the actual reports, it's not
5 possible for the Division, DWQ, or the public to evaluate
6 the validity of the claims made by Red Leaf.

7 Specifically, Red Leaf fails to demonstrate how
8 compressive stresses will extend from the sides of the
9 BAS to the center over distances of up to 900 feet.

10 In addition, the groundwater permit application
11 states that the BAS layer is predicted to stay intact, in
12 part due to the surcharge load from the weight of the
13 second tier capsule. This load would not exist for the
14 uppermost tier, and thus, compression of the BAS would be
15 significantly reduced.

16 As described and shown in the drawings in the
17 NOI, the BAS will remain intact during the settling of
18 the ore. It is not possible to reduce the volume of the
19 ore by 40 to 45 feet and not cause displacement of the
20 BAS. As shown by Red Leaf, the BAS would have to undergo
21 an approximate six percent volumetric change in order to
22 remain intact. The documents do not contain an analysis
23 of how this volumetric change, if it actually occurs,
24 will affect integrity of the BAS. If the BAS does not
25 undergo a volumetric change, there will be cracks as a

1 result of differential settlement and movement to
2 accommodate the displacement of the BAS. This movement
3 of the BAS will compromise its integrity.

4 The NOI does not discuss how the differential
5 settlement of the ore in the capsules and the resulting
6 stresses it will apply to the BAS will affect the
7 integrity of the BAS. The NOI does not discuss the
8 effect that the volatile organics, gas pressure, or
9 degradation by steam and/or saline or alkaline fluids
10 will have on the BAS.

11 In summary, the information presented in the NOI
12 is insufficient to conclude that the integrity of the BAS
13 will not be compromised during the heating and extraction
14 process or an evaluation of what impacts will occur if
15 the BAS integrity is compromised. Thank you.

16 MR. DUBUC: That concludes our prepared remarks.
17 Do you have any questions?

18 HEARING OFFICER BAZA: You know, I do have some
19 questions. But I am going to wait to hear from both Red
20 Leaf and the Division before I start asking that.

21 So Denise, I'll turn the time over to you.

22 STATEMENTS BY RED LEAF

23 MS. DRAGOO: Great. Thank you, Director Baza.

24 I think the fatal flaw in the discussion that
25 we've just heard is the failure of Living Rivers to

1 acknowledge that the groundwater discharge permit is a
2 condition to the October 20th tentative decision. For
3 some reason, the comments submitted on November 18th,
4 which was nearly a month later, don't even acknowledge
5 the fact that Condition No. 1 of that October 20th
6 decision was that Red Leaf should go ahead and obtain the
7 groundwater discharge permit from the Division of Water
8 Quality. Despite that fact, they presented those
9 comments and suggested that, in fact, Red Leaf was not
10 going to obtain the groundwater discharge permit.

11 We think that was such a fatal flaw that the
12 comments submitted were not even substantive. And we
13 suggest, in fact, that the Division should have gone
14 ahead and finalized the Notice of Intent in November
15 following the end of the 30-day comment period because
16 the comments submitted by Living Rivers were simply not
17 substantive.

18 Overall, Red Leaf contends it has met the
19 statutory requirements and the regulatory requirements,
20 which were much more narrowly focused than those
21 discussed by Mr. Lips. We've prepared a response, which
22 I'll provide to you here, in writing which shows the
23 excerpts from the NOI and the groundwater permit that
24 address concerns. Living Rivers fails to acknowledge the
25 fact the groundwater permit application has been

1 submitted as an appendix to the NOI. It's Appendix S.
2 And we've attached that as Exhibit D to our materials.

3 But just going through our response, we just
4 have gone through item by item the four issues that
5 Director Baza raised and are raised in the Living Rivers
6 letter.

7 Going through that, first, the question about
8 whether the NOI adequately accounts for local groundwater
9 resources. And basically, this is a very simple
10 requirement under the Division's rules. There are just
11 two requirements. First, identification of depth to
12 groundwater. That's identified -- if you look at Exhibit
13 B of your packet, the NOI, pages 37 through 38 identify
14 those -- the depth to groundwater.

15 In addition, Red Leaf meets the requirements,
16 simple requirements, of R647-4-109, which require an
17 impact statement and simply require that the operator
18 provide a narrative description of the groundwater
19 impacts. Those are set forth at pages 40 through 42,
20 attached as Exhibit C -- very clearly set forth.

21 The Division issued an executive summary
22 confirming that Red Leaf had met these requirements.
23 That executive summary, dated October 5, 2011, is
24 attached as Exhibit E. It confirms that the records of
25 the nearby wells, which are retained by the Division of

1 Water Rights, reflect the depth of the groundwater. And
2 it's reflected in 2(d), "Isolated Perched Aquifers," as a
3 1312-foot deep well. So they identified the depth of
4 groundwater. That's all that is required.

5 In addition, the Division confirmed at that time
6 and agreed with Red Leaf's conclusion that groundwater is
7 not susceptible to mining operations because it's
8 isolated by several hundred feet of low permeability
9 marlstone.

10 So it was very clear that Red Leaf met the
11 requirements, and the Division properly issued the Notice
12 of Intent on those two bases.

13 With respect to the concerns raised by Living
14 Rivers that the Parachute Creek and Douglas Creek
15 Formations, members of the Green River Formation, are not
16 adequately analyzed. There's a very detailed hydrologic
17 report provided in both the NOI and also in Appendix S.
18 This information confirms that there's not, on the basis
19 of both the USGS mapped springs that show that there are
20 none in this area and also that the water source is
21 located within a one-mile radius, confirm that this
22 area -- basically provide an adequate analysis of these
23 members. That's provided in Exhibit G. And the full
24 hydrology report is set forth in Appendix S.

25 There was also a concern raised by Living Rivers

1 that there was some groundwater encountered in drilling.
2 But this was just a very little groundwater. We've
3 addressed this on page 2 and added the discussion from
4 Appendix S, which confirms that there was a small amount
5 of water encountered in drilling those six core holes,
6 but only in one of the six core holes. Small quantities
7 of water were observed, but they're not significant and
8 they're not in the water bearing -- any major water
9 bearing horizon would have been recognized in this core
10 hole drilling.

11 The well logs are set forth. Contrary to
12 Mr. Elliott's (sic) suggestion, they are set forth in
13 Figure 6 of the groundwater quality discharge application
14 that's attached as Exhibit I.

15 Finally, the Notice of Intent provides a summary
16 of the nearby water wells that are on file with the Utah
17 Division of Water Rights. Those are attached as Exhibit
18 K. And contrary to the allegations of Living Rivers,
19 these wells are clearly identified in the state
20 engineer's database location. And that database, you
21 could simply take administrative notice of that. But if
22 you need those database records, we've pulled them and we
23 can provide them for the record, if you'd like.

24 There's also a concern raised by Living Rivers
25 that the statements regarding isolation of groundwater

1 are inaccurate and confusing. And this is really not the
2 case. The NOI provides a summary of the existing
3 literature in this area, which shows that there is a
4 porous unit. About 50 to 100 people live in the Mahogany
5 zone. However, this permeability is not uniform
6 throughout the formation. And in Red Leaf's research,
7 they found -- in core testing, they found no evidence of
8 groundwater resources in this area. In addition,
9 although Living Rivers suggests that there's
10 inconsistencies in the data, they present no evidence to
11 support its protests that there are groundwater resources
12 in this area.

13 In addition, Red Leaf Resources contests the
14 definition of "aquifer." In fact, Living Rivers provides
15 no definition of aquifer. The definition that's
16 appropriate in this case is that set forth by the
17 Department of Environmental Quality. They define an
18 aquifer as, "A geologic formation that contains
19 sufficiently saturated permeable material to yield usable
20 quantities of water to wells and springs." And based on
21 that definition, there are no water resources that are
22 affected in this area.

23 As we indicated, Living Rivers has relied on
24 outdated information. The initial NOI, which was
25 submitted in April, was updated in September. And in

1 addition, of course, there was the October 20th decision
2 of tentative approval of the Division, which confirmed
3 that this entire permit was conditioned on obtaining a
4 groundwater discharge permit. That discharge permit
5 application was submitted as Appendix S. And once again,
6 that's in the record.

7 The letter also states that -- from Living
8 Rivers -- states incorrectly that Red Leaf does not
9 intend to obtain and the Division does not intend to
10 require a groundwater discharge permit. That's clearly
11 not correct. Apparently, Living Rivers didn't carefully
12 review the October 20th tentative approval, which was
13 clearly conditioned on the Division of Water Rights'
14 issuance of the groundwater permit.

15 In terms of the allegations that the EcoShale
16 design will not prevent contamination, this issue is
17 addressed very thoroughly in the groundwater discharge
18 application submitted as Appendix S and under
19 consideration of the Division of Water Quality. There
20 are probably -- well, there are some 15 pages of detailed
21 analysis regarding this and set forth, as noted in our
22 letter, at pages 25 through 40 of Appendix S. Sections
23 11, 12, and 13 of that groundwater discharge permit
24 application addressed the design and also addressed the
25 issues raised by Norwest.

1 Norwest initially made some recommendations
2 regarding the design of the EcoShale system. And they
3 made those recommendations with respect to the April 21
4 NOI that was submitted. That's been revised since in the
5 NOI dated September 1, 2011, and addressed specifically,
6 again, in the groundwater discharge permit application.

7 So we just -- in sum, the requirements of the
8 Division of Oil, Gas and Mining, with respect to this
9 issue and the Notice of Intent, are much more narrowly
10 focused than those of the Division of Water Quality. The
11 Division has appropriately conditioned the issuance of
12 the NOI on the Division of Water Quality's determination
13 as to whether -- analysis of the application and
14 determination whether they should issue a permit,
15 groundwater discharge permit, or whether one is not even
16 required.

17 So the function of the Division of Water Quality
18 is, of course, much more detailed. They have many more
19 detailed requirements. And in terms of the integrity of
20 the process, that's been detailed in great length in
21 three sections of the groundwater discharge permit. And
22 it's really something that's up to the Division of Water
23 Quality now. It's something in their expertise.

24 The narrow focus of the Division of Oil, Gas and
25 Mining Notice of Intent is to satisfy those two

1 requirements, depth to groundwater, which was clearly
2 identified, and secondly, provide an environmental
3 assessment of groundwater resources. And that was
4 provided. Those requirements are very simple, very
5 straightforward. And the applicant has met those
6 requirements. And the Division determined correctly that
7 those requirements were met.

8 So once again, we encourage the Division to
9 approve the Notice of Intent as conditioned on
10 October 20th and not wait until the Division of Water
11 Quality issues or decides not to issue its permit.

12 The overall objectives of the two programs are
13 very different. Division of Water Quality focuses
14 specifically on water quality and on the integrity of the
15 process. The Division is more concerned about providing
16 a general description of groundwater resources and
17 addressing reclamation.

18 I don't know. We may want -- Fran, since we've
19 got some extra time, do you want to address the issues
20 regarding the integrity of the bentonite amended soil
21 layer and the EcoShale patent to design?

22 MR. DUBUC: Before we do that, I would like to
23 object to the introduction of this document at this time.
24 This was -- we stipulated to this as being an informal
25 hearing.

1 MS. DRAGOO: Right.

2 MR. DUBUC: There was no provision for submittal
3 of written testimony.

4 And Mr. Baza, if you are going to consider this,
5 then I feel that the only adequate measure to counter
6 this is to give us an opportunity to respond to this
7 document. Otherwise, you should exclude this from the
8 record and not consider this in your deliberations.

9 MS. DRAGOO: I'd suggest that Mr. Lips just read
10 his statement into the record. And if it's a problem, I
11 can simply read mine into the record, which I just did.
12 The only thing this does is summarizes the response of
13 Red Leaf Resources to the specific four issues that were
14 raised by Director Baza and were also raised in the
15 letter of Living Rivers. So all this does is simply
16 assemble the information that's already in the record.
17 It simply copies, for the convenience of the hearing
18 officer, the references in the Notice of Intent and in
19 the groundwater permit. There's nothing new in that
20 letter.

21 MR. DUBUC: But again, this was prepared by
22 legal counsel, submitted by legal counsel. Are you
23 saying that it's totally devoid of any legal opinion of
24 any sort? What Mr. Lips did was provide technical
25 testimony clarifying the assertions that we made in our

1 protest letter. And I think that, again, if you are
2 going to consider this and accept this document, then you
3 need to provide Living Rivers with an opportunity to
4 respond.

5 HEARING OFFICER BAZA: Well, I think there are
6 some concerns that I have about seeing the document for
7 the first time today.

8 And I'm assuming you're seeing it for the first
9 time as well.

10 MR. DUBUC: Absolutely.

11 HEARING OFFICER BAZA: So I'm not really opposed
12 to having it included as part of this consideration, but
13 it would probably be wise to have you take a look at it
14 and then give me some kind of input, maybe in the form of
15 a, you know, response letter to this.

16 MR. DUBUC: If we could have just a reasonable
17 time to respond to this.

18 MS. DRAGOO: We'll withdraw it. That's fine.
19 We'll withdraw it. We made the statement for the record.
20 And the record, it's all in.

21 MR. DUBUC: The cat's kind of out of the bag.
22 Mr. Baza was reviewing this as you were talking. I mean,
23 it was inappropriate to introduce this. But the cat is
24 out of the bag. And I feel at this point, Living Rivers
25 should have an opportunity to respond.

1 MS. DRAGOO: Well, we don't feel it's
2 inappropriate to introduce it. It's simply a summary of
3 what's already in the record. You presented your
4 argument.

5 HEARING OFFICER BAZA: Denise, would you have a
6 problem, though, if Mr. Dubuc has a chance to look at
7 this and then provide me with some kind of written
8 response to what's in here?

9 MS. DRAGOO: Perhaps a short period of time.

10 MR. DUBUC: The regulation provides sufficient
11 framework for responses, generally ten business days or
12 some sort.

13 MS. DRAGOO: Yeah, that's really basically our
14 summary of what's in the record. We'll withdraw it.

15 MR. DUBUC: Again, I think it's too late. The
16 cat's out of the bag.

17 HEARING OFFICER BAZA: Give me a minute.

18 MS. DRAGOO: All right.

19 HEARING OFFICER BAZA: Tell you what we're going
20 to do: Just in the interest of time here, I'm going to
21 let Emily take a look at this. And before you withdraw
22 it, before you say that it's not -- it shouldn't be
23 introduced, or whatever, I'd like to hear from the
24 Division and allow the Division to take their 20 minutes,
25 unless --

1 MS. DRAGOO: Sure, that's fine.

2 HEARING OFFICER BAZA: -- that would be a
3 problem here.

4 MS. RUSSELL: I'm counting that Red Leaf has
5 taken about 15 minutes of their time, a little less than
6 15 minutes of their time. If you want to allow them time
7 after that to continue their allotted time, that's fine.

8 MS. DRAGOO: Sure. We'll reserve our -- some
9 rebuttal.

10 HEARING OFFICER BAZA: Rebuttal to what? You
11 said you wanted to have Fran talk about something. Do
12 you want to take a minute to do that? I mean, because
13 obviously, Living Rivers had Elliott talk. And I don't
14 know if Fran has some additional material.

15 MS. DRAGOO: Right. And Fran, I guess I would
16 like you to address a couple of issues. One is the
17 question of the isolation of groundwater and the question
18 about the additional water that was found and that was
19 reported in the groundwater discharge application. And
20 that's basically addressed in both the NOI and in
21 Appendix S regarding that B group (phonetic) and
22 encountering of the water at that time. Do you want to
23 go through that?

24 MR. AMENDOLA: Let me make a recommendation
25 because Bob really represents the hydrologic component of

1 the application and is the primary author of the
2 groundwater discharge permit. I think Bob should address
3 the issue of groundwater and the presence or absence of
4 any of the isolation.

5 MS. DRAGOO: Okay.

6 MR. BAYER: The RL-1 drill hole -- excuse me.
7 Did the RL-1 -- I'm sorry. I'm easily distracted. Has
8 to do with hair loss.

9 The RL-1 drill hole did, indeed, encounter some
10 waters in the very top of the bedrock in the hole. It is
11 drilled in a draw or a small drainage. And given the
12 time of year it was drilled, the observations the Norwest
13 geologist reported to me were that it was fracture-hosted
14 water, it did not persist to depth, and the fracturing
15 was related to weathering and erosion. It certainly does
16 not fit the description of an aquifer that has been
17 described elsewhere in the Basin. And this is quite
18 common in the areas like this, where you can get what we
19 call compartmentalized groundwater --

20 THE REPORTER: I'm sorry, "departmentalized"?
21 Could you speak up a little bit? I couldn't hear you
22 after "whatever we call departmentalized."

23 MR. BAYER: Okay. It's quite common to have a
24 little compartmentalized groundwater in a shallow
25 subsurface like this, or it can occur. However, none of

1 the drilling encountered water at depths, or any rock
2 types, that suggested that they had sufficient
3 permeability to host or contain groundwater.

4 The recharge area for all of these aquifers has
5 been -- any aquifers that might have been there have been
6 long eroded away. We're at the edge, virtually, of
7 the east --

8 THE REPORTER: I'm sorry. "At the edge of"?
9 Your voice is dropping again.

10 MR. BAYER: -- the edge of the east Tavaputs,
11 T-A-V-A-P-U-T-S, Plateau, with the south edge -- the
12 exposures of these shallow formations through much of
13 the -- all of Parachute Creek and the Douglas Creek
14 aquifer that could serve as significant recharge area
15 have long been eroded away. There is a big canyon down
16 there to the south. So it's not surprising that there's
17 no water encountered.

18 Is that what you wanted to talk about, Denise?

19 MS. DRAGOO: Yes. That's correct. I think
20 that's good.

21 HEARING OFFICER BAZA: Denise, was there
22 anything else you wanted to cover?

23 MS. DRAGOO: I think that's probably it. Maybe
24 we could go on to the Division's presentation.

25 HEARING OFFICER BAZA: All right, Steve. We'll

1 turn the time over to you now.

2 STATEMENTS BY THE DIVISION

3 MR. ALDER: We thought -- just briefly, I would
4 just preface our response to say that we thought it was
5 appropriate to provide an opportunity for public comment
6 on these issues and to have a hearing to address them.
7 Although they are groundwater issues, and groundwater
8 issues are dealt with under the permit that has been
9 applied for with the Division of Water Quality, there is,
10 of course, an obligation under our statute and rules to
11 investigate and determine the compatibility of the NOI
12 application with requirements to protect groundwater and
13 to indicate what mitigation would be taken if there is a
14 potential ...

15 The requirements are pretty brief. The
16 requirements at DWQ are much more extensive and,
17 generally, we believe they are the experts in that area.
18 But I would ask just briefly the Division to address the
19 concerns that have been raised by Red Leaf.

20 And you can go first, if you'd like, Leslie, and
21 introduce yourself.

22 MS. HEPPLER: I'm Leslie Heppler. And per
23 direction by John at the beginning, we're limiting
24 ourselves to November 18, 2011, by Western Resource
25 Advocates -- the letter.

1 And one of the areas that was brought up was
2 R647-4-106, "Operation Plan," which states, "The operator
3 shall provide a narrative description, referencing maps
4 or drawings, as necessary, of the proposed operations,"
5 including Item No. 8, "Depth to groundwater, extent of
6 overburden material, and geologic setting."

7 This information was provided in the NOI in the
8 form of a map, a geologic map, that I was able to double
9 check with an Open-File report that was published by UGS.
10 The report number was 549DM. And the geologic data was
11 correct.

12 There was also a typical cross section that was
13 provided for the area that referenced the overburden
14 material. And there was narrative in the plan that
15 described the depth to groundwater per our rule. I
16 followed -- I followed -- I followed our rules as
17 written. I have no further comment.

18 MR. MUNSON: My turn?

19 MR. ALDER: Yes.

20 MR. MUNSON: I'm Tom Munson. I'm the surface
21 water hydrologist for the Division.

22 My requirements in regards to the rules are
23 found under R647-4-105, "Maps, Drawings, and
24 Photographs," 1.12. And it states, "Perennial streams,
25 springs, and other bodies of water, roads, buildings,

1 landing strips, electrical transmission lines, water
2 wells, oil and gas pipelines, existing wells, bore holes,
3 and other existing surface or subsurface facilities
4 within 500 feet of the proposed mining operations."

5 They identified those in relationship to their
6 comment that states that the NOI reports there are no
7 USGS mapped springs issuing from either of these
8 formations in or near the parcels. They say, "There's
9 insufficient evidence upon which to conclude there are no
10 aquifers that will be impacted by the mine. Not all
11 springs are mapped by the USGS. And for this and other
12 reasons, reference to such maps is not a standard for
13 determining the absence -- presence or absence of
14 groundwater."

15 Our rules don't require, do not identify a
16 specific methodology or -- a specific methodology for
17 identifying springs. And there is no standard, per se,
18 for doing that. The method that they chose is acceptable
19 to the Division. That, and based on any of their
20 observations of the field, would have been recorded. In
21 conversations with them, they said that. And there was
22 no evidence of any springs or seeps within 500 feet of
23 the property.

24 So from my perspective, they address that
25 question, meeting the requirements of our rules.

1 HEARING OFFICER BAZA: Okay.

2 MR. ALDER: And with regard to the rule that
3 requires impact assessment and discussion of mitigation,
4 did they satisfy those requirements?

5 MR. MUNSON: Yeah. R647-4-109, "Impact
6 Assessment. The operator shall provide a general
7 narrative description identifying potential surface and
8 subsurface impacts." And specifically No. 1 "Impacts to
9 the Surface and Groundwater Systems." They have provided
10 a very detailed -- not a general -- narrative in regards
11 to surface water impacts, and provided quite detailed
12 surface water designs using definitely industry standards
13 in regards to that information and have met the
14 requirements of that rule, from our perspective.

15 MR. ALDER: Would there be a storm water --

16 MR. MUNSON: -- storm water plan, a designed
17 storm water plan using all the appropriate -- and
18 actually, we do not have specific storm events, designed
19 storm events. So they just used what is considered a
20 standard design event, and actually went above and beyond
21 what we would have required for that design. And very
22 appropriately designed a system which will work, I
23 thought, very well based on my technical expertise of 29
24 years as a surface water hydrologist working on hundreds
25 of mines.

1 MR. ALDER: I didn't mean to cut you off. Thank
2 you. We didn't get your resume in here.

3 MR. MUNSON: No, I can give you one, if you'd
4 like.

5 MR. ALDER: I believe the Director is familiar
6 with your expertise.

7 And Leslie, were there any -- did you see any
8 reason, did you concur that there was no potential for
9 groundwater impacts from the mines?

10 MS. HEPPLER: Yeah. Based on their design of
11 using a bentonite amended soil and also the natural
12 occurring geology, anywhere from five feet of a low
13 transmissivity shale that is naturally occurring all the
14 way up to the 500 feet that has been found at particular
15 locations, it's belt and suspenders. There is double
16 protection there.

17 MR. ALDER: So you felt that rule was satisfying
18 the --

19 MS. HEPPLER: Yes, that is correct.

20 MR. ALDER: That's all we have.

21 Unless you have more, Paul, that you want --

22 MR. BAKER: No.

23 DISCUSSION LED BY HEARING OFFICER BAZA

24 HEARING OFFICER BAZA: I have just a set of
25 inquiries that I'd like to make. And I'm probably going

1 to start with the Division and work backwards, then, to
2 Living Rivers.

3 Just for everybody's knowledge, Steve said that
4 I was familiar with Leslie and Tom's expertise and
5 background. I think through various things that are
6 happening with the Division, I'm also familiar with
7 Mr. Bayer's and Mr. Lips' background and expertise as
8 well. So I'm not unfamiliar with any of those things.

9 I guess my first question would go to you,
10 Mr. Alder, maybe with the help of Division staff.

11 Living Rivers, I mean, one of the first
12 statements out of Mr. Dubuc's mouth was that the Division
13 made a mistake. So I'd kind of like to hone in on what
14 the rulings say or the statute says about the Division's
15 responsibility relative to a large mining NOI. What are
16 we supposed to do with it? Does it specify how we are
17 supposed to analyze that and what our responsibility is
18 to the public and the state for that?

19 MR. ALDER: Well, I think the answer to that
20 question is that the rules that address a large mine NOI
21 cover everything from five acres and larger to Kennecott
22 copper mine. And the regulations themselves are quite
23 general and not very specific. And so it requires the
24 expertise and experience of the Division's hydrologist
25 and geologist, such as have testified, to kind of adapt

1 the rules to the circumstances. And that's not to say
2 that they should lessen the analysis, it's just that it's
3 very general. It's under Rule 647-4-109 that requires
4 that the operator -- so the application and the NOI
5 should "provide a general narrative description
6 identifying the potential surface and or subsurface
7 impacts, including impacts to surface groundwater
8 systems, potential impacts to species" -- that's not an
9 issue here -- "and impacts to the soil resources." That
10 apparently has not been raised in the objections. And
11 then finally it says at the end, "Actions which are
12 proposed to mitigate any of the above-referenced
13 impacts."

14 So it is really pretty basic, just, you know,
15 what are the impacts and what's been done to affect them.
16 There is no restriction that says you have to have a
17 certain number of monitoring wells. And so it's on the
18 operator and the operator's understanding that these
19 mines are going to be certainly subject to a great deal
20 of scrutiny to make sure that they provide a good, solid
21 application that addresses those issues. And the
22 Division also looks at them to make sure that they do, to
23 their professional expertise. And that's really it.

24 In addition, the application requires additional
25 information about depth to groundwater, the size of the

1 mine, the overburden, the type of reclamation -- a lot of
2 things that aren't at issue here. But with regard to
3 groundwater, again, in the application, it's pretty
4 limited. But we're limited to the rules, if that's your
5 question, and whether or not it complies. And the rules
6 are not very specific.

7 HEARING OFFICER BAZA: Well, that last statement
8 of yours was probably very telling, that the rules are
9 not very specific. And I'm glad that you brought up the
10 R647-4-109. It's been raised already.

11 How does -- maybe this is a question for
12 Mr. Baker. How does the staff use that impact
13 assessment? What conclusions are expected to be drawn
14 from that?

15 MR. BAKER: Well, we would look at the impact
16 assessment and determine what mitigation needs to be
17 done, as it says in the rules; the degree of impact that
18 there might be and how that would affect the environment;
19 and whether mitigation is required and what degree of
20 mitigation.

21 HEARING OFFICER BAZA: I'm putting you on the
22 spot here. Where in the rules does it talk about
23 mitigation?

24 MR. BAKER: It's in 109.

25 HEARING OFFICER BAZA: 109?

1 MR. BAKER: 109.5.

2 HEARING OFFICER BAZA: So Part 5. I think it
3 says, "Actions which are proposed to mitigate any of the
4 above-referenced impacts."

5 MR. BAKER: Yes.

6 HEARING OFFICER BAZA: Okay. So you would make
7 an analysis of those impacts. You'd identify potential
8 mitigations. And does that become inclusive, then, as
9 part of the tentative approval?

10 MR. BAKER: That information should be included
11 in the NOI, whatever mitigation plans are required.

12 HEARING OFFICER BAZA: So through some kind of
13 iterative process, you are going back and forth to the
14 operator, and you're saying, "This is what's appropriate
15 for mitigation. You should include it in your NOI."

16 MR. BAKER: Yes, that's right.

17 HEARING OFFICER BAZA: Okay. This is another
18 question for the Division. And this might be a hard one
19 to answer, so think about this for a minute.

20 So how much information is adequate? Whether it
21 refers to groundwater resources or the bentonite amended
22 soil or anything like that. I mean, we're all
23 scientists -- or at least most of us are scientists. And
24 I'm sure we would like to get as much information as
25 possible.

1 But when do you reach a point as a Division
2 staff member and say, "This is good enough. We've got
3 enough information to make a decision"?

4 MR. BAKER: I think that has to be something
5 that the staff member judges based on their professional
6 experience. And I don't know how to answer it any better
7 than that. The people that we have are highly educated
8 and experienced, and they can make those judgments.

9 HEARING OFFICER BAZA: And you are talking about
10 yourself and Tom and Leslie?

11 MR. BAKER: Well, me as a biologist. But Tom
12 and Leslie as hydrologist and geologist, yes.

13 HEARING OFFICER BAZA: Sure. Okay. So it is
14 somewhat of a judgment call, but you use your best
15 professional expertise to make that judgment call?

16 MR. BAKER: Yes, absolutely.

17 HEARING OFFICER BAZA: Okay. Let me turn to Red
18 Leaf Resources now. Like I said, I'm going in reverse
19 order.

20 I think, Denise, one of the things you said was
21 that water resources are defined by usable water.

22 MS. DRAGOO: "Aquifer," the term "aquifer,"
23 right.

24 HEARING OFFICER BAZA: Oh, okay. Can you
25 clarify that for me a little bit?

1 MS. DRAGOO: Yes. Well, throughout the protest
2 of Living Rivers, they continue to assert that certain,
3 for instance, porous units were aquifers. And that's not
4 the case. An aquifer is defined under the Department of
5 Environmental Quality rules as, "A geologic formation
6 that contains sufficient saturated permeable material to
7 yield usable quantities of water to wells and springs."
8 That's R317-6-1.1. And that's the definition that was
9 relied on by Red Leaf Resources in preparing its NOI and
10 relied upon by the Division in determining that there
11 were basically no water resources, groundwater resources
12 affected.

13 HEARING OFFICER BAZA: Okay. So I'm not wanting
14 to put words in your mouth. But would it be Red Leaf's
15 opinion that because they couldn't define or they
16 couldn't identify usable water, that the information
17 included in the NOI was good enough?

18 MS. DRAGOO: Yes, exactly.

19 HEARING OFFICER BAZA: Okay.

20 MS. DRAGOO: There was adequate information.
21 For instance, the six core holes were drilled. They
22 found a little bit of water, but not sufficient to be
23 usable. And so it didn't meet the definition of an
24 aquifer.

25 HEARING OFFICER BAZA: Okay.

1 MR. BAYER: Can I add? Since the groundwater
2 application was brought up and the water encountered in
3 Hole RL-1 was also brought up, I neglected to say before
4 that, that water stopped flowing shortly before the hole
5 was completed. And no more water was encountered. So
6 it, indeed, was compartmentalized from the source of
7 shallow groundwater. Certainly not usable, except for
8 the mice, maybe, that ran by at night.

9 MR. ALDER: From the definition, "aquifer" is
10 not a term used in the general rules.

11 HEARING OFFICER BAZA: I realize that. It talks
12 about "groundwater resources," correct.

13 Denise, you've referenced the groundwater permit
14 information -- application and permit information and
15 analysis being done by DWQ.

16 Since the Division issued its October 20
17 tentative decision, in Red Leaf's mind, how does that DWQ
18 analysis and decision making integrate with what the
19 Division of Oil, Gas and Mining must do?

20 MS. DRAGOO: Right. This goes back to the
21 October 20th tentative decision. And basically, there
22 the Division simply required that the permit be submitted
23 30 days prior to the commencement of operations. So it's
24 clear that the Division is relying on the Division of
25 Water Quality to make the determination as to whether or

1 not, you know, the groundwater discharge permit is
2 required, the type of permit, whether it's going to be
3 permit by rule, a site specific permit, or maybe no
4 permit at all. So the Division of Oil, Gas and Mining
5 conditioned its tentative approval October 20th on,
6 really, the Division of Water Resources -- or Water
7 Quality in making that determination.

8 HEARING OFFICER BAZA: And you also indicated
9 that -- I think one of your comments was that DOGM should
10 not wait on a DWQ decision for final approval of the NOI.

11 MS. DRAGOO: Right.

12 HEARING OFFICER BAZA: And that's based on the
13 fact that the approval of the Division would then be
14 conditioned on whatever decision DWQ has to make?

15 MS. DRAGOO: Right. That's correct. So, for
16 instance, the Division of Oil, Gas and Mining, there's a
17 whole series of federal, state, and local permits that
18 have to be obtained. But the NOI can go forward before,
19 for instance, a building permit is issued by the local
20 zoning authority, or whatever. The fact that the
21 Division's rules specifically provide that -- you know,
22 just because you obtain a Notice of Intent, that doesn't
23 mean that it obviates the need to comply with other
24 Department of Environment Quality rules or permits,
25 conditions, that type of thing.

1 So obviously, the operator has the duty to go
2 ahead and comply with all those requirements. And so we
3 would urge that the NOI be issued, subject to that -- to
4 the determination by the Division of Water Quality
5 whether or not a permit is required and the type of
6 permit.

7 HEARING OFFICER BAZA: Okay. I'm going to
8 transition now to Living Rivers. Yeah, we've got plenty
9 of time.

10 Mr. Dubuc, you had a statement, I believe, when
11 you started out, that Division of Water Quality and the
12 Division of Oil, Gas and Mining are somewhat separate
13 agencies of state government with somewhat separate
14 responsibilities?

15 MR. DUBUC: Yes, sir.

16 HEARING OFFICER BAZA: Would that indicate to
17 you that we shouldn't be talking to each other?

18 MR. DUBUC: Oh, no. If that's the impression I
19 gave, I certainly didn't mean to give that. I think
20 that's one of the difficulties that we have seen in the
21 past and will continue to see, is how do those two
22 agencies interact with each other?

23 We recognize that there are limited resources
24 and areas of expertise in each of those agencies. But a
25 great deal of what the Division of Water Quality does,

1 for instance, in the area of groundwater, is really
2 needed to inform the Division of Oil, Gas and Mining --
3 and the impacts to groundwater. And those impacts are
4 required -- the assessment of those impacts are required
5 by your regulations. And I am hard-pressed to say how
6 your Division can make a decision in a vacuum.

7 If you have a Division of Water Quality over
8 here saying, "We don't have enough information. We need
9 more. We haven't made up our mind what kind of permit,
10 if we're going to need a permit," I'm hard pressed to see
11 how your agency, four months in advance of today, could
12 have said, "This is fine. This meets our requirements."

13 Again, we would like to meet with you at some
14 point outside of this forum to discuss the regulation of
15 these new extraction processes. But it's almost like you
16 need to work with each other in some sort of tandem, that
17 the Division of Oil, Gas and Mining can reach a point in
18 its deliberative process, and it then must turn to its
19 sister agency and their expertise to inform it, to fill
20 in the gap of what your agency is not able to derive in
21 terms of information. And until that process is
22 complete, I think that a final decision by your agency is
23 premature.

24 And that's what I was trying to say is we
25 recognize that there are different agencies, but there is

1 a great deal of overlap between them. And there's a gray
2 area.

3 HEARING OFFICER BAZA: So is it your assertion
4 as part of this proceeding that we shouldn't make a
5 decision until Water Quality finalizes theirs?

6 MR. DUBUC: Absolutely. I think that is
7 absolutely premature. Even to make it conditioned, how
8 do you give final approval conditioned on something that
9 could totally change the game? There is a basic
10 assumption in the NOI that a groundwater permit would not
11 be required. It states that. We've talked to the
12 Division of Water Quality. They say the groundwater
13 permit is not going to be required.

14 There's a very elaborate process that goes into
15 a groundwater application, 195 pages worth of process,
16 and it's still not enough. None of this was in the NOI.
17 None of this was considered by your Division before it
18 made a tentative approval. I don't see how that can be
19 an informed decision.

20 Yes, the permitting process has to go through
21 its normal course of back and forth between agencies.
22 And only then is it appropriate for your agency to make a
23 final decision.

24 HEARING OFFICER BAZA: Mr. Baker, is the water
25 quality application included as part of the Division's

1 records on the NOI now?

2 MR. BAKER: It is included as Appendix S, as has
3 been discussed earlier.

4 But I think there are two separate processes
5 here. The Division has its own processes and has its own
6 rules. And we have to make a determination whether we
7 believe the NOI meets the requirements of the R647 rules.
8 And that's where we issued our conditional approval --
9 our tentative approval.

10 HEARING OFFICER BAZA: Now in the course of your
11 analysis of the NOI, between the time it was submitted in
12 April and when you issued the tentative approval in
13 October, that six months, I mean, does the staff have
14 conversations with the folks at Water Quality? Do they
15 interact?

16 MR. BAKER: Yeah, they do. You know, I'm not
17 sure exactly how much they did in this particular case.
18 I can't say.

19 HEARING OFFICER BAZA: Tom or Leslie, can you
20 answer that, how much interaction you had?

21 MR. MUNSON: Well, I've had conversations with
22 them, you know, off and on about a number of things,
23 specifically about Red Leaf. And I would -- from my
24 perspective, I'm surface water. So I didn't really have
25 as much interaction regarding that. But Leslie had.

1 MS. HEPPLER: Yeah, I probably talked to them
2 two or three times by the phone in conversations that
3 lasted anywhere from a half an hour to an hour.

4 HEARING OFFICER BAZA: If they presented a
5 concern about the groundwater permitting, or something
6 like that, would that tailor your decision on the NOI --
7 and did it?

8 MS. HEPPLER: Not on our approval on the NOI.
9 We've met -- what has been submitted to us has met our
10 rules. But in this same frame, just because we give them
11 approval for this doesn't mean they can speed down the
12 highway. They have to meet all other regulations. So
13 you can't say, "You can't get your driver's license
14 until" -- you know, you can't do those inferences. You
15 can't hold one up based on the other.

16 MR. DUBUC: May I respond?

17 HEARING OFFICER BAZA: Yeah. Let me hear what
18 you have to say.

19 MR. DUBUC: Again, a basic premise of the NOI
20 that your agency approved was that a groundwater permit
21 application would not be required by the Division of
22 Water of Quality. And it states as much, that there will
23 be no groundwater impacts.

24 The Division of Water Quality did not notify
25 your Division that a groundwater application would be

1 required until approximately two weeks before you made a
2 decision. So it's impossible for any of that information
3 to have been considered in your deliberations. And
4 again, this groundwater application, this 195-page
5 document, was not submitted until after two months after
6 that tentative approval. So how the information in here
7 could have been considered by your Division is hard to
8 see.

9 MS. DRAGOO: Could we respond to that --

10 HEARING OFFICER BAZA: Let's hear.

11 MS. DRAGOO: -- as well?

12 Actually, Bob Bayer wrote that letter.

13 MR. BAYER: Let's talk about where this whole
14 business of a groundwater permit is not required to get
15 started. It began in a conversation at a pre-design
16 conference, which Leslie Heppler was in and several folks
17 from DEQ were present as well.

18 I made the argument to the Division of Water
19 Quality -- rightfully or wrongfully, it was a technical
20 argument -- that basically given the containment here,
21 we're talking about a fully-contained surface facility,
22 that on a strict reading of the rules, the DWQ rules
23 might not require a permit at all. That got some nods
24 and kind of, "Well, that's interesting."

25 So the Division never once opined -- the

1 Division of Water Quality never once rendered an opinion
2 that that was true or not. However, we contended on
3 behalf of Red Leaf that for certain reasons that are very
4 clear in the rules and the letter that made the -- which
5 is in the public record over at DWQ and is appended to --
6 it's an appendix in the NOI -- said simply -- we describe
7 the geology, we describe the groundwater setting, et
8 cetera. It says simply because of the definitions within
9 the groundwater rules, we don't believe this facility has
10 the potential to impact groundwater; therefore, no, we
11 don't believe a permit is needed. That was the strategy
12 that was proposed because -- and we still contend that
13 the way that the groundwater rules are written, that
14 that's a reasonable argument.

15 The Division of Water Quality rejected that
16 argument in a letter and said, "No, you've got to have --
17 you've got to submit a permit application." So then we
18 did that.

19 The document that we provided complies with the
20 rules as best we can. And it's true that the Division of
21 Water Quality has asked some additional questions, all of
22 which will be addressed, will be addressed appropriately.

23 There are some very experienced senior
24 scientists that have done the modeling work, et cetera,
25 that's been referenced. And Red Leaf is very confident

1 that they responded to all of those questions that were
2 mentioned by Mr. Lips in his testimony, that they have
3 recently sent out in their letter.

4 I'd also point out that the groundwater
5 discharge permit is only part of the DWQ permitting
6 process. They also have to -- if they're going to
7 regulate this as a facility that might discharge to
8 groundwater, they have to issue what's called a
9 "construction permit." That's totally within their
10 regulatory purview. And they will have to do that. And
11 they will have review plans and designs sufficient, on
12 top of whatever is in the groundwater discharge permit,
13 as necessary, to issue that construction permit. That is
14 clearly in their purview for regulating any kind of waste
15 water treatment facility or anything else. That's where
16 that authority comes from.

17 I just remind you, Director Baza, as a former
18 Board member, that the Utah Mine Reclamation Act
19 specifically states -- and I can't quote it -- something
20 like, you know, except for matters of what related to
21 water quality, the Division has authority over basically
22 protecting the environment or whatever. However, the
23 authority regarding water quality resides with the
24 Department of Environmental Quality.

25 Since the groundwater rules were written, I

1 commented on them heavily on behalf of the Utah Mining
2 Association almost 25 years ago. That has been a
3 consistent approach. And the relationship that's been
4 described here today by the Division staff has been the
5 same relationship, the same process that has worked very
6 effectively for the last 25 years.

7 HEARING OFFICER BAZA: Let me turn a little bit
8 to the groundwater, or the hydrologic science. I'm
9 afraid that I know just enough about that to be
10 dangerous. But I have some questions. And maybe this is
11 a combination of Mr. Lips and Mr. Bayer who can help
12 answer this.

13 I think there's been some comment about
14 compartmentalized groundwater and perched aquifers. What
15 I know of that is it would almost seem to me that a
16 perched aquifer, by definition, is somewhat isolated.

17 What's your thought on that, Mr. Lips?

18 MR. LIPS: I think that's an accurate
19 generalization or a characterization that perched
20 aquifers or, as Mr. Bayer described, these
21 compartmentalized occurrences of groundwater would be
22 differentiated from those that have a larger aerial
23 extent that may extend over several miles or tens of
24 miles. So they're typically smaller in aerial extent and
25 thickness.

1 HEARING OFFICER BAZA: So maybe you could help
2 me understand a little bit. I mean, Red Leaf Resources
3 is a mining company that will have some surface impacts.
4 They are characterizing this as they will have limited
5 impact on the hydrologic groundwater resources of the
6 area.

7 What do you see as the potential damage? I
8 mean, if -- let's say that the contaminant, somehow --
9 hydrocarbon was to seep into one of these perched
10 aquifers. What are we talking about the magnitude of
11 that kind of impact? What ultimately could happen?

12 MR. LIPS: Well, I think the potential impact,
13 it's difficult to say unless you know how big or how
14 extensive that groundwater occurrence is, and
15 particularly, where that water would discharge to the
16 surface. And if there are contaminants that are
17 introduced into that groundwater system as a result of
18 this proposed operation, then the question becomes:
19 Where do those contaminants potentially go? Are there
20 small occurrences of discharge points from these
21 localized groundwater systems that are used by wildlife
22 or avian species? Do these groundwater systems connect
23 to surface flow? And what are the potential impacts to
24 downstream surface water systems? Those are the types of
25 questions that you can only begin to ask and attempt to

1 answer when you know the basics of what resource is
2 there.

3 And I guess the fact that these are perched or
4 somehow isolated or discontinuous doesn't diminish their
5 importance, either, with regard to the R647 rules or from
6 a hydrologic standpoint. And, you know, quite frankly,
7 there's been a lot of discussion about what is or isn't
8 an aquifer. And the R647-4-109 impact assessment doesn't
9 reference "aquifer," it references "subsurface impacts."
10 And then it goes on to projected impacts to groundwater
11 systems. And that would include these compartmentalized
12 groundwater systems. That's how it was described. And
13 it would include small or perched or isolated aquifers.
14 Those are part of the groundwater system that requires
15 under R647-4-109 the Division -- "There shall be a
16 general narrative description identifying potential
17 impacts, subsurface impacts."

18 And so you know, I think that it's appropriate
19 to recognize that these are groundwater systems that have
20 the potential to be impacted by this operation. And
21 that's sort of the answer to your question.

22 HEARING OFFICER BAZA: Okay. You talked a fair
23 amount in technical specificity about seepage results
24 from the capsules, integrity of the BAS, things like
25 that. Are those things that are analyzed as part of the

1 DWQ permit approval, or ...

2 MR. LIPS: They were submitted as part of the
3 permit application to DWQ in December. And that permit
4 application has been attached to and incorporated with
5 the Division NOI.

6 They are looking at that. They are considering
7 it. And, in fact, that was one of the comments that the
8 DWQ made to Red Leaf on February 12, 2012, was asking for
9 additional analysis specifically on that issue of seepage
10 and the modeling of seepage of precipitation into and
11 ultimately out of these containment capsules.

12 So it is an issue. I believe, based on the fact
13 that the information was submitted to DWQ and that
14 they've commented on it and asked for additional
15 information, I think it's safe to assume they are looking
16 at that.

17 MS. DRAGOO: Could we respond to that, Director
18 Baza?

19 HEARING OFFICER BAZA: Well, my next question is
20 for you. So let me hear what you have to say.

21 MS. DRAGOO: Okay. Fran, could you address the
22 quality assurance plan?

23 MR. AMENDOLA: My name is Fran Amendola.

24 As part of the application that was submitted to
25 groundwater quality, there's been a QA\QC plan that has

1 been submitted with respect to the BAS layer and the
2 construction of that BAS layer. And basically what the
3 QA/QC plan does is outlines a procedure that will define
4 how the BAS will be constructed and to achieve the
5 permeability level that were -- we had in the design.
6 And that permeability is 10^{-7} . And that is
7 a particular piece of information that the Division of
8 Water Quality is very interested in. They will also be
9 involved with monitoring the performance of that QA/QC
10 plan to confirm that we can achieve that level of
11 containment in the capsules.

12 Couple other things I wanted to mention. We
13 talked about the HELP model and the penetration of
14 moisture. The HELP model was actually designed to look
15 at the cover of the capsules. And when we talk about
16 "cover," we need to be thinking about, about a foot of
17 soil, two feet of overburden, three feet of BAS, and
18 about 13 feet of insulation or gravel material before you
19 even get to the spent shale. And the HELP model really
20 does look at how moisture moves into that cover material.

21 And what we saw after modeling the area and the
22 capsules for a 30-year time period using conservative
23 parameters was that we saw .01-inch of moisture entering
24 the three feet of BAS. And there was some comment about
25 does that -- you know, we need to look at that over a

1 longer time period. That has come up. We're going to
2 address that as part of the response to the Division of
3 Water Quality.

4 But realize that when we did the modeling, we
5 used very conservative parameters, we used high moisture
6 or precipitation values. And we still ended up with
7 0.01-inch penetration into the BAS. That doesn't even
8 get into the 13 feet of insulation that we have before we
9 reach the spent ore.

10 So we're looking at that very closely. We're
11 going to continue to look at it.

12 But even running the model for a long time, it
13 doesn't say that you'll get greater penetration because,
14 like weather, the model results will incorporate cyclical
15 events, wet periods, dry periods. So that front of
16 moisture will move. Sometimes it will recede, and
17 sometimes it will again move forward or lower into the
18 BAS -- or maybe not even reach the BAS.

19 So that issue that you raised is certainly
20 something that we're looking at. But I think the
21 integrity of the BAS is a very important aspect of the
22 project and it's supported by design. But it's, most
23 importantly, going to be supported by a QA/QC program
24 that's going to help confirm that we can achieve that
25 design.

1 HEARING OFFICER BAZA: Did you have something
2 more to say to that?

3 MR. LIPS: Just a quick clarification and
4 comment.

5 That the HELP model run, that it was based on
6 the permeability of 1 times 10 to the minus 7 for the
7 BAS. And the numbers that I cited are from the HELP
8 model results of what penetrated through. So this is
9 looking at the bottom of the BAS layer. So your model
10 results did show that even under this best case scenario
11 of what you call conservative assumptions, there would be
12 sufficient seepage of precipitation water through the BAS
13 in significant quantities in terms of gallons per year.

14 MR. AMENDOLA: I'd like to verify your
15 numbers --

16 MR. LIPS: Oh, sure.

17 MR. AMENDOLA: -- from that. But you also
18 stated numbers that represented a non-revegetated
19 condition.

20 MR. LIPS: Right.

21 MR. AMENDOLA: And we have a very strict
22 commitment with the Division of Oil, Gas and Mining to
23 have revegetation performance standards. So the
24 likelihood of us having an exposed surface for an
25 extended time period, which that worst-case scenario you

1 might be referring to is not a very probably case.

2 MR. LIPS: Understand.

3 HEARING OFFICER BAZA: And I don't want to get
4 into a tennis match between experts here.

5 MR. BAYER: It was getting fun.

6 HEARING OFFICER BAZA: I appreciate your
7 comments on both sides. I think they're valuable.

8 But I'm going to pose a question to you, Denise,
9 and maybe additionally to Paul and Steve.

10 But hypothetically, let's say we moved ahead
11 with a final approval on the NOI while Water Quality is
12 still finishing up their analysis of the groundwater
13 permit. And let's go further to hypothetically say that
14 something in their analysis suggests a change in mining
15 operation or design or something else.

16 How does that get addressed as a change to the
17 NOI and the Division's approval of that?

18 MS. DRAGOO: Well, in the event that that was
19 required, you could certainly modify the NOI. That
20 happens quite a bit. Conditions occur or circumstances
21 occur, and the NOI is -- there's a new condition.

22 In fact, Red Leaf Resources committed to the
23 Division to notifying them in the event that their
24 monitoring plan would change, or something to that effect
25 as a result of the NOI -- sorry, as a result of the --

1 MR. ALDER: Could you speak up a little bit? I
2 can't hear.

3 MS. DRAGOO: Sure. I was just saying that Red
4 Leaf Resources has committed to getting back to the
5 Division in the event that the Division of Water Quality
6 requires additional monitoring, or something to that
7 effect. So they could simply modify the Notice of
8 Intent.

9 MR. ALDER: I hope Director Baza can hear now.

10 MS. DRAGOO: Right. But there's no need to stop
11 the process until all of the permits are in place. And
12 the Division is protected because the actual mining
13 cannot commence until the groundwater discharge permit is
14 issued or until the Division of Water Quality makes a
15 determination that one is not required.

16 HEARING OFFICER BAZA: Paul, Steve, is that how
17 the process usually works?

18 MR. BAKER: Yes, it is. If the Division of
19 Water Quality was to make some requirements that would
20 require a modification to the plan, then we would have
21 Red Leaf submit an amendment.

22 HEARING OFFICER BAZA: And that's all to be done
23 before mining operations commence, correct?

24 MR. BAKER: Before -- it depends on what aspect
25 of the operation it affected. Theoretically, they could

1 begin, say, stripping topsoil, or something like that.
2 But anything that was affected by the requirement from
3 Water Quality would need to be delayed until that was
4 taken care of.

5 HEARING OFFICER BAZA: You had a comment, Mr.
6 Dubuc?

7 MR. DUBUC: Well, the problem with that,
8 Mr. Baza, is oftentimes those things are done behind the
9 scenes. Your Division noted earlier that several
10 informal conferences took place that are not part of the
11 record.

12 If changes are going to be made to the NOI, then
13 I think the public has a right to comment on those. And
14 oftentimes, those types of changes -- the process is not
15 set up to facilitate that. And that is the danger of
16 what you are suggesting.

17 MS. DRAGOO: That's not correct. It's a public
18 process. There's a C1-C2 Form that's submitted. That's
19 a public process amending the NOI. It's not done behind
20 closed doors. It's all part of the public record.
21 You'll find that in the Division's -- on their website.

22 MR. DUBUC: Not to have a tennis match, but
23 there's a difference between being on the record and
24 being subject to public notice and comment.

25 HEARING OFFICER BAZA: Steve?

1 MR. ALDER: Yeah, well, there are two different
2 things. With regard to the question about whether an
3 amendment gives public notice, that depends on whether
4 it's defined as a "revision" or an "amendment." A
5 revision requires public notice and an amendment would
6 not.

7 But I was -- with regard to the other question
8 that you asked. Prior to the mining beginning, then
9 there would be that opportunity for making changes to the
10 permit and, depending whether it was an amendment or
11 revision, public notice.

12 But then after operations begin, I didn't want
13 you to have the impression that the only requirement is
14 that impact analysis. Because there are the requirements
15 in the rules for operational practices and reclamation
16 practices that have minimum standards which require
17 protection of the environment for deleterious materials
18 and protection of hydrology systems, if those are
19 observed. And hopefully, the monitoring is sufficient
20 enough that we become aware of that. Then the permit
21 would need to be modified to address those issues as well
22 because the mine has to comply with those practices.

23 HEARING OFFICER BAZA: We're approaching our two
24 hours here. I need to consult with counsel for just a
25 minute. So if you kind of hang loose for me while we

1 step outside.

2 (A break was taken from 11:10 a.m. to 11:14 a.m.)

3 HEARING OFFICER BAZA: Okay. Thanks for
4 indulging me. First of all, let me ask the court
5 reporter. You don't need to include this on the record.

6 (A discussion was held off the record.)

7 HEARING OFFICER BAZA: In terms of the document
8 that was submitted by Denise today. Yes, I was looking
9 at it while you were talking. From what I could see of
10 the document, you basically narrated much of what was
11 said in the letter, anyway.

12 MS. DRAGOO: Exactly.

13 HEARING OFFICER BAZA: And the appendices that
14 you included appear to be documents that have already
15 been submitted as part of the NOI. There might be
16 something different in there.

17 But in due regard for the fact that we don't
18 want to spring anything on anybody and we don't want any
19 surprises at this, I would say why don't I give you,
20 Living Rivers, the seven days that the court reporter has
21 to give me a transcript to craft a response to what that
22 document is. And, you know, you don't have to belabor
23 it. Keep it brief. But at least give me an idea of what
24 you think is in there, whether you object to it or not.

25 MR. DUBUC: So a week from today, is that what

1 you are?

2 HEARING OFFICER BAZA: Yeah. Because Michelle
3 will try to get me the transcript within a week. And I
4 certainly will not finalize a decision on this before
5 then.

6 MS. DRAGOO: And we'd have an opportunity to
7 review that, as well, in the event it raises something
8 new?

9 HEARING OFFICER BAZA: I believe we should be
10 open with everybody. I mean, the things that are
11 presented here are public documents. They're part of the
12 Division's file. Your response will be part of the
13 Division's file. And you'll certainly be able to look at
14 that as well.

15 MR. DUBUC: I will serve that on you and on the
16 Division as well.

17 MS. DRAGOO: Thank you.

18 MR. DUBUC: Is electronic fine?

19 MS. DRAGOO: Sure. That would be fine.

20 MR. DUBUC: Steve, electronic, my response? Is
21 that fine?

22 MR. ALDER: Yeah, that's fine.

23 HEARING OFFICER BAZA: So, since we're pushing
24 the time limit here, I need to conclude this. And I'll
25 do this by saying that I'll take the evidence and the

1 information presented here, your answers to my questions
2 under advisement. And within a reasonable amount of
3 time, I'm going to issue a final order on this,
4 determining whether the applicant met the relevant rules
5 and if a final Notice of Intention should be approved.
6 Again, that will not happen before the week that it takes
7 me to get the transcript and your response and all of
8 that. So all of that will be under consideration.

9 I'd like you to know that any party who
10 participated in the hearing today has an appeal right.
11 And they may appeal that final order within ten days of
12 the day I issue it, pursuant to Utah Administrative Code
13 R647-5-106 Part 9.

14 I want to thank everyone that was here today. I
15 think this has been constructive. It really has, for my
16 benefit. I appreciate the hard work the Division has put
17 in. I know that Red Leaf has put a lot of hard work into
18 this. I'm glad that we've had the opportunity to listen
19 to Living Rivers and your comments and your concerns.
20 And honestly, I am going to take all that under
21 consideration as part of a final decision on this. So I
22 appreciate it. I hope you've all found it somewhat
23 constructive.

24 But know that we're not going to belabor this.
25 I hope to issue the final decision not too long after all

1 these documents come in to me.

2 MS. LEWIS: And just as a clerical note, the
3 appeal is at 106(17) not (9).

4 HEARING OFFICER BAZA: Thanks.

5 MS. NELSON: Director Baza, as the proponent for
6 Red Leaf and lead for Red Leaf here, would it be all
7 right if I made one final comment? I don't think it will
8 introduce anything new.

9 HEARING OFFICER BAZA: Okay. All right. Go
10 ahead.

11 MS. NELSON: First of all, I just want to thank
12 you, especially for organizing our conference today. I
13 do agree it is an important discourse and very
14 informative.

15 I also want to note that we do respect Living
16 Rivers' concerns. And I think with that regard, we have
17 pursued a very diligent effort to address concerns, and
18 that we will do so, also, in the DWQ process.

19 We do recognize that there are different
20 agencies from which we must seek permits. And in
21 response to the tentative approval, we did pursue that
22 process with DWQ and in concurrence with their letter
23 that they submitted to us, similar to how we'll pursue
24 all other processes. And it is our effort to be as
25 transparent for the State so that they can fully review

1 the efficacy of our process in the field. And I think
2 that the documents that we've provided not only meet the
3 Division's rules, but also, I think, fulfilled that
4 obligation on the part of Red Leaf.

5 And the reason I wanted to mention that is
6 because Mr. Dubuc did dispute -- or did state that he
7 disputed Red Leaf's ability to make that claim. And so I
8 thought it was important that we also be able to say that
9 we are committed to that diligent effort and that we
10 ought to have a right to make that claim. Thank you.

11 HEARING OFFICER BAZA: Thank you.

12 Well, I appreciate everyone's attendance today
13 and also those people who are here to observe. We'll
14 move forward on this. My intent is to make progress. So
15 thank you.

16 MS. DRAGOO: Thank you.

17 (The matter concluded at 11:23 a.m.)
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CERTIFICATE

State of Utah)
 ss.
County of Salt Lake)

I, Michelle Mallonee, a Registered
Professional Reporter and Notary Public in and for the
State of Utah, do hereby certify:

That the proceedings of said matter was
reported by me in stenotype and thereafter transcribed
into typewritten form;

That the same constitutes a true and correct
transcription of said proceedings so taken and
transcribed;

I further certify that I am not of kin or
otherwise associated with any of the parties of said
cause of action, and that I am not interested in the
event thereof.

WITNESS MY HAND at Salt Lake City, Utah,
this 28th day of February, 2012.



Michelle Mallonee
Michelle Mallonee, RPR, CSR

A6016FC

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

<p>A</p> <p>ability 85:7</p> <p>able 50:8 63:20 82:13 85:8</p> <p>above-referenced 55:12 57:4</p> <p>absence 25:19,25 26:8,12 26:17,20 47:3 51:13,13</p> <p>absolutely 44:10 58:16 64:6,7</p> <p>accept 44:2</p> <p>acceptable 11:16 51:18</p> <p>accommodate 34:2</p> <p>account 7:4,6 18:23 19:13</p> <p>accounts 19:3 36:8</p> <p>accurate 20:2 70:18</p> <p>achieve 11:5 74:4,10 75:24</p> <p>acknowledge 35:1,4,24</p> <p>acknowledges 24:22 25:7 32:9</p> <p>acre 21:13,13</p> <p>acres 14:4 15:10 20:12 20:19 54:21</p> <p>Act 9:2 69:18</p> <p>action 86:12</p> <p>Actions 55:11 57:3</p> <p>activities 19:23</p> <p>actual 5:9 33:4 78:12</p> <p>adapt 54:25</p> <p>add 60:1</p> <p>added 38:3</p> <p>addition 26:24 33:10 36:15 37:5 39:8,13 40:1 55:24</p> <p>additional 10:8,18 20:18 22:25 30:4 46:14,18 55:24 68:21 73:9,14 78:6</p> <p>additionally 8:14 77:9</p> <p>address 10:5,7 32:2 35:24 42:19 46:16 47:2 49:6,18 51:24 54:20 73:21 75:2 80:21 84:17</p> <p>addressed 17:18 38:3 40:17,24,24 41:5 46:20 68:22,22 77:16</p> <p>addresses 55:21</p> <p>addressing 12:17 42:17</p> <p>adequate 7:12 37:22 43:5 57:20 59:20</p> <p>adequately 7:4 19:3 36:8 37:16</p> <p>adjudicated 8:7,8</p> <p>Administration 14:6</p> <p>administrative 2:24 8:20 8:22,23 9:1,2,12 38:21 83:12</p> <p>admittedly 17:20</p> <p>advance 63:11</p> <p>advisement 83:2</p> <p>Advocates 3:17 9:6 16:11 49:25</p> <p>aerial 70:22,24</p> <p>affect 33:24 34:6 55:15 56:18</p> <p>afraid 70:9</p> <p>agencies 11:21,22 62:13</p>	<p>62:22,24 63:25 64:21 84:20</p> <p>agency 17:23,24,25 19:1 19:8 21:23 22:4,6,12 22:23 23:9 63:11,19,20 63:22 64:22 66:20</p> <p>agency's 17:22 22:8</p> <p>ago 18:13 70:2</p> <p>agree 84:13</p> <p>agreed 8:15 9:8 22:9 37:6</p> <p>ahead 5:4 13:15 17:9 35:6,14 62:2 77:10 84:10</p> <p>Alder 2:10 4:18 12:8,9,9 12:16 13:19 17:6 49:3 50:19 52:2,15 53:1,5 53:17,20 54:10,19 60:9 78:1,9 80:1 82:22</p> <p>alkaline 34:9</p> <p>allegations 38:18 40:15</p> <p>alleges 7:3</p> <p>allotted 46:7</p> <p>allow 10:7 17:12 18:3 21:12 23:11,12 26:19 45:24 46:6</p> <p>allowed 15:13</p> <p>amended 14:17,24 28:17 30:23 42:20 53:11 57:21</p> <p>amending 79:19</p> <p>amendment 78:21 80:3,4 80:5,10</p> <p>Amendola 3:13 13:6 46:24 73:23,23 76:14 76:17,21</p> <p>amount 22:22 38:4 72:23 83:2</p> <p>analysis 11:7 29:4,14 30:4,11 31:12,23 32:19 33:22 37:22 40:21 41:13 55:2 57:7 60:15 60:18 65:11 73:9 77:12,14 80:14</p> <p>analyze 54:17</p> <p>analyzed 37:16 72:25</p> <p>and/or 28:14 34:9</p> <p>Annotated 7:20,21,25 8:5 8:19 9:3,11,15</p> <p>answer 54:19 57:19 58:6 65:20 70:12 72:1,21</p> <p>answers 83:1</p> <p>anticipate 9:25</p> <p>anybody 11:11 81:18</p> <p>anyway 81:11</p> <p>apologize 13:21 15:22</p> <p>apparently 40:11 55:10</p> <p>appeal 10:23 83:10,11 84:3</p> <p>appealable 6:16</p> <p>appear 81:14</p> <p>APPEARANCES 2:1</p> <p>appearing 12:9</p> <p>appended 68:5</p> <p>appendices 81:13</p> <p>appendix 36:1,1 37:17,24 38:4 40:5,18,22 46:21 65:2 68:6</p> <p>applicant 6:12,16 9:6 10:20 42:5 83:4</p>	<p>application 11:8 13:16 15:19 16:3 22:7,21,21 24:13,25 25:4,7,11 26:21 27:2,7,10 28:4 28:22 32:16,24 33:10 35:25 38:13 40:5,18,24 41:6,13 46:19 47:1 49:12 55:4,21,24 56:3 60:2,14 64:15,25 66:21 66:25 67:4 68:17 73:3 73:4,24</p> <p>applied 49:9</p> <p>apply 22:3 34:6</p> <p>appreciate 23:22 77:6 83:16,22 85:12</p> <p>approach 21:9 70:3</p> <p>approaching 80:23</p> <p>appropriate 12:13 31:11 39:16 49:5 52:17 57:14 64:22 72:18</p> <p>appropriately 41:11 52:22 68:22</p> <p>approval 6:8 16:4,5,19 17:22 18:6 21:20,21 22:5,8,20 40:2,12 57:9 61:5,10,13 64:8,18 65:8,9,12 66:8,11 67:6 73:1 77:11,17 84:21</p> <p>approve 6:23 17:1 21:23 22:25 23:10 42:9</p> <p>approved 6:18 10:21 22:23 66:20 83:5</p> <p>approximate 33:21</p> <p>approximately 10:3 21:6 28:2,5,13 31:2 67:1</p> <p>April 15:20 39:25 41:3 65:12</p> <p>aquifer 25:1,8 27:12 39:14,15,18 47:16 48:14 58:22,22 59:4,24 60:9 70:16 72:8,9</p> <p>aquifers 7:15 25:5,14,23 27:16 28:12 37:2 48:4 48:5 51:10 59:3 70:14 70:20 71:10 72:13</p> <p>Arabia 18:8</p> <p>area 7:5,7,14 14:4,24 15:15 22:17 25:6 26:11 37:20,22 39:3,8 39:12,22 48:4,14 49:17 50:13 63:1 64:2 71:6 74:21</p> <p>areas 7:1 25:9 26:3 47:18 50:1 62:24</p> <p>argument 45:4 67:18,20 68:14,16</p> <p>Army 29:3</p> <p>aside 19:7</p> <p>asked 13:20 23:1,2 68:21 73:14 80:8</p> <p>asking 21:12 23:11,14 34:20 73:8</p> <p>asks 5:21</p> <p>aspect 75:21 78:24</p> <p>assemble 43:16</p> <p>assert 59:2</p> <p>assertion 21:24 64:3</p> <p>assertions 43:25</p> <p>assessment 42:3 52:3,6 56:13,16 63:4 72:8</p>	<p>Assistant 2:21,24</p> <p>assisting 13:11</p> <p>Associate 2:15</p> <p>associated 19:14 20:6 25:14 86:11</p> <p>Associates 3:12</p> <p>Association 70:2</p> <p>assume 12:7 73:15</p> <p>assuming 44:8</p> <p>assumption 32:20 64:10</p> <p>assumptions 76:11</p> <p>assurance 73:22</p> <p>ATKINSON-BAKER 1:21</p> <p>attached 36:2,20,24 38:14,17 73:4</p> <p>attempt 71:25</p> <p>attendance 85:12</p> <p>attention 5:22</p> <p>Attorney 2:5,10 13:10</p> <p>author 47:1</p> <p>authority 61:20 69:16,21 69:23</p> <p>avian 71:22</p> <p>aware 18:7 80:20</p> <p>a.m. 1:18,18 5:2 81:2,2 85:17</p> <p>A6016FC 1:24</p>	<p>67:12,13 70:11,20 77:5</p> <p>Bayer's 54:7</p> <p>Baza 2:2,4 4:22 5:4,6 11:13,17 12:3,5,15,19 13:2,9 16:17,22 17:4,7 17:9,15 23:8,22 34:18 34:23 36:5 43:4,14 44:5,11,22 45:5,17,19 46:2,10 48:21,25 52:1 53:23,24 56:7,21,25 57:2,6,12,17 58:9,13 58:17,24 59:13,19,25 60:11 61:8,12 62:7,16 64:3,24 65:10,19 66:4 66:17 67:10 69:17 70:7 71:1 72:22 73:18 73:19 76:1 77:3,6 78:9 78:16,22 79:5,8,25 80:23 81:3,7,13 82:2,9 82:23 84:4,5,9 85:11</p> <p>bearing 38:8,9</p> <p>bedrock 24:6 25:15 47:10</p> <p>began 67:15</p> <p>beginning 5:7 49:23 80:8</p> <p>behalf 13:4,7 68:3 70:1</p> <p>belabor 81:22 83:24</p> <p>belief 28:19</p> <p>believe 7:18 15:24 17:10 22:2 49:17 53:5 62:10 65:7 68:9,11 73:12 82:9</p> <p>belt 53:15</p> <p>benefit 83:16</p> <p>benign 20:23</p> <p>bentonite 14:17,24 28:17 30:23 42:20 53:11 57:21</p> <p>best 13:23 58:14 68:20 76:10</p> <p>best-case 30:6</p> <p>better 19:11,21 58:6</p> <p>beyond 52:20</p> <p>big 48:15 71:13</p> <p>biologist 58:11</p> <p>bit 10:11 24:4 47:21 58:25 59:22 70:7 71:2 77:20 78:1</p> <p>blasted 14:13</p> <p>BLM 25:4</p> <p>Blvd 1:21</p> <p>Board 1:1 69:18</p> <p>Bob 3:15 4:16 13:7 46:25 47:2 67:12</p> <p>bodies 50:25</p> <p>bore 51:2</p> <p>bottom 14:19 20:17,18 24:16 30:19 76:9</p> <p>Brand 1:21</p> <p>break 81:2</p> <p>brief 9:23 12:13 13:16,20 17:16 19:7 20:8 49:15 81:23</p> <p>briefly 49:3,18</p> <p>bring 19:6</p> <p>bringing 18:3</p> <p>brought 11:23 50:1 56:9 60:2,3</p> <p>build 20:10,16,16 21:15</p> <p>building 6:2 20:14 21:5</p>
--	---	---	--	---

61:19 buildings 15:11 50:25 business 18:9 45:11 67:14	cleared 14:9 clearly 29:23 36:20 38:19 40:10,13 42:1 69:14 clerical 84:2 climate 20:1 closed 79:20 closely 75:10 closest 21:4 coal 19:11,13 Code 7:20,21,25 8:5,19 8:20,22,25 9:1,3,11,12 9:15 83:12 colleague 12:25 collected 30:18 combination 70:11 come 19:10 21:4 75:1 84:1 comes 18:21 69:16 commence 1:7 6:9,24 7:23 78:13,23 commencement 60:23 comment 7:16,19 9:17 12:20 16:11 17:18 35:15 49:5 50:17 51:6 70:13 74:24 76:4 79:5 79:13,24 84:7 commented 70:1 73:14 comments 6:7,11,13,19 6:21 9:18,22 10:2,5,8 11:1 12:12 23:23 35:3 35:9,12,16 61:9 73:7 77:7 83:19 commitment 76:22 committed 77:22 78:4 85:9 Committee 16:14 common 47:18,23 communicated 16:2 companies 19:22 company 13:5 21:4,8,18 22:6 23:2,7 71:3 company's 20:21 21:3 23:5 compartmentalized 47:19,24 60:6 70:14,21 72:11 compatibility 49:11 complete 15:5 22:6 63:22 completed 27:12,19 60:5 completely 29:15 complies 56:5 68:19 comply 61:23 62:2 80:22 component 46:25 compression 32:17 33:14 compressive 33:8 compromise 34:3 compromised 32:10 34:13,15 computer 29:2 concept 31:6 concern 37:25 38:24 66:5 concerned 42:15 concerns 18:15 35:24 37:13 44:6 49:19 83:19 84:16,17 conclude 24:1 25:23 26:19 29:24 34:12 51:9 82:24 concluded 85:17	concludes 34:16 conclusion 25:18 26:8 37:6 conclusions 56:13 concur 53:8 concurrence 84:22 condition 35:2,5 76:19 77:21 conditional 6:7 16:4 65:8 conditioned 40:3,13 41:11 42:9 61:5,14 64:7,8 conditions 30:7 61:25 77:20 conduct 30:3 conducted 6:1 8:18 27:12 conference 5:7 67:16 84:12 conferences 79:10 confident 68:25 confirm 37:21 74:10 75:24 confirmed 37:5 40:2 confirming 36:22 confirms 27:4 36:24 37:18 38:4 conflict 8:24 confusing 39:1 connect 71:22 conservative 21:9 74:22 75:5 76:11 consider 43:4,8 44:2 consideration 40:19 44:12 83:8,21 considered 52:19 64:17 67:3,7 considering 73:6 considers 25:4 consistent 70:3 constitutes 86:9 constrain 11:3 constructed 30:16 31:14 31:23 74:4 constructing 14:14 15:8 30:22 construction 31:10 69:9 69:13 74:2 constructive 83:15,23 consult 80:24 consultants 32:7 contain 26:1,13 33:22 48:3 contained 22:23 29:16 30:22 containment 67:20 73:11 74:11 contains 22:22 24:7,21 25:1 31:15 39:18 59:6 contaminant 71:8 contaminants 71:16,19 contamination 40:16 contend 68:12 contended 68:2 contends 18:14 35:18 contests 39:13 continue 46:7 59:2 62:21 75:11 contradict 29:15 contradicted 27:1 contradicts 24:18	contrary 38:11,18 convenience 43:17 conversation 67:15 conversations 51:21 65:14,21 66:2 conversion 8:15 9:9 convert 8:7 11:24 converting 8:12 convince 17:21 cool 15:14 cooled 21:1 Coordinating 16:13 copies 43:17 copper 54:22 core 38:5,6,9 39:7 59:21 Corps 29:3 correct 11:9 40:11 48:19 50:11 53:19 60:12 61:15 78:23 79:17 86:9 correctly 42:6 counsel 12:24 13:5,11 43:22,22 80:24 counter 43:5 counterproductive 21:22 counting 46:4 country 18:11 County 1:8 14:1,1 86:4 couple 46:16 74:12 course 9:8 16:10 23:12 40:1 41:18 49:10 64:21 65:10 court 1:21 5:16 12:21 81:4,20 cover 20:11 28:25 48:22 54:21 74:15,16,20 covered 14:18,20 covering 15:10 20:19 cracks 33:25 craft 81:21 creating 5:14 Creek 24:5,11,11,20,21 24:25 25:4,5,8,15,19 25:20 27:5 28:3,5,8,13 28:15 37:14,14 48:13 48:13 cross 50:12 crushed 14:13,21 30:16 CSR 86:17 current 19:9 currently 31:21 cut 53:1 cyclical 75:14 C1-C2 79:18	deal 55:19 62:25 64:1 dealt 18:17 49:8 Dean 2:15 December 73:3 decides 42:11 decision 6:23 10:17,23 17:1,22 21:23 23:13 35:2,6 40:1 58:3 60:17 60:18,21 61:10,14 63:6 63:22 64:5,19,23 66:6 67:2 82:4 83:21,25 deep 37:3 define 39:17 59:15 74:3 defined 58:21 59:4 80:4 definitely 52:12 definition 39:14,15,15,21 59:8,23 60:9 70:16 definitions 68:8 degradation 34:9 degree 56:17,19 degrees 32:5 delayed 79:3 deleterious 80:17 deliberations 43:8 67:3 deliberative 63:18 demonstrate 33:7 demonstrated 31:6 Denise 3:2 4:15 13:4 34:21 45:5 48:18,21 58:20 60:13 77:8 81:8 Department 1:2,15 6:2 39:17 59:4 61:24 69:24 departmentalized 47:20 47:22 dependence 18:12 depending 80:10 depends 78:24 80:3 deprived 22:13 depth 24:10,14 36:11,14 37:1,3 42:1 47:14 50:5 50:15 55:25 depths 27:20 48:1 DEQ 67:17 derive 63:20 describe 68:6,7 described 33:16 47:17 50:15 70:4,20 72:12 description 36:18 42:16 47:16 50:3 52:7 55:5 72:16 design 5:11 7:12 22:11 28:17 29:17 31:8,18 32:16 40:16,24 41:2 42:21 52:20,21 53:10 74:5 75:22,25 77:15 designed 21:16 29:16 52:16,18,22 74:14 designs 52:12 69:11 Despite 35:8 detail 23:20 detailed 37:16 40:20 41:18,19,20 52:10,11 details 15:16 determination 41:12,14 60:25 61:7 62:4 65:6 78:15 determine 49:11 56:16 determined 8:11 42:6 determining 6:16 10:19
--	--	---	--	---

<p>11:6 22:16 25:25 51:13 59:10 83:4 develop 18:3 development 3:10 4:1,3 16:13 18:7,10 devoid 43:23 differ 31:20 difference 79:23 different 42:13 63:25 80:1 81:16 84:19 differential 34:1,4 differntiated 70:22 difficult 17:21 71:13 difficulties 62:20 diligent 84:17 85:9 diminish 72:4 direct 17:24 23:14 directed 30:19 direction 49:23 directly 22:16 director 2:15,21 4:2 5:6 17:25 34:23 36:5 43:14 53:5 69:17 73:17 78:9 84:5 discharge 18:18 22:11,13 22:10 25:9 35:1,7,10 38:13 40:4,4,10,17,23 41:6,15,21 46:19 47:2 61:1 69:5,7,12 71:15 71:20 78:13 disclosing 21:7 discontinuous 72:4 discourse 84:13 discovery 12:1 discuss 19:19 29:13 32:5 34:4,7 63:14 discussed 35:21 65:3 discusses 25:8 discussing 16:10 26:5 discussion 4:22 5:13 31:18,19,21,22 34:24 38:3 52:3 53:23 72:7 81:6 displacement 33:19 34:2 dispute 21:2,3 85:6 disputed 85:7 distances 33:9 distracted 47:7 disturbed 14:4 Division 2:2,6,9,11,15,17 2:18,20,24 4:9,17 5:6 6:12 7:2,10,22,24 9:7 9:18,23 10:7 12:7,10 12:11 13:16,18 15:19 15:23 16:4,9 17:2,5 27:15 31:8 33:5 34:20 35:7,13 36:21,25 37:5 37:11 38:17 40:2,9,13 40:19 41:8,10,11,12,17 41:22,24 42:6,8,10,13 42:15 45:24,24 49:2,9 49:18 50:21 51:19 54:1,6,10,12 55:22 57:18 58:1 59:10 60:16,19,22,24,24 61:4 61:6,13,16 62:4,11,12 62:25 63:2,6,7,17 64:12,17 65:5 66:21,24 66:25 67:7,18,25 68:1 68:15,20 69:21 70:4</p>	<p>72:15 73:5 74:7 75:2 76:22 77:23 78:5,5,12 78:14,18 79:9 82:16 83:16 Division's 6:7 10:16 11:7 36:10 48:24 54:14,24 61:21 64:25 77:17 79:21 82:12,13 85:3 document 42:23 43:7 44:2,6 67:5 68:19 81:7 81:10,22 documents 33:22 81:14 82:11 84:1 85:2 DOGM's 7:9 61:9 DOG's 22:14 23:20 doing 51:18 doors 79:20 double 50:8 53:15 Douglas 24:11,20,25 25:5,8,15,19 28:3,4,8 28:13 37:14 48:13 downstream 71:24 Dr 3:10 Dragoo 3:2 4:15 11:21 12:4 13:4,4 34:23 43:1 43:9 44:18 45:1,9,13 45:18 46:1,8,15 47:5 48:19,23 58:22 59:1,18 59:20 60:20 61:11,15 67:9,11 73:17,21 77:18 78:3,10 79:17 81:12 82:6,17,19 85:16 drainage 47:11 draw 47:11 drawings 33:16 50:4,23 drawn 56:13 drill 26:13 27:17 47:6,9 drilled 26:10,22 47:11,12 59:21 driller 26:15 drilling 26:9,14,15 27:3 38:1,5,10 48:1 driver's 66:13 dropping 48:9 dry 75:15 Dubuc 3:18 4:12 11:13 11:20 12:23,23 17:11 17:14,16 34:16 42:22 43:2,21 44:10,16,21 45:6,10,15 62:10,15,18 64:6 66:16,19 79:6,7 79:22 81:25 82:15,18 82:20 85:6 Dubuc's 54:12 due 33:12 81:17 duty 22:3 62:1 DWQ 7:10 18:18 22:5,9 22:16,21 23:1,12 30:1 33:5 49:16 60:15,17 61:10,14 67:22 68:5 69:5 73:1,3,8,13 84:18 84:22</p>	<p>eastern 25:2 economic 20:1,7 EcoShale 40:15 41:2 42:21 edge 48:6,8,10,11 editorial 19:7 educated 58:7 effect 34:8 77:24 78:7 effectively 70:6 effects 23:3 31:19 efficacy 85:1 effort 84:17,24 85:9 either 20:25 25:21 31:9 31:13 51:7 72:5 elaborate 64:14 electrical 51:1 electronic 82:18,20 Elliott 3:24 4:13 12:24 23:23 46:13 Elliott's 38:12 Emily 2:5 13:10 45:21 encounter 26:10,25 47:9 encountered 27:2,20 38:1,5 48:1,17 60:2,5 encountering 46:22 encourage 42:8 ended 16:8 75:6 Energy 3:10 4:1,2 7:17 Engineer 2:18 Engineers 29:3 engineer's 38:20 EnShale 7:13 enter 29:19 entering 74:23 entire 14:3,22 40:3 environment 18:24 20:25 29:17 56:18 61:24 69:22 80:17 environmental 2:16 3:10 3:15 39:17 42:2 59:5 69:24 environmentally 20:22 20:23 eroded 48:6,15 erosion 47:15 especially 84:12 ESQ 2:5,10 3:2,5,18,18 establish 5:10 26:12 et 8:25 68:7,24 evaluate 29:21 30:4 31:8 33:5 evaluated 28:22 29:1 32:8 evaluation 29:2 31:17,25 34:14 event 8:24 11:22 52:20 77:18,23 78:5 82:7 86:12 events 52:18,19 75:15 eventually 15:5 everybody 13:14 82:10 everybody's 54:3 everyone's 85:12 evidence 7:8 9:17 10:17 25:18,22 26:7 27:13 39:7,10 51:9,22 82:25 exact 13:21 16:21 30:5 32:8 exactly 15:16,20 59:18 65:17 81:12</p>	<p>example 21:20 excavated 14:16 excerpts 35:23 exclude 43:7 excuse 16:22 47:6 executive 36:21,23 exert 32:15 Exhaustion 8:22 Exhibit 36:2,12,20,24 37:23 38:14,17 exist 33:13 existence 7:4 existing 39:2 51:2,3 exists 28:11 expand 23:3 expected 56:13 experience 54:24 58:6 experienced 58:8 68:23 experimental 19:13,24 20:5 expertise 41:23 52:23 53:6 54:4,7,24 55:23 58:15 62:24 63:19 experts 49:17 77:4 expired 32:21 exploration 26:9,15 31:15 exposed 76:24 exposures 48:12 extend 24:9 33:8 70:23 extended 76:25 extensive 49:16 71:14 extent 50:5 70:23,24 extra 42:19 extracted 24:9 extracting 15:4 extraction 30:8 31:1,24 32:3 34:13 63:15</p>	<p>felt 53:17 field 51:20 85:1 Figure 28:3 38:13 file 1:24 8:1 10:16 27:14 38:16 82:12,13 fill 63:19 final 6:15,17 8:6 10:21 10:22 61:10 63:22 64:8,23 77:11 83:3,5 83:11,21,25 84:7 finalize 82:4 finalized 35:14 finalizes 64:5 finally 10:6 25:11 38:15 55:11 find 79:21 fine 44:18 46:1,7 63:12 82:18,19,21,22 finishing 77:12 first 5:10 6:5 7:3 9:23 12:7,14 13:15 14:9 15:21 19:24 20:5 25:20 28:1 29:13 36:7 36:11 44:7,8 49:20 54:9,11 81:4 84:11 fit 19:21 47:16 five 11:16 53:12 54:21 fla 21:2 flaw 34:24 35:11 floor 1:21 28:14 flow 71:23 flowing 60:4 fluids 28:18 30:10 34:9 focus 41:24 focused 35:20 41:10 focuses 42:13 folks 5:4 65:14 67:16 followed 50:16,16,16 following 15:23 29:18 35:15 follows 9:20 foot 74:16 forego 7:18 foreign 18:12 form 44:14 50:8 79:18 86:8 format 5:13 7:22,23 8:2,7 8:12,16 9:10 11:24 16:1,1 formation 24:6,6,12 25:2 25:16 26:6 27:6 37:15 39:6,18 59:5 formations 27:18 37:15 48:12 51:8 former 69:17 forth 5:14 36:19,20 37:24 38:11,12 39:16 40:21 57:13 64:21 forum 63:14 forward 61:18 75:17 85:14 found 39:7,7 46:18 50:23 53:14 59:22 83:22 four 7:1 36:4 43:13 63:11 fourth 7:11 fractures 27:3 28:14 fracture-hosted 47:13 fracturing 47:14 frame 6:14 9:21,22 11:19 66:10</p>
---	---	--	--	---

frames 11:2
 framework 19:8 45:11
 Fran 3 13 13 6 42 18
 46:11,14,15 73:21,23
 frankly 9:20 72:6
 free 18:11
 front 75:15
 fulfill 22:14
 fulfilled 85:3
 full 12:20 22:19 37:23
 fully 29:16,17 84:25
 fully-contained 67:21
 fun 77:5
 function 41:17
 functioning 32:11
 further 32:1 50:17 77:13
 86:11
 Furthermore 25:6 26:4
 30:11 32:9

G

G 5:1 37:23
 gallous 29:6,9,12 76:13
 game 64:9
 gap 63:20
 Garrison 2:21
 gas 1:1 2:2,9,15,17,18,20
 2 21,24 9:7 34:8 41:8
 41:24 51:2 60:19 61:4
 61:16 62:12 63:2,17
 76:22
 general 14:8 25:5 42:16
 52:6,10 54:23 55:3,5
 60:10 72:16
 generalization 70:19
 generally 45:11 49:17
 General's 2 5,10 13:10
 generate 23:6
 geologic 27:11,18 39:18
 50:6,8,10 59:5
 geologist 13:8 26:16
 47:13 54:25 58:12
 geology 24:5 53:12 68:7
 geometry 31:21
 geotechnical 32:19
 getting 15:16 77:5 78:4
 Gibson 4:3
 give 12:20 20:13 21:20
 43:6 44:14 45:17 53:3
 62:19 64:8 66:10
 81:19,21,23
 given 47:11 67:20
 gives 80:3
 glad 56:9 83:18
 Glendale 1:22
 go 5 4 13:15 15:3 17:9,24
 21:12 35:6 46:23
 48:24 49:20 54:9
 61:18 62:1 64:20
 71:19 77:13 84:9
 goes 60:20 64:14 72:10
 going 5:8,20 6:20,21,25
 7:18 9:21,23 10:1,2,3,5
 10 6,10,13 11 2,18
 13:12 34:19 35:10
 36:3,7 43:4 44:2 45:19
 45:20 53:25 55:19
 57:13 58:18 61:2 62:7
 63:10 64:13 69:6 75:1
 75:11,23,24 77:8 79:12

83:3,20,24
 good 5:5,23 12:23 17:15
 48:20 55:20 58:2
 59:17
 govern 9:2
 government 62:13
 Governor's 16:13
 graded 15:14
 granted 9:9
 gravel 14:20,23 30:24
 74:18
 gray 64:1
 great 3:24 13 2 34:23
 41:20 55:19 62:25
 64:1
 greater 75:13
 Green 24:5,12 25:1,15
 26:6 27 5 37:15
 ground 24:10,15 27:8
 groundwater 7:5,7,9,15
 18:16,18,22,25 19:3,5
 22 3,6,17,21 23:4 24:1
 24:13,14,24 25:3,6,7
 25:11,13,19 26:1,8,10
 26:12,18,19,20,21,25
 27:1,5,7,9,19,21,22
 28:4,12,21 32:15,24
 33:10 35:1,7,10,23,25
 36:8,12,14,18 37:1,4,6
 38:1,2,13,25 39:8,11
 40:4,10,14,17,23 41:6
 41:15,21 42:1,3,16
 43:19 46 17,19 47:2,3
 47:19,24 48:3 49:7,7
 49:12 50:5,15 51:14
 52:9 53:9 55 7,25 56:3
 57:21 59:11 60:1,7,12
 60:13 61 1 63:1,3
 64:10,12,15 66:5,20,23
 66:25 67:4,14 68:7,9
 68:10,13 69:4,8,12,25
 70:8,14,21 71:5,14,17
 71:21,22 72:10,12,14
 72:19 73:25 77:12
 78:13
 group 46:21
 guess 46 15 54 9 72 3

H

hair 47:8
 half 66:3
 HAND 86:13
 handle 12:11
 hang 80:25
 happen 14:8 71:11 83:6
 happening 5:24 54:6
 happens 77:20
 hard 5:18 19:12,17 21:19
 57:18 63:10 67:7
 83:16,17
 hard-pressed 63:5
 Hartley 3 12:12
 heading 19:10
 hear 5 15 17:10 34:19
 45:23 47:21 66:17
 67:10 73:20 78:2,9
 heard 34:25
 hearing 1:6 2:2,4 4 22
 5:4,6,9 6 1,5,15,15
 7:22,22,23,23 8:3,11

8:12,12,13,17,18,20
 9:4,19,24 10 15,15,19
 10:22 11:5,10,17,21,24
 12:3,5,15,19 13:2,9,11
 13:14 16:17,22 17:4,7
 17:9 34:18 42:25
 43:17 44:5,11 45:5,17
 45:19 46 2,10 48:21,25
 49:6 52:1 53 23,24
 56:7,21,25 57:2,6,12
 57:17 58:9,13,17,24
 59:13 19:25 60:11 61:8
 61:12 62:7,16 64:3,24
 65:10,19 66:4,17 67:10
 70:7 71:1 72:22 73:19
 76:1 77:3,6 78 16,22
 79:5,25 80 23 81:3,7
 81:13 82 2,9,23 83:10
 84:4,9 85:11
 heat 15:2 32:10,12
 heated 30:15 32:4
 heating 15:3 20:25 30:8
 31:1,24 32:3,13 34:13
 heat-conducting 30:17
 heavily 70:1
 height 31:3
 held 81:6
 help 10:13 15:1 18:11
 29:2 30:4 54:10 70:11
 71:1 74:13,14,19 75:24
 76:5,7
 helping 12:10
 Heppler 2 18 4 19 49 22
 49:22 53:10,19 66:1,8
 67:16
 high 23 6 75:5
 highly 58:7
 highway 66:12
 high-level 33:2
 history 9 24 13:16,20
 hold 66:15
 hole 27:3,4 38:10 47:6,9
 47:10 60:3,4
 holes 26:10,21 38:5,6
 51:2 59:21
 bone 54:13
 honestly 83:20
 hope 11:5 78:9 83:22,25
 hopefully 10:11 80:19
 horizon 38:9
 host 48:3
 hour 66:3,3
 hours 10:11 80:24
 hundred 27:25 37:8
 hundreds 52:24
 hydrocarbon 29:19 71:9
 hydrocarbons 30:22 31:5
 hydrologic 12 18 29 1
 37:16 46:25 70:8 71:5
 72:6
 hydrologist 2 19 13:8
 50:21 52 24 54 24
 58:12
 hydrology 37:24 80:18
 hypothetically 77:10,13

I

idea 81:23
 identification 36:11
 identified 7:1 25:12

36:12 37:3 38:19 42:2
 51:5
 identifies 13 13
 identify 36 13 51:15 57:7
 59:16
 identifying 51:17 52:7
 55:6 72:16
 impact 22 17 32 6 36 17
 52:3,5 56 12,15,17
 68:10 71:5,11,12 72:8
 80:14
 impacted 24 2 51:10
 72:20
 impacts 7 7 18 21,24
 19 4 27 21,23 28 20
 34:14 36:19 52:8,8,11
 53:9 55:7,7,8,9,13,15
 57:4,7 63:3,3,4 66:23
 71:3,23 72 9,10,17,17
 impermeable 21:12
 29:24
 Implementing 8 25
 imply 19:25
 importance 72:5
 important 75:21 84:13
 85:8
 importantly 26:1 29:21
 31 24 75 23
 impossible 67:2
 impression 62:18 80:13
 inaccurate 39:1
 inappropriate 44 23 45:2
 include 57:15 72:11,13
 81:5
 included 7 1 44:12 57:10
 59:17 64:25 65:2
 81:14
 including 18:24 50:5
 55:7
 inclusive 57:8
 incomplete 28:10 32:1
 inconsistencies 39:10
 incorporate 75:14
 incorporated 73 4
 incorrect 22:8
 incorrectly 40:8
 increased 29 10
 indicate 10:24 29 4 49:13
 62:16
 indicated 17:10 39:23
 61:8
 indicates 28 11
 individually 12:11
 indulging 81:4
 industries 19:21
 industry 18 3 52 12
 inferences 66:14
 inform 63:2,19
 informal 8 8,12,17,20,21
 9:10,13 10:25 42:24
 79:10
 informally 8:18 15:25
 information 6:19 7:12
 10:16,18 16:23 22:9,14
 22:15,22 23:1,2,8,13
 23:16,25 24:17,18
 27:10,16,18,19 28:11
 30:12 31 13,16 32 25
 34:11 37 18 39:24
 43:16 50:7 52:13

55:25 57:10,20,24 58:3
 59:16,20 60:14,14 63:8
 63:21 67:2,6 73:13,15
 74 7 83 1
 informative 84:14
 informed 23:17 64 19
 inholding 14 7
 initial 31:3 39:24
 initially 41:1
 input 44:14
 inquiries 53:25
 instance 23:5 59:3,21
 61:16,19 63:1
 Institute 7:17
 instructed 30:3
 insufficient 24:1,17
 25:22 26:11 34:12
 51:9
 insulation 74 18 75:8
 intact 30:7,13 33 11,17
 33 22
 integrate 60:18
 integrity 31:23 32 2,6,9
 33 24 34 3,7,12,15
 41:19 42 14,20 72:24
 75:21
 intend 40:9,9
 intended 21:11
 intends 7:8,9
 intent 13:7 35:14 37:12
 38:15 41:9,25 42:9
 43 18 61 22 78:8
 85 14
 Intention 1:7 6:9,17,23
 83:5
 interact 62:22 65:15
 interaction 65:20,25
 interest 8:9,13 45:20
 interested 74:8 86:12
 interesting 67:24
 intervene 8 2,4
 intervention 9:9,13
 intimate 5:12 10:25
 introduce 12:6,17 44 23
 45:2 49 21 84 8
 introduced 32:12 45:23
 71:17
 introduction 12:13 42:23
 inventory 26:3
 investigate 49:11
 investigation 33 1
 investigations 33:2
 investors 20:2
 involved 74:9
 isolated 27:24 29:17 37:2
 37:8 70:16 72 4,13
 isolation 38:25 46:17
 47:4
 ISRAELSEN 3:6
 issuance 10 21 40:14
 41:11
 issue 6:15 10:19 12:1
 32 8 40:16 41:9,14
 42:11 47 3 55:9 56:2
 69:8,13 73 9,12 75:19
 83:3,12,25
 issued 8:6 16:4,18 22:4
 22:19 36 21 37:11
 60:16 61 19 62:3 65 8
 65:12 78 14

<p>issues 9:17 10:12 12:18 17:18 18 15,17,21 36:4 40:25 42 11,19 43:13 46:16 49 6,7,8 55:21 80:21</p> <p>issuing 25:21 26:5 51:7 item 17:10 36:4,4 50:5 iterative 57:13</p> <hr/> <p>J</p> <p>JBR 3:15 Jeff 3:12 Jennifer 7:16 16 11 John 2:2 3:22 4:2 5:5 49:23 Joro 3:18 12:25 judges 58:5 judgment 58:14,15 judgments 58:8 Julian 4:2</p> <hr/> <p>K</p> <p>K 38 18 keep 11:19 32:10,17 81:23 keeping 10:14 Kennecott 54:21 kerogen 15 4 key 25:5 28:19 kin 86:11 kind 5:10 15:17 19:24 20:5 44:14,21 45 7 54:13,25 57 12 63:9 67:24 69:14 71:11 80:25 know 5:18 11:17 18:19 26:14 34:18 42:18 44:15 46:14 55:14 58:6 61:1,21 65:16,22 66:14 69:20 70 9,15 71:13 72 1,6,18 74:25 81:22 83:9,17,24 knowledge 54:3 known 24 15 knuckle 32:16</p> <hr/> <p>L</p> <p>labels 19:25 20:2 laboratory 31:11 32:25 lack 26 18 Lake 1:16 2:7,12 3:4,7,20 6:2 16:6 86:4,13 LANCE 3 5 land 14:5,5,9 Landfill 29:2 landing 51:1 Lands 14:6 large 1:7 6:9,24 9:1 20:14 54 15,20 larger 54:21 70:22 lasted 66:3 late 45:15 Laura 3:10 13 5 LaVonne 2:21 law 23 18 layer 14:16,18 20:17 28:18,23 29 5,8,11,23 29:23 30:1,7,12,23,24 33:11 42:21 74:1,2 76:9</p>	<p>layers 30:17 leachate 23:6 lead 4:22 84 6 leading 9:24 Leaf 1:7 3:1,11 4:14 6 8 6:24 7:8 9:6 10:4 13:3 13 5 18:4,14 19:23 20:3,10 21:17 22:2,9 22:20 23:1 24:7 26 9 26:24 27:8,17 28:7,16 28:22 29:21 30:2,3,14 30:21 31:7,14 32:9,18 33 6,7,20 34 20,22 35 6,9,18 36:15,22 37:10 39:13 40:8 43:13 46:4 49:19 58 18 59 9 65:23 68:3 68 25 71:2 73:8 77:22 78:4,21 83:17 84:6,6 85:4 Leaf's 17:23 20 9 21 21 21 24 28 19 29 4 30:8 32:7 37:6 39:6 59:14 60 17 85:7 leak 20:24 leakage 7:13 LED 53:23 leechate 20:25 29:22 leeway 10:9 17:12 left 10:11 legal 13:11 43:22,22,23 LEHNHOF 3:5,6 length 41 20 lenses 25:14 Leslie 2:18 4:19 12:17 49:20,22 53 7 54:4 58:10,12 65 19,25 67:16 lessen 55:2 letter 7:2,19 16:2,11 17 19 18 13 30:2 36 6 40 7,22 43 15 20 44:1 44:15 49:25 67:12 68:4,16 69:3 81:11 84:22 letters 16:9,12,14 let's 5:4 67:10,13 71 8 77:10,13 level 15:6 74:5,10 Lewis 2:5 13:10 84 2 liberated 30 15,18 license 66:13 light 23:15 lightly 18:1 likelihood 76 24 limit 6:21 82 24 limitation 11:15 limited 20:7 56:4,4 62:23 71:4 limiting 9:20 49:23 line 26:7 27:13 liner 31 19,19 lines 25:17 51:1 Lips 3 24 4:13 12:24 17:17 20 5 23 19,22,24 32:22 35:21 43:9,24 54 7 69 2 70:11,17,18 71 12 73 2 76:3,16,20 77:2 list 6:25</p>	<p>listen 83:18 literature 39:3 little 10:11 24:4 27:15 38:2 46 5 47:21,24 58 25 59 22 70:7 71:2 78:1 live 39:4 Living 1:6 3:23 4 11 6 22 7:3 9 5 10:1 12 22,24 17:11,13,20 34:25 35:16,24 36:5 37:13,25 38:18,24 39:9,14,23 40:7,11 43 15 44:3,24 46:13 54:2,11 59:2 62:8 81:20 83:19 84:15 LLP 3:6 load 33:12,13 local 7:15 36:8 61:17,19 localized 25:13 28:12 71:21 located 37:21 location 27:11 38:20 locations 53:15 log 27:11 logical 29 24 logs 26 13 27:17 38:11 long 48 6,15 75:12 83 25 longer 75 1 long-term 23:3 look 5:18 13:21 15 22 36:12 44:13 45:6,21 56:15 74 14,20,25 75:11 82:13 looked 29:9 looking 73:6,15 75:10,20 76 9 81 8 looks 11:23,25 16 25 55:22 loose 80:25 loses 31:2 loss 32:2,14 47:8 lot 56:1 72:7 83 17 low 27:25 37:8 53:12 lower 29:23 30 1 75:17</p> <hr/> <p>M</p> <p>magnitude 71 10 Mahogany 24:8 28:3,5,9 39:4 Main 3 6 major 38:8 majority 24:7 making 5:20 60:18 61:7 80:9 Mallonee 1:19 86 5,17 Manager 2:16 4:2 map 50 8,8 mapped 25 21,24 37:19 51:7,11 maps 50:3,23 51:12 marlstone 37:9 marlstones 27 25 match 77 4 79:22 material 14 12 39:19 46:14 50:6,14 59:6 74 18,20 materials 36:2 80:17 matter 1:6 21 4,18 85 17 86:7</p>	<p>matters 69 20 mean 44:22 46:12 53:1 54:11 57:22 61:23 62:19 65 13 66:11 71:2,8 82:10 measure 43:5 medium 26 22 meet 23 20 59 23 63:13 66:12 85 2 meeting 5:11 13 13 19:18 51:25 meets 36 15 63 12 65 7 member 24:5 7,11,11,25 25:15 27 5 28:3,5,8,13 28:15 58:2,5 69:18 members 25:5,21 37:15 37:23 mention 16:18 74:12 85:5 mentioned 69:2 met 6 17 10:20 35:18 36:22 37:10 42:5,7 52:13 66:9,9 83 4 method 31:5 51:18 methodology 51 16,16 mice 60:8 Michelle 1:19 82:2 86:5 86:17 migration 28 18 30:10 miles 20 20 28:7 70 23 70:24 Miller 26:5 million 20 20 mind 60 17 63:9 mine 1 7,8 6:9,10,18,25 7 6,7,14 12:14 13:21 13:24,24 14 3 22:18,25 23:10 26:11 28:14 43:11 51:10 54:20,22 56:1 69:18 80:22 mined 27:17 mines 19:16 52:25 53 9 55:19 minimize 9:21 minimum 23:10 80:16 mining 1 1 2:2,9,15,15 2 17,18,20,24 6:24 9 1 9 7 14:9 15:17 18:11 19:12,15,17 24:2,9 27:23 28:24 37:7 41:8 41:25 51 4 54:15 60:19 61 4,16 62:12 63:2,17 70:1 71:3 76:22 77:14 78:12,23 80:8 minus 74 6 76:6 minute 5:8,15 16:23 45:17 46 12 57:19 80:25 minutes 9:25 10:3,6,8 11:14,16 17:11 32:21 32:23,23 45 24 46:5,6 mistake 17:24 54:13 mitigate 55:12 57:3 mitigation 49 13 52:3 56:16,19,20,23 57:11 57:15 mitigations 57:8 model 23 7 30 4 74 13,14 74:19 75:12,14 76:5,8</p>	<p>76:9 modeling 23:3 31:12 33:1 68:24 73 10 74 21 75:4 modification 78:20 modified 80:21 modify 77:19 78:7 moisture 74:14,20,23 75:5,16 monitoring 55:17 74:9 77:24 78:6 80:19 month 15:21 35:4 months 15 21 18:6 19:19 22:19 63:11 65:13 67:5 morning 5:5 12:23 17:15 mouth 54:12 59 14 move 75:16,17 85:14 moved 77:10 movement 25:8 34:1,2 moves 74 20 Munson 2:19 4 20 50:18 50:20,20 52:5,16 53:3 65:21 M/047/0103 1:8 6:10</p> <hr/> <p>N</p> <p>N 1 21 4:7 5:1 name 5:5 17:15 73:23 names 12:20 narrated 81:10 narrative 36:18 50:3,14 52:7,10 55:5 72:16 narrow 41:24 narrowly 35:20 41 9 natural 1:2,15 2:6,11 6:2 53:11 naturally 53:13 nature 19:13 near 14 1 25 22 27 3 51:8 nearby 25:12 26:3 27:14 36 25 38:16 nearly 35 4 necessarily 5 13 necessary 5:17 50:4 69:13 need 11:9,24 18 10 38 22 44 3 61:23 63:8,10,16 74:16,25 78:10 79:3 80:21,24 81:5 82 24 needed 22:14 63:2 68:11 needs 12 1 23:13 32:11 56:16 neglected 60 3 neither 27:9 Nelson 3 10 13:5 84:5,11 never 20:3 31:6 67:25 68:1 new 11:23 12:1 19:14,21 23 16 31 6 8 43 19 63:15 77:21 82 8 84:8 newspapers 16:7 night 60 8 nods 67:23 NOI 7:3,6,11 17:23 19:2 20:4,10 21:24 22:5,23 23:20,25 24 17,19,22 25:3,17,20 26 1,4,8,13 26 25 27:9,13,22 28:1</p>
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A6016FC

HEARING ON LIVING RIVERS' PROTEST OF RED LEAF RESOURCES FEBRUARY 23, 2012

<p>29:13,15 30:11 31:12 31:15 32:1,5 33:17 34:4,7,11 35:23 36:1,8 36:13 37:17 39:2,24 41:4,5,12 46:20 49:11 50:7 51:6 54:15,20 55:4 57:11,15 59:9,17 61:10,18 62:3 64:10,16 65:1,7,11 66:6,8,19 68:6 73:5 77:11,17,19 77:21,25 79:12,19 81:15 non 18:15 19:10,12 non-revegetated 76:18 non-vegetated 29:7 normal 64:21 North 1:15 2:6,11 northern 25:9 Northwest 13:7 Norwest 3:14 32:7 40:25 41:1 47:12 Notary 86:5 note 5:20 11:2 84:2,15 noted 19:1 23:8 40:21 79:9 notes 5:19 notice 1:7 6:8,17,23 8:16 8:16 13:6 16:6,8,19 35:14 37:11 38:15,21 41:9,25 42:9 43:18 61:22 78:7 79:24 80:3 80:5,11 83:5 noticed 7:22 notified 22:5 notify 66:24 notifying 77:23 November 6:22 16:8 35:3,14 49:24 Nowoslawski 4:2 number 50:10 55:17 65:22 numbers 76:7,15,18</p> <hr/> <p style="text-align: center;">O</p> <hr/> <p>O 5:1 object 42:23 81:24 objections 55:10 objectives 42:12 obligation 23:18 49:10 85:4 obligations 22:15 observation 26:19 observations 26:16 47:12 51:20 observe 85:13 observed 26:23 38:7 80:19 obtain 7:8 21:21 23:12 35:6,10 40:9 61:22 obtained 61:18 obtaining 40:3 obviates 61:23 obviously 46:13 62:1 occur 28:23 34:14 47:25 77:20,21 occurrence 24:14 25:13 71:14 occurrences 70:21 71:20 occurring 53:12,13 occurs 28:2 33:23</p>	<p>October 16:5,20,25 35:2 35:5 36:23 40:1,12 42:10 60:16,21 61:5 65:13 office 2:5,10 4:1 13:10 15:11 officer 2:2,4 4:22 5:4,6 6:15 8:3,7,11 10:19,22 11:6,17,21 12:3,5,15 12:19 13:2,9,11 16:17 16:22 17:4,7,9 34:18 43:18 44:5,11 45:5,17 45:19 46:2,10 48:21,25 52:1 53:23,24 56:7,21 56:25 57:2,6,12,17 58:9,13,17,24 59:13,19 59:25 60:11 61:8,12 62:7,16 64:3,24 65:10 65:19 66:4,17 67:10 70:7 71:1 72:22 73:19 76:1 77:3,6 78:16,22 79:5,25 80:23 81:3,7 81:13 82:2,9,23 84:4,9 85:11 offentimes 79:8,14 Oh 58:24 62:18 76:16 oil 1:1 2:2,9,15,17,18,20 2:21,24 9:7 14:12,14 14:20 15:2,4,11 18:8 18:10,12 19:9,14 24:8 28:5 30:14,18,21 31:5 41:8,24 51:2 60:19 61:4,16 62:12 63:2,17 76:22 okay 11:17,20 12:15,19 16:17,22 17:3,4,7 32:22 47:5,23 52:1 57:6,17 58:13,17,24 59:13,19,25 62:7 72:22 73:21 81:3 84:9 once 14:15 15:4,5,13 21:1 40:5 42:8 67:25 68:1 ones 20:7 one-mile 37:21 open 18:9 24:16 82:10 opening 17:17 Open-File 50:9 Open-pit 24:9 operation 14:9 15:17 21:25 24:3 29:18 31:10 50:2 71:18 72:20 77:15 78:25 operational 80:15 operations 1:8 6:9,24 9:1 24:9 27:23,24 37:7 50:4 51:4 60:23 78:23 80:12 operator 6:11 14:3,16 16:2 36:17 50:2 52:6 55:4,18 57:14 62:1 operator's 55:18 opined 67:25 opinion 11:4 43:23 59:15 68:1 opportunity 6:6 10:4,7 19:18 23:23 43:6 44:3 44:25 49:5 80:9 82:6 83:18 opposed 44:11</p>	<p>order 6:16 8:6 9:22 10:19,22 31:7 33:21 58:19 83:3,11 ore 14:12,20,25 15:2 24:8 28:19 29:6,25 30:16,25 31:2,3 32:4 32:15 33:18,19 34:5 75:9 organics 34:8 organizing 84:12 originally 15:19 other's 11:1 ought 85:10 outdated 39:24 outline 20:6,8 23:20 outlined 20:4 outlines 74:3 outside 14:23 63:14 81:1 overall 35:18 42:12 overburden 14:11 28:25 50:6,13 56:1 74:17 overlap 18:20 64:1 oversight 18:20 overturn 17:21 overview 13:20 14:8 owned 14:5</p> <hr/> <p style="text-align: center;">P</p> <hr/> <p>P 5:1 packet 36:13 page 4:8 38:3 pages 36:13,19 40:20,22 64:15 pan 14:19 30:19 Parachute 24:5,11,20 25:4,19 27:5 28:15 37:14 48:13 parameters 74:23 75:5 parcels 24:7 25:22 26:3 27:16 51:8 part 10:23 21:24 33:12 44:12 57:2,9 64:4,25 69:5 72:14,25 73:2,24 75:2 79:10,20 81:15 82:11,12 83:13,21 85:4 participate 13:14 participated 83:10 particular 5:7,21 53:14 65:17 74:7 particularly 28:17 71:15 parties 8:14,14 9:4,16,21 10:22 11:1 12:6 86:11 parts 25:9 party 8:10 83:9 patent 42:21 Paul 2:16 4:10 12:13,16 13:19 17:5 53:21 77:9 78:16 pay 5:22 penetrated 76:8 penetration 74:13 75:7 75:13 people 12:6,11,17 39:4 58:7 85:13 percent 33:21 perched 7:15 25:14 28:12 37:2 70:14,16,19 71:9 72:3,13 percolate 29:22 Perennial 50:24</p>	<p>performance 11:7 29:2 74:9 76:23 period 15:9 16:8 35:15 45:9 74:22 75:1 76:25 periods 75:15,15 permeability 27:25 37:8 39:5 48:3 74:5,6 76:6 permeable 25:14 39:19 59:6 permit 7:9 9:24 10:21 13:17 18:18 22:3,7 24:13,24 25:3,6,11 26:21 27:1,7,10 28:4 28:21 31:15 32:16,24 33:10 35:1,7,10,23,25 40:3,4,4,10,14,23 41:6 41:14,15,21 42:11 43:19 47:2 49:8 60:13 60:14,22 61:1,2,3,3,4 61:19 62:5,6 63:9,10 64:10,13 66:20 67:14 67:23 68:11,17 69:5,9 69:12,13 73:1,3,3 77:13 78:13 80:10,20 permits 61:17,24 78:11 84:20 permitting 18:5 23:11 64:20 66:5 69:5 persist 47:14 person 8:1 9:8 personnel 17:24 22:13 23:15 perspective 20:9,13 51:24 52:14 65:24 pertinent 22:16 27:15 Peters 4:3 petition 8:1,3 petrochemicals 7:14 20:24 pH 23:6 Phase 8:21 phone 66:2 phonetic 46:21 Photographs 50:24 pick 12:21 piece 74:7 pilot 21:5,8,13 31:9 33:1 pipe 30:18 pipelines 51:2 pipes 15:1 30:18 32:13 pit 24:16 place 78:11 79:10 placed 15:14 30:17 plan 21:14 50:2,14 52:16 52:17 73:22,25 74:3,10 77:24 78:20 plans 20:10 57:11 69:11 Plateau 48:11 please 5:22 plenty 62:8 point 23:19 44:24 58:1 63:14,17 69:4 points 71:20 political 18:7 pollutants 22:1,10 porous 28:2 39:4 59:3 portion 5:9 pose 77:8 possible 7:4,6 17:14 18:4 18:24 19:20 23:17</p>	<p>26:13 30:2 33:5,18 57:25 post 10:15 potential 28:11 31:18 49:14 52:7 53:8 55:6,8 57:7 68:10 71:7,12,23 72:16,20 potentially 25:1 71:19 practices 80:15,16,22 precipitation 28:22 29:5 29:8,10 73:10 75:6 76:12 predicted 33:11 preface 49:4 prefer 19:23 prejudice 8:9,14 premature 63:23 64:7 premise 22:13 66:19 premixed 22:8 preparation 14:13 prepared 11:14 13:6 17:16 34:16 35:21 43:21 preparing 59:9 presence 19:3 24:22 25:7 25:25 26:12,17 27:4 47:3 51:13 present 2:14 3:9,21 4:1 6:10 9:16 10:1 13:16 13:20 16:16 23:23 39:10 67:17 presentation 48:24 presented 6:21 7:16 9:17 10:18 23:25 34:11 35:8 45:3 66:4 82:11 83:1 President 3:10 presiding 8:7 pressed 63:10 pressure 18:2 34:8 presumption 28:16,19 30:9 pretty 12:11 13:13 49:15 55:14 56:3 prevent 7:13 28:18 30:10 32:18 40:16 previous 9:18 pre-design 67:15 pre-stripping 14:11 Price 26:4 primarily 14:5 primary 47:1 principal 11:9 principally 5:16 12:8 prior 9:9 60:23 80:8 private 14:6 probable 22:1 probably 12:5 40:20 44:13 48:23 53:25 56:8 66:1 77:1 problem 43:10 45:6 46:3 79:7 procedure 9:19 74:3 Procedures 8:20,21 9:2 proceeding 6:20 8:2,4,8 8:8 9:10,13 64:4 proceedings 86:7,9 proceeds 15:8 process 15:3,5,7,8 18:5 18:18 20:2,22,23 21:1</p>
---	--	---	---	--

<p>21:20 23:12 30:8 31:1 32:3 34:14 41:20 42:15 57:13 63:18,21 64:14,15,20 69:6 70:5 78:11,17 79:14,18,19 84:18,22 85:1 processed 14:15 processes 63:15 65:4,5 84:24 production 21:13 professional 55:23 58:5 58:15 86:5 program 29:3 75:23 programs 42:12 progress 85:14 prohibited 9:14 project 16:14 21:5,8,13 21:15 31:10 75:22 projected 27:21 72:10 properly 37:11 property 51:23 proponent 84:5 proposal 20:9,15 22:17 proposed 13:24 14:4 19:16 20:3 21:6,25 24:2 26:11 28:14 31:21 32:2 50:4 51:4 55:12 57:3 68:12 71:18 proposes 30:14 31:7 proposing 14:3 21:9 protect 49:12 protected 32:11 78:12 protecting 69:22 protection 53:16 80:17 80:18 protective 21:9 protest 1:6 6:22 10:2 19:1 44:1 59:1 protestants 9:5 protests 39:11 provide 6:6,11 7:11 9:23 23:1 27:10 30:12 31:13 35:22 36:18 37:22 38:23 42:2 43:24 44:3 45:7 49:5 50:3 52:6 55:5,20 61:21 provided 18:20 20:8 22:15 27:13 32:19,25 37:17,23 42:4 50:7,13 52:9,11 68:19 85:2 provides 25:12,17 27:15 38:15 39:2,14 45:10 providing 33:4 42:15 provision 43:2 public 8:9,13 16:6,8 31:9 33:5 49:5 54:18 68:5 79:13,17,19,20,24 80:3 80:5,11 82:11 86:5 published 16:6 26:5 50:9 pull 16:23 pulled 38:22 purpose 6:5 11:4,10 21:11 pursuant 7:20,25 8:5,19 9:3,11,15 10:23 83:12 pursue 84:21,23 pursued 84:17 purview 69:10,14</p>	<p>push 18:10 pushing 21:19 82:23 put 14:16,21,21,25 15:1 15:6 20:9 59:14 83:16 83:17 putting 56:21 P.E 4:3</p> <hr/> <p style="text-align: center;">Q</p> <p>QA/QC 74:3,9 75:23 QA/QC 73:25 quality 7:10 18:16 35:8 38:13 39:17 40:19 41:10,17,23 42:11,13 42:14 49:9 59:5 60:25 61:7,24 62:4,11,25 63:7 64:5,12,25 65:14 66:22,24 67:19 68:1,15 68:21 69:21,23,24 73:22,25 74:8 75:3 77:11 78:5,14,19 79:3 Quality's 41:12 quantities 24:21 26:23 38:6 39:20 59:7 76:13 quantity 29:22 question 11:22 27:16 36:7 46:17,17 51:25 54:9,20 56:5,11 57:18 71:18 72:21 73:19 77:8 80:2,7 questions 11:11 34:17,19 68:21 69:1 70:10 71:25 83:1 quick 76:3 quickly 18:4 quite 47:17,23 52:11 54:22 72:6 77:20 quote 69:19</p> <hr/> <p style="text-align: center;">R</p> <p>R 2:2 5:1 radius 37:21 raise 18:16 raised 36:5,5 37:13,25 38:24 40:25 43:14,14 49:19 55:10 56:10 75:19 raises 82:7 ramp-up 21:14 ran 23:7 60:8 Ranges 13:25 raw 24:8 reach 58:1 63:17 75:9,18 read 5:8 43:9,11 reading 67:22 realize 60:11 75:4 really 15:25 39:1 41:22 44:11 45:13 46:25 55:14,23 61:6 63:1 65:24 74:19 83:15 reason 35:3 53:8 85:5 reasonable 6:14 44:16 68:14 83:2 reasons 51:12 68:3 rebuttal 46:9,10 recede 75:16 receive 6:20 received 7:19 8:3 13:22 15:19,23 16:9,12 recharge 48:4,14</p>	<p>reclaim 29:6 reclaimed 28:24 reclamation 29:18 42:17 56:1 69:18 80:15 recognize 62:23 63:25 72:19 84:19 recognized 38:9 recognizes 30:1 recognizing 10:9 recommend 17:22 recommendation 17:25 22:24 23:10,15,16 46:24 recommendations 41:1,3 recommended 32:8 reconsider 23:15 record 5:23 23:24 28:10 38:23 40:6 43:8,10,11 43:16 44:19,20 45:3,14 68:5 79:11,20,23 81:5 81:6 recorded 26:14 51:20 records 36:24 38:22 65:1 recover 30:14 recovering 31:5 recovery 29:19 Red 1:7 3:1,11 4:14 6:8 6:24 7:8 9:6 10:4 13:3 13:5 17:22 18:4,13 19:22 20:3,8,10 21:17 21:21,24 22:2,9,20 23:1 24:7 26:9,24 27:8 27:17 28:7,16,19,22 29:4,21 30:2,3,8,14,21 31:7,14 32:7,9,18 33:6 33:7,20 34:19,22 35:6 35:9,18 36:15,22 37:6 37:10 39:6,13 40:8 43:13 46:4 49:19 58:17 59:9,14 60:17 65:23 68:3,25 71:2 73:8 77:22 78:3,21 83:17 84:6,6 85:4,7 redo 17:25 reduce 33:18 reduced 33:15 reference 51:12 72:9 referenced 50:13 60:13 68:25 references 43:18 72:9 referencing 50:3 referring 77:1 refers 57:21 reflect 25:13 37:1 reflected 37:2 regard 27:21 52:2 56:2 72:5 80:2,7 81:17 84:16 regarding 6:7 7:19 26:17 38:25 40:21 41:2 42:20 46:21 65:25 69:23 regards 50:22 52:10,13 regional 24:24 Registered 86:5 regs 19:13 regulate 19:9 69:7 regulating 69:14 regulation 45:10 63:14 regulations 7:11 18:23</p>	<p>19:10,11,20 54:22 63:5 66:12 regulatory 19:6,8 22:14 23:21 35:19 69:10 rejected 68:15 relate 18:16 related 47:15 69:20 relationship 51:5 70:3,5 relative 54:15 relevant 6:17 8:16 10:20 83:4 relied 22:12 39:23 59:9 59:10 relies 28:16 rely 31:9 relying 60:24 remain 30:12 33:17,22 remains 30:7 remarks 34:16 Remedies 8:23 remember 15:20 remind 69:17 removed 14:10,12,13 rendered 68:1 repeated 15:7 report 26:5 31:17 37:17 37:24 50:9,10 reported 1:19 25:3 46:19 47:13 86:7 reporter 5:16 12:21 47:20 48:8 81:5,20 86:5 REPORTERS 1:21 reports 25:20 26:8,21 27:2,7 28:1,8 33:3,4 51:6 representative 9:5 13:6 represented 76:18 represents 46:25 request 19:18 requested 10:18 require 7:9 19:2 36:16 36:17 40:10 51:15 67:23 78:20 80:16 required 7:10 14:11 22:7 37:4 41:16 52:21 56:19 57:11 60:22 61:2 62:5 63:4,4 64:11 64:13 66:21 67:1,14 77:19 78:15 requirement 36:10 79:2 80:13 requirements 8:16 18:23 19:2 23:21 35:19,19 36:11,15,16,22 37:11 41:7,19 42:1,4,6,7 49:12,15,16 50:22 51:25 52:4,14 62:2 63:12 65:7 78:19 80:14 requires 52:3 54:23 55:3 55:24 72:14 78:6 80:5 research 39:6 reseeded 15:15 reserve 11:25 12:2 46:8 resides 69:23 resolve 10:12 resource 3:17 9:6 16:11 16:13 49:24 72:1 resources 1:2,7,15 2:6,11</p>	<p>3:1,11 4:14 6:2,8,25 7:5 9:7 10:4 13:3,5 18:4,8,11 24:2 26:9 28:7,20 30:2 36:9 39:8 39:11,13,21 42:3,16 43:13 55:9 57:21 58:18,21 59:9,11,11 60:12 61:6 62:23 71:2 71:5 77:22 78:4 respect 37:13 41:3,8 74:1 84:15 respectful 11:1 respond 6:12 43:6 44:4 44:17,25 66:16 67:9 73:17 responded 69:1 response 35:21 36:3 43:12 44:15 45:8 49:4 75:2 81:21 82:12,20 83:7 84:21 responses 45:11 responsibilities 19:6 62:14 responsibility 54:15,17 restriction 55:16 result 21:25 22:2,10 30:15 32:3 34:1 71:17 77:25,25 resulting 34:5 results 21:7 26:2 27:12 29:4,14,14 31:9,11,16 32:19 72:23 75:14 76:8,10 resume 53:2 retained 36:25 retorting 27:23 revegetated 15:15 revegetation 76:23 reverse 58:18 review 11:7 12:12 13:17 15:21,23 16:1,1 40:12 69:11 82:7 84:25 reviewed 15:24,25 reviewing 10:16 44:22 reviews 13:22 revised 41:4 revision 80:4,5,11 rhetoric 18:7 Ridge 14:2 28:6 right 11:25 12:2 17:3 21:3 43:1 45:18 46:15 48:25 57:16 58:23 60:20 61:11,15 76:20 78:10 79:13 83:10 84:7,9 85:10 rightfully 67:19 rights 8:10 27:15 37:1 38:17 40:13 risk 19:25 risks 20:6 risky 20:1 River 24:5,12 25:2,15 26:6 27:6 37:15 Rivers 1:6 3:23 4:11 6:22 7:3 9:5 10:1 12:22,24 17:11,13,20 34:25 35:16,24 36:5 37:14,25 38:18,24 39:9,14,23 40:8,11 43:15 44:3,24 46:13 54:2,11 59:2</p>
--	--	---	---	---

62:8 81:20 83:19
84:16
RL-1 27:3 47:6,7,9 60:3
Road 14:2
roads 50:25
Rob 3:18 4:12 12:23
17:16
rock 19:12,17 30:15 48:1
rocks 24:22
room 5:11
RPR 1:19 86:17
rule 50:15 52:2,14 53:17
55:3 61:3
ruled 24:23
rules 6:17 8:25 10:20
11:9 36:10 49:10
50:16,22 51:15,25
54:20 55:1 56:4,5,8,17
56:22 59:5 60:10
61:21,24 65:6,7 66:10
67:22,22 68:4,9,13,20
69:25 72:5 80:15 83:4
85:3
rulings 54:14
run 23:12 76:5
running 75:12
rush 21:21
Russell 2:24 13:12 32:21
46:4
R317-6-1.1 59:8
R347-4-106(8) 19:4
R347-4-109(1) 19:5
R647 9-1 65:7 72:5
R647-4-105 50:23
R647-4-106 50:2
R647-4-109 36:16 52:5
56:10 72:8,15
R647-5-106 8:21 10:23
83:13
R647-5-106(9) 9:13
R647-5-107 8:22

S

S 5:1 36:1 37:17,24 38:4
40:5,18,22 46:21 65:2
safe 20:24 73:15
saline 34:9
Salt 1:16 2:7,12 3:4,7,20
6:2 16:6 86:4,13
Samantha 4:2
sand 19:15
sands 18:9 19:9
satisfies 8:16
satisfy 41:25 52:4
satisfying 53:17
saturated 39:19 59:6
Saudi 18:8
saw 74:21,23
saying 5:25 43:23 57:14
63:8 78:3 82:25
says 54:14 55:11,16
56:17 57:3 68:8
scale 20:4,13 21:15 31:7
scale-sized 21:15
scaling 31:18
scare 20:1
scenario 29:11 30:5
76:10,25
scenes 79:9
scheduled 6:3

science 3:24 70:8
scientists 57:23,23 68:24
scope 6:19
scrutiny 55:20
se 51:17
seal 32:11
Seated 13:9
second 7:6 26:7 32:14
33:13
secondly 42:2
section 7:20,21,25 8:5,19
8:25 9:3,11,15 50:12
sections 14:4 40:22 41:21
Secure 7:17
see 21:16 23:3 53:7 62:21
63:10 64:18 67:8 71:7
81:9
seeing 44:6,8
seek 84:20
seeking 8:4
seen 19:15 62:20
seep 14:1 26:2 28:6 29:25
71:9
seepage 28:22 29:1,4,7
29:11,14,14 31:25
72:23 73:9,10 76:12
seeps 51:22
send 16:1
senior 68:23
sent 13:22 17:1 18:13
69:3
separate 33:2 62:12,13
65:4
September 39:25 41:5
seq 8:25
series 20:11 61:17
serve 48:14 82:15
set 18:22 36:19,20 37:24
38:11,12 39:16 40:21
53:24 79:15
setting 10:25 50:6 68:7
settled 21:1
settlement 34:1,5
settling 32:17 33:17
seven 81:20
several-year 15:9
shale 14:12,14,20 15:2
18:9,10 19:9,14 23:6
24:8 28:6 31:6 53:13
74:19
shallow 47:24 48:12 60:7
shallower 27:20
shallowest 24:14
shear 32:18
shop 15:11
short 45:9
shortcuts 21:19
shortly 60:4
show 7:12 23:5 37:19
76:10
shown 33:16,20
shows 28:4 35:22 39:3
sic 19:4,5 28:6 38:12
sides 33:8 77:7
signed 8:1
significant 22:22 24:21
38:7 48:14 76:13
significantly 33:15
similar 84:23
simple 18:19 36:9,16

42:4
simply 26:16 32:24 35:16
36:17 38:21 43:11,15
43:17 45:2 60:22 68:6
68:8 78:7
single 21:6
sir 62:15
sister 63:19
site 30:16 61:3
SITLA 2:21,23
sitting 20:15
size 20:12 21:6 55:25
slow 5:21
59:21 65:13
size 20:12 21:6 55:25
slop 11:18
small 5:11 26:23 38:4,6
47:11 71:20 72:13
smaller 70:24
SNELL 3:2
soil 14:10,17,24 15:14
28:17,25 30:24 42:20
53:11 55:9 57:22
74:17
solid 55:20
somewhat 5:12 58:14
62:12,13 70:16 83:22
Sonja 2:22
sorry 47:7,20 48:8 77:25
sort 43:24 45:12 63:16
72:21
sounds 13:2 17:3
source 37:20 60:6
south 3:3,6,19 13:25
48:11,16
southern 25:9
Southwest 1:8 6:10,18,25
speak 5:21 47:21 78:1
speaking 12:6
species 55:8 71:22
specific 43:13 51:16,16
52:18 54:23 56:6,9
61:3
specifically 7:15 17:18
31:17 32:4 33:7 41:5
42:14 52:8 61:21
65:23 69:19 73:9
specificity 72:23
specify 54:16
speed 66:11
spent 23:6 29:5,25 74:19
75:9
Spinti 7:17 16:11
spite 25:17
spot 56:22
spring 26:2 81:18
springs 25:21,24 26:5
37:19 39:20 50:25
51:7,11,17,22 59:7
square 20:12,20,20
ss 86:3
stacked 20:18
staff 13:13 19:19 54:10
56:12 58:2,5 65:13
70:4
standard 25:25 51:12,17
52:20
standards 52:12 76:23
80:16
standpoint 72:6

start 5:9,25 6:4 11:12
34:20 54:1
started 5:5 62:11 67:15
state 1:3 4:1 18:9 21:2
38:19 54:18 61:17
62:13 84:25 85:6 86:3
86:6
stated 20:10 76:18
statement 4:8 17:17
24:18 36:17 43:10
44:19 56:7 62:10
statements 13:18 17:13
26:24 29:15 34:22
38:25 49:2 54:12
states 24:13,19,19,25
26:4 27:22 32:10,16,24
33:11 40:7,8 50:2,24
51:6 64:11 66:22
69:19
statute 49:10 54:14
statutory 35:19
stay 33:11
steam 34:9
steel 14:19
stenotype 86:7
step 23:11 81:1
steps 21:14
Steve 4:18 12:9 13:19
48:25 54:3 77:9 78:16
79:25 82:20
STEVEN 2:10
stipulated 8:15 42:24
stockpiled 14:10
stop 78:10
stopped 60:4
storage 15:12
storm 52:15,16,17,18,19
straightforward 42:5
strategy 68:11
streamlined 18:5
streams 50:24
Street 3:6
stresses 32:15 33:8 34:6
strict 67:22 76:21
stripping 79:1
strips 51:1
structure 5:14
subject 55:19 62:3 79:24
submit 68:17 78:21
submittal 43:2
submittals 13:22 15:24
submitted 6:7 9:8 22:20
35:3,12,16 36:1 39:25
40:5,18 41:4 43:22
60:22 65:11 66:9 67:5
73:2,13,24 74:1 79:18
81:8,15 84:23
substantive 18:15 35:12
35:17
subsurface 47:25 51:3
52:8 55:6 72:9,17
succinct 17:14
sufficient 7:13 30:9
31:11 45:10 48:2 59:6
59:22 69:11 76:12
80:19
sufficiently 39:19
suggest 35:13 43:9
suggested 35:9 48:2
suggesting 79:16

suggestion 38:12
suggests 39:9 77:14
Suite 2:7,12 3:3,7,19
sum 41:7
summaries 33:2
summarizes 43:12
summary 27:14 28:10
34:11 36:21,23 38:15
39:2 45:2,14
sump 30:20
support 16:14 24:17
25:18 26:7 28:21
32:20 39:11
supported 75:22,23
supposed 54:16,17
surcharge 33:12
sure 5:23 15:16 19:2 46:1
46:8 55:20,22 57:24
58:13 65:17 76:16
78:3 82:19
surface 24:6,10,15 27:8
50:20 51:3 52:7,9,11
52:12,24 55:6,7 65:24
67:21 71:3,16,23,24
76:24
surprises 81:19
surprising 48:16
surrounded 14:23
surrounding 7:14 18:7
susceptible 7:5 27:22
37:7
suspenders 53:15
system 41:2 52:22 71:17
72:14
systematic 26:2
systems 31:19 52:9 55:8
71:21,22,24 72:11,12
72:19 80:18

T

tablet 16:24
tailor 66:6
take 9:25 11:13 17:25
19:13,18 21:19 23:11
38:21 44:13 45:21,24
46:12 82:25 83:20
taken 1:15 46:5 49:13
79:4 81:2 86:9
takes 83:6
talk 5:8 46:11,13 48:18
56:22 67:13 74:15
talked 64:11 66:1 72:22
74:13
talking 44:22 58:9 62:17
67:21 71:10 81:9
talks 60:11
tall 20:12,15
tandem 63:16
tar 18:9 19:9,15
task 17:20 18:1
Tavaputs 48:10
technical 11:23 43:24
52:23 67:19 72:23
technologies 19:14
Telephone 2:8,13 3:4,8
3:20
Tell 45:19
telling 56:8
temperature 32:4
Temple 1:15 2:6,11 3:3

ten 9:25 20:12 45:11 83:11	times 20:14,15 66:2 76:6	uniform 39:5	58 21 59:7,11,16,22	Yeah 11:17 45:13 52:5
tend 20:1	today 5 24,25 6:20 7:18	unique 19:16,16	60:2,4,5,25 61:6,6 62:4	53:10 62:8 65:16 66:1
tennis 77 4 79 22	16:10 17 20 18 14	unit 28 2,6 39 4	62:11,25 63:7 64 5,12	66:17 80:1 82:2,22
tens 70:23	19:6 22:16 44:7 63:11	units 59:3	64:24 65:14,24 66:22	year 29:7,9,12 47 12
tentative 6:8,23 16:4,5	70:4 81 8,25 83:10,14	University 16:12	66 24 67:18 68:1,15,21	76:13
16:18 17:1 22:5,20	84:12 85:12	unresolved 10:12	69:15,21,23 71:15,24	years 18:6 23:7 52:24
35 2 40 2,12 57:9	today's 9:19 19:25	unsupported 30:10	74:8 75:3 76:12 77:11	70 2,6
60:17,21 61:5 64:18	Tom 2:19 4 20 12:17	untested 31:8	78:5,14,19 79:3	yield 39:19 59 7
65 9,12 67:6 84:21	50:20 58 10,11 65:19	updated 39:25		
term 58:22 60:10	Tom's 54 4	upper 28,23 29:5,8,11		
terms 40:15 41:19 63 21	tone 5:11	uppermost 25:1 33:14		
76:13 81:7	top 15:6,15 18 2 20:18	urge 62:3		
test 31 14,16,22	27:4 28:25 47:10	usable 39:19 58:21 59:7		
testified 54 25	69:12	59:16,23 60 7		
testify 9:16 17:17	topsoil 79:1	use 5:17 56:12 58:14		
testifying 12:25	total 20:19 31:3	USGS 25:20,24 37 19		
testimony 10 17 43:3,25	totally 43 23 64:9 69 9	51:7,11		
69:2	Township 13:25	usually 78:17		
testing 21:8 32:20 33:1	traditional 19 12	Utah 1:3,8,16 2:5,7,10,12		
39:7	transcribed 86:7,10	3:4,7,20 4 1 7:20,21,25		
tests 27:12	transcript 5:17 81:21	8 5,19,20,21,24 9:1,2,3		
Texas 28:6	82:3 83:7	9:11,12,15 16:12 18:8		
thank 12:4 23:22 32:23	transcription 86:9	23:18 27:14 38:16		
34:15,23 53:1 82:17	transition 62 8	69:18 70:1 83:12 86:3		
83:14 84:11 85:10,11	transmission 51:1	86:6,13		
85:15,16	transmissivity 53:13	U.S 29:3		
Thanks 81:3 84:4	transparent 84:25			
theirs 64:5	treatment 69:15			
Theoretically 78:25	true 68 2,20 86:9			
thereof 86:12	Trust 14 5			
thickness 31:3 32 14	try 5:18,22 10:10 11:3			
70:25	82 3			
thing 43 12 61:25	trying 11:18 16 23 21:19			
things 5 8 15:12 54 5,8	63 24			
56:2 58:20 65 22	turn 23:19 34:21 49:1			
72:24,25 74:12 79:8	50 18 58:17 63:18			
80:2 82:10	70:7			
think 11 15 12:5,10	Twenty 32:21			
13:13 16 15 17:8	two 6 14 10:10 15 24			
34:24 35 11 44 1,5	16 12 18:21 20 20			
45:15 47:2 48 19,23	22:19 28:7 36:11			
54:5,19 57:2,19 58 4	37:12 41:25 42 12			
58 20 61:9 62 19	62 21 65:4 66:2 67 1,5			
63 22 64:6 65 4 70:13	74 17 80 1,23			
70:18 71:12 72:18	two-fold 6:5			
73:15 75:20 77:7	two-hour 9:20,22 11:19			
79:13 81:24 83:15	type 56 1 61:2,25 62 5			
84:7,16 85 1,3	types 48:2 71 24 79:14			
thinking 74 16	typewritten 86:8			
third 1:21 7:7 27:13	typical 50:12			
thorough 26:2	typically 70:24			
thoroughly 40 17	T-A-V-A-P-U-T-S 48:11			
thought 49 3,4 52:23				
70:17 85:8				
three 14 4 20:15 25 17				
32 23 41:21 66 2				
74 17,24				
three-foot 14:18,24				
30 23				
Thursday 1:17 5:25				
tier 15:6 31:4 33:13,14				
time 1:18 5:21 6:14 8:6				
9:21,22 10 11,14 11 2				
11 19 34 21 37 5				
42 19,23 44 7,9,17				
45:9,20 46:5,6,6,7,22				
47:12 49:1 62:9 65:11				
74 22 75:1,12 76 25				
82:24 83 3				

