

BUREAU OF LAND MANAGEMENT

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**RED DEVIL MINE REMEDIATION PROPOSED PLAN  
PUBLIC MEETING**

Thursday, October 22, 2020

Virtual Community Meeting

ATTENDEES:

- Lesli Ellis-Wouters, Communications Director, BLM
- Joy Huntington, Facilitator, Uqaqti Consulting
- Bonnie Million, Anchorage Field Station Manager, BLM
- Matt Varner, Presenter
- Mike McCrum, Presenter
- Maureen Clark
- Andrea Gusty
- AW
- Anne Marie Palmieri
- Nick Ayupan
- Court Reporter, Betty Caudle, Metro Court Reporting



1 soon as we can get it transcribed. And with that, I'm going to  
2 turn it over to Joy who is going to provide you with an  
3 overview of today's meeting. Take it away, Joy.

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7 JOY HUNTINGTON: Thank you, Lesli. And good evening to  
8 everyone who has joined us so far. And we hope that we have a  
9 few more people jump on as well. And it looks like everyone  
10 right now has logged in with their computers, so we're going to  
11 keep an eye and see if we get any phone call participants,  
12 because we definitely want to make sure that they are able to  
13 follow along with the presentations. So for now, I'm just  
14 seeing a few people that have logged into their computers. And  
15 I'm happy that we're already utilizing the Q & A box. That  
16 will be a really helpful way to interact throughout the meeting  
17 this evening as well, so we'll try to stay on the questions.  
18 And if you leave them there, we will stop periodically  
19 throughout the presentations tonight and read your questions  
20 aloud.

21 So before I get started kind of talking about what our  
22 agenda is and a few of the other tools we're going to be  
23 utilizing, I wanted to welcome Bonnie Million to give a welcome  
24 this evening on behalf of BLM as well. And Bonnie is the field  
25 manager for the BLM Anchorage Field Office, and we're happy

1 that she's on tonight. And I will hand it over to her to give  
2 a welcome and to kind of give a little bit of context and  
3 background for our meeting this evening before I share the  
4 agenda. Thank you.

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8 **ANCHORAGE FIELD OFFICE MANAGER WELCOME**

9 BONNIE MILLION: Thank you so much, Joy, and good evening,  
10 everyone. I want to start first by thanking you all for  
11 joining us in this virtual setting. I would really love  
12 nothing more than to be able to meet with you all in person, to  
13 see all of you again, and to share in this process face-to-  
14 face, but we're in a little bit of a different time now. And  
15 as Lesli mentioned, it is out of the sincerest respect for the  
16 health and safety of all Alaska communities and our Alaska  
17 families that we are conducting these meetings virtually.

18 Through this virtual setting, we are able to provide  
19 multiple opportunities for you to gain information and for us  
20 to receive your feedback, and for all of us to keep this very,  
21 very important remediation project moving forward.

22 For those of you who remember, this project has been in  
23 the works for quite some time. It started way, way back in  
24 2010 with the initial remedial investigation work. And BLM  
25 came out to communities in 2010 and 2011 to sort of brief

1 communities on the initial plan of attack for that remedial  
2 investigation.

3 In 2012, we came out to communities again to give an  
4 overview of some of the preliminary results from that  
5 investigative work and to go over, I believe, the fish tissue  
6 study was started at that point as well, and so to give folks  
7 an overview of some of the ideas and outlines of the study that  
8 was going on in that.

9 Then in 2014, we came out to communities again to seek  
10 some public comment and feedback on those early actions. And  
11 what was great about those meetings is some of the feedback  
12 that we received resulted in some direct modifications and on  
13 the ground work that the BLM did to shore up the streambanks  
14 along Red Devil Creek to prevent some of those tailings from  
15 migrating into the Kuskokwim River. I think we also got some  
16 great feedback and suggestions on the fish tissue study during  
17 those 2014 meetings as well.

18 So from there, the team moved into the feasibility study  
19 stage. There's lots of modeling, lots of data, edits.  
20 Complicated stuff, right? And so at that point, we decided  
21 that we really needed an opportunity to come out to the  
22 communities again to summarize some of those results and  
23 provide some opportunity for folks to digest some of that  
24 complicated data. And so in 2017 and 2018, we came out to  
25 communities to summarize some of those results in anticipation

1 of this public process that we're in now.

2 And in 2019, there was some additional modeling that was  
3 done based on some EPA and State of Alaska concerns. And that  
4 brings us to today with the official public process.

5 Originally, the community meetings had been planned for March,  
6 but I think we all know that that kind of got delayed a little  
7 bit, and that brings us to today.

8 So again, thank you so much for taking time out of your  
9 busy, busy schedules and taking time out of your evening to  
10 join us today. If you've got any specific concerns, any  
11 specific questions, any general questions, any comments, I  
12 would love, love, love to have you express them with us today.  
13 We have a court reporter who is taking notes. We'll have  
14 transcripts of the meetings, and it is vitally important that  
15 we hear back from you. So thank you again for joining us. And  
16 I will pass it back to Joy.

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20 JOY HUNTINGTON: Thank you, Bonnie. And I'll go over a  
21 few quick housekeeping items. Lesli did a good job of  
22 describing some of the tools that you have to interact with us  
23 this evening. It's really one of the main purposes of this  
24 meeting is to definitely hear from you, to answer questions,  
25 and to definitely welcome your public testimony at the end of

1 the meeting.

2 Just in case anybody has difficulty, if they kind of get  
3 logged off or your internet connection, you have issues with  
4 that, it happened to me once when I was actually facilitating  
5 and I kind of freaked out, but up at the top of your screen on  
6 the very left corner there's a little green shield with a  
7 checkmark in it. If you click on that, it says meeting  
8 information. And that's a really quick and easy way to get the  
9 meeting ID number, the passcode, and your participant ID. So  
10 some people have a special participant ID if you're a panelist.  
11 And I think, I'm not sure, if each of the attendees has a  
12 specific participant ID. But this might be a good time to just  
13 jot down those numbers so just in case you need to call back  
14 in, you have all the information that you need. So just in  
15 case you need a lifeline, there's a lot of information there  
16 that's available to you.

17 As Lesli mentioned earlier, this meeting is being recorded  
18 and will transcribed. We will also be posting this meeting,  
19 the actual recording of it, on the website as well. So just so  
20 you're aware, we want to make sure that people know if they're  
21 going to be, you know, speaking or asking questions or  
22 providing testimony that this -- and your video will not be  
23 turned on. I think that's an important piece of information as  
24 well. When we open your line for questions and for testimony,  
25 it will just be audio. So no worries about all of a sudden

1 being on video and it being on the website, so we'll just hear  
2 your voice when we post the recording. So I just wanted to  
3 share that with everybody.

4 And hard copies of the presentations -- we'll have two  
5 presentations this evening, and hard copies have been sent out  
6 to the rural communities that were not going to be able to get  
7 online. And so if we do have anybody join us telephonically,  
8 they'll be following along with the hard copy presentation.  
9 And for everyone else, the Q & A box, please utilize that, as I  
10 mentioned. And then of course raise your hand if you have a  
11 question. We will be stopping every few slides to make sure  
12 that if there are questions that come up, you do have a chance  
13 to either type them in the Q & A box or to raise your hand and  
14 we'll open your audio line.

15 Really quickly, my name is Joy Huntington, and I'm really  
16 excited to be the facilitator for this evening's meeting. I  
17 own a consulting business here in Fairbanks, and I've been  
18 working with BLM for a couple of years facilitating meetings.  
19 They used to be in person and now, as Bonnie mentioned, for  
20 everyone's safety, we have shifted to doing virtual meetings.  
21 And hopefully someday we'll be able to come back out again and  
22 meet with everybody in person. But I grew up in Stevens  
23 Village, Manley Hot Springs. My grandparents are from Tanana  
24 and Rampart, and so kind of that Middle Yukon River area. I am  
25 Koyukon Athabaskan, and I have been working in rural

1 communications for 18 years. And so I'm definitely happy to be  
2 facilitating this evening.

3 And my specific role is really to help, especially with  
4 the online format, to help navigate us from the presentation  
5 mode to questions and then to public testimony, and just to  
6 make sure that the meeting is as inclusive and interactive as  
7 possible. So that's really my sole purpose is just making sure  
8 that you have every opportunity to ask questions and to  
9 interact with our presenters. And so I'll be interrupting them  
10 and making sure that we take time for questions.

11 As you can see, our agenda -- you know, we went kind of  
12 over the meeting overview and had our welcome from Bonnie. And  
13 our first presentation is going to be on mercury concentrations  
14 in the environment, and Matt Varner will be presenting that  
15 specific presentation. And Matt is the fisheries and riparian  
16 resource lead for the Aquatic Habitat Management Program. So  
17 there won't be a quiz on everyone's titles later, but he'll be  
18 presenting first. And then after that, we'll have Mike McCrum  
19 present. And he's the project manager. I'm sure several of  
20 you have interacted with him before. And he's the BLM program  
21 lead for Hazardous Materials Management and Abandoned Mine  
22 Lands. And so we'll have two presentations, and then we will  
23 open up for public comment. And public comment, this is not  
24 your only opportunity. I just wanted to let you know as well  
25 that the public comment period will be open until the middle of

1 December. And so we will provide contact information at the  
2 end of the presentations if you would like to email in your  
3 testimony or provide testimony in a different format. So with  
4 that, I think we are ready to begin our first presentation. So  
5 I will invite Matt to please share his screen. And we will  
6 stop about three times during Matt's presentation for comments.  
7 And if we need to, we can turn videos off just to make sure our  
8 audio is really clear. And thank you, Matt. I think he's  
9 pulling up his presentation. And we will check back in soon  
10 with questions.

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#### 14 **MERCURY CONCENTRATIONS IN THE ENVIRONMENT**

15 MATT VARNER: All right. Good evening, everyone. My name  
16 is Matt Varner, and I'm a fishery biologist with the Bureau of  
17 Land Management. I led a multi-year study examining  
18 concentrations of mercury and other metals in fish species  
19 within sections of the Kuskokwim River from Aniak to McGrath  
20 from 2010 to 2014.

21 Over the next half hour or so, I'm going to talk about  
22 what we did and some of the key findings. Specifically, I'm  
23 going to cover a little bit about mercury in the environment,  
24 why we focused on mercury for the multi-year fish tissue study,  
25 and the results of the project as they relate to remediation of

1 Red Devil Mine.

2 As many of you probably know from previous presentations,  
3 cinnabar is the primary ore body containing mercury and is  
4 pretty common in western Alaska. This slide shows known  
5 cinnabar deposits in western Alaska. You can see the Yukon  
6 River watershed is shown here in tan, and the Kuskokwim is  
7 shown in a kind of orangish color. And you can see the  
8 majority of known cinnabar deposits within that particular  
9 region. And that concentration is why we refer to this area in  
10 particular as the mercury belt of Alaska.

11 The mercury belt concept gives us a really good  
12 visualization of mercury deposits, both unmined, those natural  
13 deposits, and unmined, referencing land use here in this second  
14 bullet. In respect to permafrost, most folks probably don't  
15 realize that it contains a substantial amount of mercury.  
16 There's been some studies on that, and in particular in the  
17 Yukon. As permafrost melts, mercury is released in the  
18 environment. And we've already seen that with studies showing  
19 that release and subsequent effect downstream in terms of  
20 mercury in the water and sediments.

21 This last bullet, specific to atmospheric deposition,  
22 relates to mercury that gets in the atmosphere from  
23 manufacturing emissions, coal-fired power plant emissions in  
24 Asia, wildfires, etcetera, and how that is carried away from  
25 the source and deposited elsewhere in the globe, including

1 Alaska.

2 This slide is meant to illustrate how methylmercury, or  
3 mercury and methylmercury, move and accumulate in the aquatic  
4 food web, especially at the highest levels within top  
5 predators like Pike. We focus on methylmercury because it's  
6 the most toxic form of mercury to humans. Methylmercury is  
7 created naturally through interactions of mercury in the water  
8 and sediments and from bacteria that are found in swampy areas,  
9 slews, and wetlands, which are pretty common in Alaska.  
10 Methylmercury is taken up by the lowest levels in the food  
11 chain, like algae, the green slime on the rocks and the river.  
12 And that's really the first link in the food chain. Aquatic  
13 insects then consume that material and are eaten by higher-  
14 level species of fish, and insects for that matter, and that  
15 begins that accumulation of mercury up the food web. The  
16 concentrations become greatest at the top of the food web,  
17 which is where we find long-lived predatory fish such as Pike  
18 and Burbot, which is our two species that are very important  
19 subsistence foods as well.

20 The goal of this study was to build upon work that had  
21 been completed by Fish and Wildlife Service in the Lower  
22 Kuskokwim and the limited sampling that was done by Dr. Gray  
23 from USGS prior to that. And both the Fish and Wildlife  
24 Service and USGS had noted that mercury concentrations were  
25 elevated in fish, and particularly downstream of mined areas.

1 Unlike other contaminant studies completed in Alaska, we  
2 focused on multiple levels of a food web and integrated fish  
3 tracking to better understand seasonal habitat use and fish  
4 proximity to potential mercury sources within a 270-mile  
5 portion of the Kuskokwim. So I think this is a good point to  
6 stop maybe for questions, Joy.

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10 JOY HUNTINGTON: Yes, good idea, Matt. And I am not  
11 seeing any questions in the Q & A box. Let's see if anybody is  
12 typing their questions in. And if they are then it might take  
13 a minute just to get the questions in. And again, if you want  
14 to raise your hand, please just press the raise hand button  
15 down at the bottom of your screen. And we will be stopping  
16 again after about seven more slides when we have kind of  
17 another good stopping point. So if you don't get your question  
18 in now then we'll be stopping again in a few slides here. So  
19 we'll give it just a few minutes. I don't see any hands raised  
20 at this time, and there are no open questions yet. So I think  
21 we're safe, Matt, to just kind of keep going with our  
22 presentation, and we'll check back in here in a little bit.

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1           MATT VARNER: All right, very good. The results of this  
2 study indicated that aquatic life, insects, and fish within Red  
3 Devil Creek had much higher mercury levels than most other  
4 creeks in the region, except possibly Cinnabar Creek in the  
5 headwaters of the Holitna River. However, when we sampled Pike  
6 throughout the region, we found some of the lowest  
7 concentrations of mercury in the section of the Kuskokwim near  
8 Red Devil Mine. Fortunately because of radiotelemetry  
9 tracking, we were able to discern a pattern to those  
10 concentrations.

11           Burbot, on the other hand, had a lot of variability in  
12 those concentrations, and we weren't really able to find a  
13 pattern to explain those varying levels, but overall the levels  
14 were fairly low compared to Pike.

15           Our project was essentially Aniak to McGrath within the  
16 Kuskokwim, and then between those communities, several  
17 tributaries, both small and large. And we focused sampling  
18 from 2010 to 2014, kind of building the study and some of the  
19 sampling methodologies as we went.

20           Here you can kind of see the project area with really Red  
21 Devil more or less right in the center. Focusing in on small  
22 tributaries, and these would be streams that are wadable when we  
23 talk about small tributary sampling, we sampled nine small  
24 streams. Most of the streams had limited fish presence, but  
25 they generally all had fish. Most of the fish species that we

1 found were Slimy Sculpin, which are shown here in this image,  
2 and they are a fairly small fish, less than a few inches. Most  
3 folks don't generally notice them because they stick to the  
4 bottom and they're kind of a riffle fish. And they don't move  
5 more than 30 square feet in their lifetime in general, so they  
6 kind of stay where they're born. They don't move very far, and  
7 they're pretty good fish to sample for things like contaminants  
8 or metals as a result. Nonetheless, many of the small streams  
9 that we sampled initially, we assumed they were fishless. But  
10 like I said, we did find fish in every sampled stream,  
11 including Red Devil Creek. But I will say the fish were  
12 generally limited to the first few hundred feet upstream from  
13 their rivers' or creeks' connection to the river. So that's  
14 kind of a summary of at least what we did in terms of tributary  
15 sampling.

16 This next slide shows the specific locations of eight of  
17 those small streams that we sampled. And you can see  
18 essentially from the community of Crooked Creek up to Sleetmute  
19 was really the focus area for tributary sampling. And the  
20 tributaries that we sampled are shown here, kind of delineated  
21 with a red boundary line. We did sample one other wadable  
22 stream outside of this area, Cinnabar Creek. And it was  
23 located in the upper Holitna River, quite a way from Red Devil.  
24 And the reason why we sampled this stream was because it had  
25 been sampled in the past and elevated levels of mercury in fish

1 had been documented during that previous sampling by USGS. And  
2 Cinnabar Creek had a history of mercury mining. It had a small  
3 mercury mining operation. And today little evidence remains of  
4 that, but significant mercury was mined from that particular  
5 stream area, so we included that in the study as well.

6 Moving to results. These two graphs, the upper one is  
7 specific to Slimy Sculpin, and the lower one is specific to  
8 aquatic insects that were sampled in these particular creeks.  
9 What you see in terms of total mercury within the samples was  
10 that we thought elevated levels in both Red Devil Creek and  
11 Cinnabar Creek. But one of the things to point out, though, is  
12 that we found mercury in almost every fish that was sampled and  
13 about every creek that we sampled. And that's expected given  
14 the geology of the region.

15 This next slide continues with total mercury data from the  
16 tributaries, but these two graphs are specific, the upper one  
17 to Dolly Varden and the lower one to Arctic Grayling. And  
18 again, a similar pattern. We see low concentrations in all the  
19 fish we sampled, with higher concentrations in fish sampled  
20 from Red Devil and Cinnabar Creek. And again, these results  
21 were not surprising given the geology of the region. But one  
22 of the key questions we had was what is the contribution of Red  
23 Devil Creek to the larger aquatic environment of the Kuskokwim?  
24 And to explore this question, we decided to move and focus a  
25 lot of predatory fish like Pike and Burbot, or Lush fish, and

1 implanted radio tags as well. Because by tracking fish that we  
2 had also collected tissue from, we were able to better  
3 understand, or potentially better able to understand, seasonal  
4 movements and proximity to sources like Red Devil Creek.

5 So this is another good spot to pause for questions, and I  
6 see Joy.

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10 JOY HUNTINGTON: Yep. And so far, we do not have any open  
11 questions in the Q & A box. So maybe we can just give people a  
12 few minutes if they are just typing their questions. And thank  
13 you, Andrea, for letting me know you don't have any questions.  
14 So I don't see any coming in there yet. Again, there will be a  
15 few more opportunities, so, you know, maybe people are just  
16 letting you get to the end of your presentation, Matt, before  
17 they jump in with questions, or you might just be doing an  
18 excellent job of explaining everything. So, yeah, I don't see  
19 any hands raised. And I do believe we might have a phone  
20 participant calling in soon, but they are not online yet. So I  
21 will just hand it back to you, Matt. And we will be checking  
22 in -- just for folks that are online, we'll be checking back in  
23 for questions when Matt's slides are done, and he has about  
24 seven more after this one. So just kind of a check-in on that.  
25 And I will hand it back to you, Matt. Thank you.

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4 MATT VARNER: All right, great. And since we have someone  
5 that's going to join on the phone, I'll start at least  
6 mentioning what slide I'm on so they might know to follow  
7 along. So slide #14 here really gives an overview of the  
8 telemetry tracking component of the project. From 2011 to  
9 2013, we tagged hundreds of fish. Specifically, the Burbot and  
10 Pike tags lasted about two years, while the Grayling tags  
11 lasted about one year. And so the tracking data, again, was  
12 really geared towards allowing us to pair seasonal movements  
13 with the tissue samples that we collected when we implanted the  
14 tag for those individual fish. So very cutting edge. No other  
15 study has ever done this before, at least at the time that we  
16 did this project.

17 For this analysis, and this is slide #15, and it shows  
18 project area as it relates to the telemetry project. And for  
19 this analysis, we divided the study area based on large  
20 tributary or watershed junctions with the Kuskokwim or simply  
21 by large tributaries coming in, like the Holitna for example.  
22 We were most interested in the residency of Pike and Burbot  
23 within the Kuskokwim between the George and Holitna Rivers  
24 since Red Devil Mine was within that section. However, the  
25 study area was fairly large, and we weren't sure what we were

1 going to see from the tracking data as it came in.

2 Slide #16 shows the fish movement results in terms of  
3 where fish tended to stay, at least where 90 percent of the  
4 fish stayed in the watershed or study area segment, and what  
5 their concentrations of total mercury were. And this is  
6 specific to Pike, this chart. And so for Pike, we found the  
7 highest concentrations from fish sampled in the George,  
8 Holitna, and Takotna Rivers. And elevated concentrations in  
9 Pike within these key watersheds, which are highlighted in  
10 yellow here, was significant when the data were compared to the  
11 seasonal habitat use from the radio tags. And what I mean by  
12 that is that we found that the fish sampled in these watersheds  
13 essentially stayed in those watersheds. Ninety percent of the  
14 fish we tagged, and we tagged well over 200 Pike, and 90  
15 percent of the Pike within these particular drainages stayed in  
16 those areas. And so what that means is that the tissue  
17 concentrations of mercury correlated with those particular  
18 watersheds. Not necessarily with Red Devil Mine, which is in  
19 the section of the Kusko above George River, which is the third  
20 bar from the left. In general, very few Pike were captured  
21 within the mainstem Kuskokwim. Even though the amount of  
22 effort that we put into capturing Pike was equal across all  
23 areas, we were unable to capture many Pike from the mainstem  
24 Kuskokwim. And that really relates to, I think as you guys  
25 know living out there, the habitats are pretty limited for a

1 species like Pike that are a visual predator, prefer slow-  
2 moving, clear-water slews or slack water areas, and those just  
3 really aren't common in the mainstem Kuskokwim, and are most  
4 common in the Holitna and the lower stretches of the George and  
5 Takotna.

6 Slide #17 just highlights those three drainages where we  
7 had the highest concentrations of total mercury, total average  
8 mercury, in Pike. And you can see the Holitna, the George, and  
9 the Takotna, so definitely watersheds that aren't necessarily  
10 associated with Red Devil Creek. So it was very enlightening  
11 to get this information and be able to explore it via the  
12 radiotelemetry data.

13 Slide #18 shows regional mercury concentrations and how  
14 they compared from our study to results from a Fish and  
15 Wildlife study on the Lower Kuskokwim and Lower Yukon. The  
16 Fish and Wildlife Service found high concentrations -- higher  
17 concentrations in large Pike within the Lower Kuskokwim and  
18 Lower Yukon compared to smaller Pike, which makes sense given  
19 that older, larger Pike would naturally have higher levels  
20 compared to younger, smaller Pike. The point being here is  
21 that their overall values for the Lower Kuskokwim really  
22 matches with our data for the Middle Kuskokwim but was much  
23 lower than what we found in the George, Holitna, and Takotna.  
24 So it really just speaks to the mercury belt concept when what  
25 we found correlated with what was also found in the Lower Yukon

1 and the Lower Kuskokwim.

2 Slide #19, again, is this key conclusion slide. And  
3 really to wrap up, through this multi-year study, we found  
4 elevated levels of mercury in fish and aquatic insects on  
5 streams that had a history of mercury mining, like Red Devil  
6 Creek. And although we found elevated concentrations in Red  
7 Devil Creek, we didn't see similar concentrations in the fish  
8 community in the Kuskokwim near the mine site. And again, this  
9 is likely due to the limited habitat quality for Pike, but it's  
10 probably also due to the very small size of Red Devil Creek  
11 compared to the Kuskokwim.

12 Based on the tissue samples and the telemetry data, it  
13 appears that underlying geology of the large tributaries within  
14 the Middle Kuskokwim, coupled with year-round habitat for  
15 species like Pike, have more of an influence on fish tissue  
16 concentrations of mercury.

17 This is the last slide for my presentation, but I wanted  
18 to highlight that, you know, today I've given a pretty high-  
19 level overview of the results. There's a lot more detail about  
20 the study and the results in this report that's shown here.  
21 And it can be found at the weblink at the bottom of this slide.  
22 The link at the very bottom of this slide will take you to the  
23 Alaska Department of Health and Human Services page. And that  
24 page that's linked there is very specific to fish consumption  
25 in Alaska, including the Kuskokwim.

1           Lastly, I wanted to highlight that my contact information  
2 is listed here, as well as the contact information for Dr.  
3 Angela Matz, who works for Fish and Wildlife Service and is an  
4 environmental toxicologist. Angela worked with me on the  
5 development of this study, design, and the analysis, and she's  
6 a great resource for questions related to mercury in the  
7 aquatic environment. So if you do have questions, feel free to  
8 reach out to Angela or myself in the future, or if you don't  
9 have questions today and something comes up later.

10

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13           JOY HUNTINGTON: Speaking of questions, let's check in one  
14 more time while we still have Matt on the line. And Matt will  
15 be here as well for the rest of the meeting. But if you do  
16 have question specific to Matt's presentation, I think it's  
17 important to kind of have a good understand of the material  
18 that he presents before hearing kind of maybe a bigger picture  
19 and a more descriptive presentation from Mike here in a little  
20 bit on the preferred remediation plan. So if you do have  
21 pressing questions on Matt's presentation, please raise your  
22 hand or write a question in the Q & A box. And I do not see  
23 any hands raised at this time, Matt. So I think we are pretty  
24 safe to move over to Mike's presentation. And Mike, I think,  
25 is just getting his presentation loaded at this time. And I've

1 already shared Mike's specific role on the project. And I  
2 think many of you have worked with him or communicated with  
3 him. He's been definitely on this project, I think, for the  
4 whole duration and is really the most -- I think the most kind  
5 of informed and involved person to date, so really looking  
6 forward to his presentation. And it looks like he is ready to  
7 go, so I will hand it over to Mike McCrum.

8

9

10

11 **RED DEVIL MINE PLAN PROPOSAL, MIKE MCCRUM**

12 MIKE MCCRUM: Thanks, Joy. I don't have my video up, but  
13 I think that's probably fine. What you need to pay attention  
14 to is what's on the screen as well. Well this presentation is  
15 kind of the culmination of a pretty concerted long-term effort  
16 to investigate this mine site and establish what we think will  
17 be an effective cleanup approach. What I'm going to be talking  
18 about today is a document called the proposed plan, and it's an  
19 important step in the CERCLA process, or the (indiscernible)  
20 process, that meets a key requirement to seek input from the  
21 public and potentially affected communities on a cleanup  
22 approach that we established through the work we did and the  
23 investigation and feasibility study.

24 So what I want to talk about today is the main results  
25 that we got from the investigation. And then I want to talk

1 about how we did a feasibility study based upon the  
2 investigation results and established alternatives for cleanup.  
3 And then through some work we did as part of the feasibility  
4 study, what we believe is the best approach, or in the  
5 terminology of CERCLA, a preferred cleanup approach. And I'll  
6 spend some time talking about that and the work that we did to  
7 establish why that is a preferred approach.

8       So I just want to spend a little bit of time here at first  
9 going through the primary results of the investigation. I  
10 think as everybody understands, this is a very old mine. It  
11 was started in the 1930s. It was an underground mine for most  
12 of its life. And they processed the ore that they took from  
13 the mine on the mine site. And it's the remnants of that  
14 process, called tailings, that are the main issue that we  
15 investigated for this project.

16       Through that investigation, we identified three primary  
17 contaminants of concern. They are mercury and arsenic and  
18 antimony. Those metals reflect the minerology of the ore  
19 deposit itself. The ore was primary cinnabar and arsenopyrite  
20 and realgar, which contains mercury -- or I'm sorry, arsenic.  
21 The cinnabar contains mercury. And then a mineral called  
22 stibnite contains antimony. And so we looked at a lot of  
23 different compounds, both organic and inorganic, and these are  
24 the three contaminants that we identified that were of greatest  
25 concern.

1           As I mentioned, the tailings that are remnants of the ore  
2 processing they did onsite are the primary source of the  
3 contaminants. But through interaction between water and those  
4 tailings, the soil in the vicinity of the tailings piles has  
5 been affected as well as both the water and the sediment at Red  
6 Devil Creek. The tailings are pretty much limited to the area  
7 right around the creek in the bottom of the valley.  
8 Groundwater comes out of the bedrock there and flows into the  
9 creek. And so that shallow groundwater that's underneath the  
10 creek has also been affected by the tailings. And then for  
11 many years after the mine closed, and probably while it was  
12 still operating, some of those tailings migrated down the  
13 valley and made their way into the Kuskokwim River. And so the  
14 sediment at the bottom of the Kuskokwim River near the mine  
15 site has also been affected.

16           As part of the investigation, we did a risk assessment  
17 which looks at different scenarios that people and animals  
18 might be exposed to these contaminants. And we evaluated the  
19 risk to the people and the animals that might be exposed. And  
20 for the mine site itself, we calculated that there could be  
21 relatively high levels of risk. And it's that risk to exposure  
22 to the tailings, either direct or indirect, that really is the  
23 basis for deciding that we need to take action here.

24           So I want to talk a little bit about the investigation.  
25 And the figure that I have up is actually a fairly complicated

1 figure. A lot of the information on here, you don't  
2 necessarily need to pay attention to, but what I want to point  
3 out is the river is on the right-hand side. The Red Devil  
4 Creek flows through the middle of the mine site right in this  
5 area here. And let me back up here for just a second. Most of  
6 the groundwater contamination that we discovered came from  
7 monitoring wells that were right down in this area here. And  
8 this is where the tailings piles were most prevalent. This is  
9 where the soil contamination is most prevalent. And this is  
10 the area that we have focused most of our effort.

11 As part of the later phases of the investigation, we did  
12 drill some monitoring wells up in this area of the site. We  
13 didn't find any tailings up there, which as I mentioned are the  
14 primary source of contamination. But what we did find,  
15 particularly in the area of the underground workings which is  
16 illustrated by these green and blue and yellow lines here,  
17 which are really the underground workings, there is still a lot  
18 of natural mineralization in the bedrock in this particular  
19 area, and it has a significant effect on the groundwater  
20 concentrations of those metals in this area. Further up, the  
21 concentrations are lower. But in the area of the workings and  
22 the areas of the tailings, the concentrations are elevated.  
23 And they're greatest in the vicinity of the tailings.

24 As I mentioned, we did a risk assessment. We used the  
25 soil data which demonstrated that there are high concentrations

1 due to the presence of tailings in this part of the mine site  
2 here. This is kind of an oblique view of the mine. This is  
3 the river, obviously, in front. This is the barge landing.  
4 The creek runs right through here. The main buildings and  
5 shafts and things for the mine were right in this area here.  
6 This is where all the tailings are. You can see that the  
7 slopes here are quite steep. And that relief tended to contain  
8 those tailings and limit them to the area right around the  
9 creek. And so most of any exposure would be to either water in  
10 the creek or the tailings on the ground there. And what this  
11 slide summarizes are the results of that risk assessment that I  
12 mentioned.

13 Through the risk assessment, we looked at toxicity, and we  
14 looked at cancer risks. And surprisingly, most of the risk,  
15 both for potential cancer-causing agents as well as toxicity,  
16 comes from the arsenic. Mercury is known to be toxic. It's  
17 not necessary a carcinogen, but it is quite toxic. But the  
18 prevalence of the arsenic in the tailings is what created most  
19 of the risk that we calculated. So for the mine site, we ended  
20 up, you know, estimating relatively high levels of risk for  
21 different scenarios including residents, if someone were to  
22 live there and drill wells and drink the water, if they were to  
23 put a new mine there is one of the scenarios that we looked at,  
24 and workers would not live there but they worked there for 10  
25 hours a day. But we also looked at exposure to subsistence

1 hunters as they moved across the mine, and perhaps they drank  
2 some water out of the creek.

3 We did a second risk assessment looking at the sediment in  
4 the river, because that's an area that we know has been  
5 affected and it's a potential source of migration offsite. The  
6 results of that risk assessment were a little bit different.  
7 Some of the data that Matt collected as part of his study fed  
8 into this. Primarily, they helped us understand that the  
9 habitat, the fish habitat, in this area of the river is really  
10 not very good, so there are not a lot of fish here. But there  
11 are elevated concentrations in the sediment itself. The  
12 concentration patterns pretty clearly indicate that they're  
13 coming out of Red Devil Creek and moving downstream, but they  
14 tend to diminish as we move downstream. The results of the  
15 risk assessment was that for both cancer causing compounds, the  
16 arsenic, and toxic compounds, the mercury and the arsenic, we  
17 met the EPA standard for risk, but we were above the DEC  
18 standard, so it was a little bit more gray. But we're still in  
19 a position where we feel like we need to take action.

20 So as Bonnie mentioned, we did a little bit of work in  
21 2014. We knew that there was -- these are tailings piles. You  
22 can see they were quite steep. They were really having an  
23 impact on concentrations in the sediment in the creek that  
24 flows into the river, so we took some action in 2014 to prevent  
25 that. This is where the biggest part of that big tailings pile

1 is and where the creek run right next to it. So we pushed that  
2 pile back and regraded it. We straightened out the creek in  
3 the vicinity of those tailings piles. And then we put in a  
4 weir, or a small dam, right here, and created a pond so that  
5 any material that's in the creek that would continue to move  
6 downstream, it would be caught here and would not continue to  
7 move into the river.

8 So having finished that early action, we moved on to the  
9 feasibility study. And we used the risk assessment results to  
10 develop objectives for the cleanup. We looked at ways to  
11 prevent the direct and indirect contact of the tailings and the  
12 impacted soil and sediment in the creek. We wanted to  
13 eliminate the impact of those tailings on the creek water and  
14 the sediment. We wanted to eliminate impacts on groundwater.  
15 And then we also recognized that no matter what kind of action  
16 we took, we would need to monitor for an extended period of  
17 time.

18 So this is kind of a different way of saying the same  
19 thing. We're kind of focusing some of our actions in on  
20 different media, some emphasize the creek and groundwater more,  
21 some emphasize the tailings a little bit more, but very similar  
22 objectives.

23 So this might be a good time to stop, Joy, since I  
24 finished talking about the investigation, and I'm about to move  
25 into the feasibility study.

1

2

3

4 JOY HUNTINGTON: Sounds good. Thank you, Mike. So I see  
5 that we do have a new participant joining us online, and so  
6 thank you for joining us. And just to go over a few of the  
7 tools that you have to interact with the presenters this  
8 evening. You can utilize the Q & A box down at the bottom of  
9 your screen. There's a Q & A button, and you can type your  
10 questions into the box there, and we will read them aloud. And  
11 we would also love to share your name when we ask the questions  
12 if possible, just to keep track for our transcription. And  
13 also the other way to ask questions, when we pause for  
14 questions like now, is to raise your hand. And so down at the  
15 bottom of your screen is also a raise hand button. So if you  
16 do have any questions for Mike at this time, please raise your  
17 hand. And when we open your line, you're automatically muted.  
18 And so to unmute yourself once we open your line, and it will  
19 just be your audio that comes on, your video won't show at all,  
20 but when we do open your audio line, you'll have to also unmute  
21 yourself down at the bottom left-hand corner of your screen.  
22 So just kind of a heads-up on that. And I do not see any  
23 questions at this time being typed or in the Q & A box or any  
24 hands raised. So, Mike, I will hand it back over to you to  
25 continue with the presentation.

1

2

3

4           MIKE McCRUM: Okay, thanks. As I mentioned, we used the  
5 results of the investigation and the risk assessment to  
6 identify potential technologies or cleanup methods that we  
7 could use. And through that analysis, we identified four  
8 different alternatives for cleaning up the site.

9           The first one, and the most fundamental one, is a no  
10 action alternative which provides kind of a baseline condition,  
11 what would happen if we didn't do anything. I think we all  
12 understand that that's not viable, but we needed to evaluate it  
13 as far as the process.

14           The second alternative is something that we evaluated as  
15 sort of a very simple fix, if you will. And that involves  
16 simply encircling the entire mine site that we surveyed out,  
17 it's about 190 acres, with a fence that's 12 feet high. The  
18 concept being it would prevent, you know, people and animals  
19 from entering the site and coming into contact with the  
20 tailings and the contaminated soil and the sediment. And while  
21 it would potentially be effective in addressing the direct  
22 contact, risk associated with the direct contact, we know that,  
23 you know, the water is effected, we know that sediment in the  
24 river is effected, and therefore this particular alternative,  
25 while it would be effective in some way, would probably not

1 really work as well as we need it to.

2 Alternatives three and four are similar in that they both  
3 involve excavating a relatively large volume of material right  
4 in the vicinity of Red Devil Creek where the tailings and the  
5 contaminated soil and sediment are. In both three and four, we  
6 would excavate essentially the same materials. Where they  
7 differ is under alternative three, that material would be  
8 consolidated in a repository on the mine site itself. Whereas  
9 alternative four, that same material would be transported  
10 offsite to a permanent facility in eastern Oregon where you can  
11 dispose of hazardous waste.

12 So this is kind of a graphic illustration of the areas  
13 that would be affected by the different alternatives. Under  
14 alternative two, this entire area would be fenced. That's  
15 about 190 acres. Under alternatives three and four, we would  
16 excavate about 200,000 to 210,000 cubic yards of tailings and  
17 soil and sediment from this area that's outlined in yellow.  
18 And you can see that it's the tailings piles of the area right  
19 on both sides of Red Devil Creek. And then this area down  
20 here, it was essentially -- it was initially constructed as a  
21 barge landing. But over the years, a lot of that material has  
22 moved down the valley through the action of the creek and has  
23 spread out over that barge landing, and so that would have to  
24 be excavated as well.

25 Here's some of the sampling that we did in the river. We

1 identified two areas, in the green here, where the shallow  
2 sediments have higher concentrations of mercury and arsenic.  
3 And under both alternatives three and four, these would be  
4 excavated. And then this little area in yellow is near the  
5 shore, but it's just above the kind of immediate stage of the  
6 river, so it's essentially soil.

7         Also under those two alternatives, three and four, there  
8 is a monofill, which is a small landfill, right here. This is  
9 the site where the material, the ore, was processed. The  
10 remnants of it, the tailings that I mentioned before, were  
11 essentially pushed out on the ground through a shoot in that  
12 building and spread out in this area here. And so the initial  
13 work that BLM did in the late 1990s, this building was  
14 demolished. The kiln and the equipment used to process the ore  
15 was taken apart. They built a landfill here that was contained  
16 in a material called Hypalon and then covered with more  
17 tailings. And under both of those alternatives, that would  
18 essentially be deconstructed. The Hypalon and the building  
19 material and the old equipment would be shipped offsite for  
20 disposal. And the tailings associated with it would be  
21 consolidated with the rest of the excavated material.

22         As I mentioned under alternative three, all that stuff  
23 that gets excavated would be consolidated in a repository  
24 placed here. And under alternative four, it would be shipped  
25 offsite. There would be monitoring if we were to construct a

1 repository, primarily of groundwater and surface water, and  
2 that would cover this area here. And then we're proposing to  
3 not necessarily remove any material but monitor the sediment  
4 over time as part of these two -- both proposals three and  
5 four.

6 So I see Joy is here with us again.

7

8

9

10 JOY HUNTINGTON: Yeah. No, and I know I just stopped  
11 recently for questions, but because of just, I guess, the  
12 nature of the slides that you've just presented, and I just  
13 wanted us to pause for a moment and see if we had any hands  
14 raised at this time or any questions in the Q & A box. And I  
15 do not see any questions in the Q & A box or any hands raised.  
16 So I mean we just checked in a few slides ago. So with that, I  
17 will -- I hand it back over to you, Mike. And we will be  
18 stopping again two more times for questions. Once will be in  
19 about five slides. And then after that, we'll stop at the end  
20 of the presentation. So just to check in and let people know  
21 when we'll have some opportunities and give you a chance to ask  
22 questions. Thank you. And I'll hand it back to Mike.

23

24

25

1           MIKE McCRUM: This is something that we made a decision on  
2 through the feasibility study itself. This is a slide that  
3 many people haven't really seen yet. It's an aerial view of  
4 the mine. This is Red Devil Creek right here. This is Red  
5 Devil Creek. This is the river. Where those tailings piles  
6 are that I had mentioned, and not all tailings are made the  
7 same, some have higher concentrations than others. And through  
8 the investigation, we've identified an area where the  
9 concentrations are particularly high. And the material within  
10 this colored box, these colors really just indicate  
11 concentration readings if you will. But the material excavated  
12 from within this box would be pretreated by mixing it with a  
13 fairly dry slurry of (indiscernible) cement so that it coats  
14 all that material. And then it will be consolidated -- either  
15 consolidated in the repository, if we were to do that. If we  
16 were to select alternative four, it would not be treated, and  
17 it would just be moved offsite with the rest.

18           This is a Photoshopped picture. It really kind of  
19 illustrates a little bit more clearly the onsite repository  
20 that's part of alternative three. Again, the river, the creek  
21 is here, the tailings piles are here. This is up at the top of  
22 the hill above the mine. The elevation difference between this  
23 repository and the river is about 300 feet. So at this  
24 location, we're pretty confident that this repository would not  
25 be subject to any damage from flooding or anything like that.

1 We've done a stability study, a geotechnical stability study.  
2 We believe that there's space up here for it. And we believe  
3 that the space is such that we could, with a little bit of cut  
4 and fill right in the vicinity of the repository, we could  
5 create a facility that's stable. And so this would be designed  
6 to contain -- the number here is 205,000, but somewhere in  
7 between 200,000 and 210,000 cubic yards of material.

8         So I want to talk a little bit about the design of this  
9 repository. Through the feasibility study, this feature got an  
10 awful lot of attention. Consequently, we put an awful lot of  
11 time and energy into the design and evaluation of this to  
12 address concerns about whether or not this facility, as it's  
13 designed, would protect the environment from these tailings and  
14 soil. So this is a cross-sectional view of the repository as  
15 if we had cut the thing in two and we were looking at the  
16 insides of it. We have the water table down here. And this  
17 brown material is the bedrock. We would place a minimum of  
18 five feet of loess, which is very fine silty soil, on top of  
19 the bedrock to prepare the surface. Then we would take the  
20 material that was excavated and put it on top of the soil. And  
21 then we would cover it with a little bit of dirt and then a  
22 geomembrane liner, which is a very heavy plastic type material.  
23 It comes in very large rolls. We would roll it out over the  
24 top and seal the seams. And then over the top, we would put  
25 more soil. And then we would plant it with grass. And that

1 grass and soil helps protect it. It helps stabilize it. And  
2 it actually helps prevent some of the water, which we're most  
3 concerned about, the rain and the snowmelt, from infiltrating  
4 down into the repository.

5 So I want to talk on the next couple of slides about some  
6 details in this, because they're very important in terms of  
7 considering whether or not this kind of facility would be  
8 effective in protecting the environment and human health. I  
9 want to look at, in more detail, this cap construction. And I  
10 want to look at how the cap in the upper part of the thing  
11 would be keyed into the ground surface.

12 So starting with that lower one, you can see, here is the  
13 bedrock. It would be treated with -- it would be covered with  
14 that fine silt. We would consolidate those tailings and soil  
15 and sediment on top of that. We would cover it with more  
16 locally derived dirt that's not contaminated. And you can see  
17 in terms of relative thickness, the geomembrane is quite thin.  
18 It's really, you know, a few inches thick, but it's very, very  
19 heavy plastic. And we would dig a trench on the outer edge of  
20 this thing, and we would run that plastic down into the bottom  
21 of the trench, and then backfill it with the material to hold  
22 it in place to make sure that wind and snow and everything  
23 could not penetrate through it. And as I mentioned before, we  
24 would put soil on that and plant it. We would make sure that  
25 the side slopes are no steeper than about a three-to-one grade

1 to make sure that it stays stable and doesn't move. And then  
2 in addition, we would excavate ditches around the outer  
3 perimeter of it. There really isn't much surface water up in  
4 that part of the site, but at times when snow is melting or  
5 maybe there's a heavy rain, you would want to make sure that  
6 nothing was ponding or moving -- you know, water was moving  
7 that would potentially run into this.

8 So this is another kind of very general look at a cross-  
9 sectional view of the repository and then the water table, the  
10 bedrock, the loess, the material, more soil with the liner and  
11 soil on either side of it really. In order to address concerns  
12 about whether or not a design like this, with no real  
13 geomembrane on the bottom, would be effective in protecting  
14 primarily the groundwater from this material, we ran a series  
15 of simulations using an EPA model called Help to simulate local  
16 rainfall and snowmelt as it falls on the pile and migrates  
17 through this material to the bottom. And then we used the  
18 results of the Help model and we simulated flow through this  
19 lower soil layer and into the bedrock. And what we wanted to  
20 see was what impact, if any, it would have on concentrations in  
21 the groundwater. So the Help model simply looks at water  
22 movement. So we had to use data that we collected as part of  
23 the investigation to estimate what the concentration in the  
24 leachate, which is the water that comes in contact with these  
25 tailings, what it would be in the bottom of this repository.

1 We used data that we collected from groundwater that was in  
2 contact with those tailings down by the creek, and we came up  
3 with these concentrations. They're actually quite high  
4 relative to what you would normally see in a normal water. So  
5 we wanted to make sure that what we were simulating was  
6 realistic.

7 This very quickly kind of summarizes the results of that  
8 modeling effort. Again, we're looking at antimony and arsenic  
9 and mercury. We used these initial concentrations at the base  
10 of the repository, and we simulated flow of that leachate  
11 through that soil and bedrock in the subsurface. What we found  
12 was that by the time that water, that leachate, made it to  
13 these depths, the concentrations of each of these metals was  
14 quite low, approaching zero. We compared them to these DEC  
15 drinking water standards, which you can see the numbers are  
16 quite a bit lower than the initial concentrations. And so in  
17 effect what this tells us is within .05 feet to .15 feet, or  
18 1/10th of a foot, the mercury concentration is below this  
19 standard. In less than a foot, the arsenic concentration is  
20 below this standard. And somewhere between three and three and  
21 half feet, the antimony concentration is there. So if we have  
22 a five-foot thick zone of soil underneath the repository, what  
23 this modeling tells us is that that material wouldn't even make  
24 it into the bedrock. It would be stopped in that soil. Now  
25 the modeling that we did, we simulated these real rain records

1 for Red Devil. We started our simulation while the repository  
2 was under construction before the cap was placed.

3 Is it time for us to stop and ask questions, Joy?

4 JOY HUNTINGTON: It is time for questions whenever you're  
5 done with this slide. And we do have two questions in the Q &  
6 A box. And I wanted to see if there's any hands raised, and  
7 there is not. But if we do need clarification or you have a  
8 follow-up on the question that you asked, and Andrea Gusty  
9 asked the questions, then we might open your line just to have  
10 a little bit of dialogue and back and forth if we need any  
11 clarification. So just a heads-up on that, even though there's  
12 not any hands raised at this time.

13 And the first question is a TKC shareholder lives in the  
14 valley on the other side of the proposed repository. Will the  
15 leachate from the repository reach her drinking water well?  
16 Very good question.

17

18

19

20 MIKE McCRUM: Yeah. I think -- I understand the concern.  
21 And that is really the concern that drove this entire process.  
22 Let me just finish by saying that the modeling that we did, the  
23 first two years of the simulation was while the repository was  
24 under construction and there was no cap, so no liner, no cap.  
25 And then at the end of the second year, we added a cap and

1 extended the simulation for another 48 years. So we did what  
2 we could to try and simulate a real-world condition, kind of a  
3 worst-case scenario, if you will. And through that entire  
4 simulation, what we found was that that leachate just did not  
5 penetrate deep enough to even reach the water table. The  
6 implication of that with regard to the question that was just  
7 asked is that the leachate will not make it to the water table;  
8 therefore, we wouldn't be expected to have any impact on the  
9 groundwater at all, even directly underneath the repository  
10 itself. So these modeling results strongly indicate that  
11 people who live near the other watershed would not be affected  
12 by leachate that would be found in this repository.

13

14

15

16 JOY HUNTINGTON: Okay, thank you, Mike, for answering that  
17 question. And we have another question here from Andrea. And  
18 the question is it is not clear how the selected alternative  
19 would be protective of groundwater because the excavated  
20 materials would be "adequately isolated." Without a liner, the  
21 materials are only partially isolated. The plan for long-term  
22 monitoring without pre-established COC goals for groundwater  
23 concentrations does not appear to meet the goal of being  
24 protective of groundwater.

25

1

2

3           MIKE McCRUM: I'm not sure there's a question in there  
4 that I can answer. It sounded like maybe more of a statement.

5

6

7

8           JOY HUNTINGTON: Okay, yeah, that -- I guess if you have  
9 any clarification on that item or on that statement. And  
10 you're right. We can definitely ask that testimony at the end  
11 maybe be provided as well.

12

13

14

15           MIKE McCRUM: Joy, one thing I could say that might  
16 address that if it is in the form of a question. I think what  
17 the modeling shows us is that even when you allow that material  
18 to get wet, if you will, for two years through rainfall and  
19 snowmelt, once you put the cap on, that cap is very, very  
20 effective in preventing more water from moving into the  
21 repository. And so even after two years of being exposed,  
22 there just isn't enough water in it to travel all the way  
23 through the repository and all the way down through the loess,  
24 through the bedrock, and into the water table. So there's some  
25 interaction between that leachate and the soil, which is one

1 reason why those concentrations diminish with depth, but I  
2 think the major finding of this was that there just is not  
3 enough leachate there to actually migrate all the way to the  
4 water table, and that's where the main protection is.

5

6

7

8 JOY HUNTINGTON: Thank you, Mike. And I don't see any  
9 additional follow-up questions in the Q & A box at this time.  
10 And I don't see any hands raised either. And just an update  
11 for everyone. We do not have anyone that has called in yet via  
12 their phonenumber, except for one of our panelists. And so we do  
13 not, at this time, need to be giving the slide numbers. That's  
14 really mainly if we have someone following along with a hard  
15 copy. So I just wanted to give an update to our presenters as  
16 well that we're still okay without sharing the slide numbers,  
17 because everyone should be able to see the screen just fine.  
18 And, Mike, I think at this time you can carry on with the  
19 remaining slides that you have. It seems -- I think there's  
20 just about three more slides. And then we will stop again for  
21 questions, and then definitely open it up for public testimony  
22 as well.

23

24

25

1           MIKE McCRUM: So I've been talking quite a bit about the  
2 repository primarily just because of all the things that, you  
3 know, we're potentially planning to do here, it's really the  
4 most complex, and it's the most permanent as part of that  
5 alternative. I have yet to actually say what is preferred, but  
6 I suspect that based on the amount of attention the repository  
7 has gotten, most people have guessed. Based on the work that  
8 we've done, the BLM believes that alternative three, which  
9 involves excavation of all this material, deconstruction of  
10 this landfill, hauling the hard material, the building stuff  
11 and the kiln and stuff, offsite for disposal, as well as the  
12 Hypalon, consolidating in a capped repository up here well away  
13 from the surface water, minimum separation between this and the  
14 groundwater table of 10 feet, coupled with monitoring of the  
15 sediment in the river, is probably the most effective -- we  
16 believe the most effective approach to cleaning up this site.  
17 And that's based upon criteria that the EPA has established for  
18 the effectiveness, protective -- you know, are we protecting  
19 human health and the environment, are we consistently staying  
20 in front of regulations, cost, can it be constructed. Those  
21 were all things -- criteria that we used to evaluate all the  
22 alternatives. And so that's what we're proposing, and that's  
23 what we're requesting that people comment on as well is  
24 alternative three, which is the preferred one.

25           Just to kind of finish that off, these are some of the

1 remediation objectives that we developed based upon the risk  
2 assessment. We feel like by excavating this material in the  
3 vicinity of the creek, we remove the risk due to direct and  
4 indirect contact, we eliminate the impacts of those tailings on  
5 the groundwater and the water in Red Devil Creek, because they  
6 just won't be there anymore.

7 We believe that through the action that was taken in 2014,  
8 we're already starting to see these concentrations in the river  
9 diminish. We think they will continue to diminish over time  
10 through just the action of the river. These small areas,  
11 either in the shallow water or just above the water, are places  
12 where through our sampling we found kind of localized hot  
13 spots, if you will, so we'll excavate those and eliminate that  
14 potential human contact. And then by placing it in this  
15 facility that we think has the effective preventative cap, that  
16 it will be safe. But we will certainly need to monitor the  
17 groundwater in this area and the surface water in Red Devil  
18 Creek. We have upwards of 60 monitoring wells in this entire  
19 area. And while we won't monitor all of them, we will  
20 certainly monitor a significant percentage of them.

21 And then finally, this CERCLA process requires that every  
22 five years after this action, or whichever action we take, is  
23 affected, we have to compile the monitoring data. And we sit  
24 down with the DEC and the EPA, if they participate, and review  
25 that. And if we see trends in those data that suggest that

1 this is not being as effective as we had anticipated then we  
2 need to come up with a plan for addressing whatever concerns  
3 there are. And that would happen every five years until the  
4 trends have become very clear for a long period of time, and we  
5 recognize that it's going to be effective in the long-term. So  
6 it's not like we just build this and walk away. We would  
7 monitor the one. We would also visually monitor the cap and  
8 the repository. We want to make sure that that thing stays in  
9 good shape, because that's the main preventative measure that  
10 we're putting in place.

11 So finally, this is my contact information. This is also  
12 contact information for Bonnie Million, who is the field office  
13 manager for BLM in this part of the state. As Joy mentioned at  
14 the beginning, this is a proposed plan, so we haven't taken any  
15 action yet. What we've presented to you today is what we  
16 believe is the most effective way to address the contamination  
17 at Red Devil Mine, but we would very much like you to provide  
18 comments. This meeting is being recorded. We'll develop  
19 transcripts. And we will be formally responding to all  
20 comments before we make a decision.

21

22

23

24 JOY HUNTINGTON: Thank you, Mike. And we do have a  
25 question for you in the Q & A box. And while I'm reading the

1 question, it turns out that we do have somebody on the phone  
2 that has -- it just confused me because they have the name  
3 listed as one of our panelists, but I think they just used the  
4 credentials for one of our panelists. So with that being said,  
5 if you have a question, we will open your line for our phone  
6 participant. And the way that you raise your hand is by  
7 pressing star nine. And once we've opened your line, if your  
8 line is muted then star six is how you open your line. So just  
9 a heads-up for our phone caller to please just press star nine  
10 if you'd like to raise your hand.

11 And I'll move over to our Q & A box. And we have a  
12 question from Andrea Gusty. And the question is the proposed  
13 plan suggests that a bottom liner and a leachate collection  
14 system on the repository would present "significant long-term  
15 operational challenges related to leachate collection, storage,  
16 and management" at the mine site. However, these challenges  
17 are not identified or described, so it is not clear why this  
18 option is identified as rating low for implementation ability.  
19 Overall, liners are commonly used at landfills, mining  
20 operations, and other solution recovery operations. Why not  
21 use one here?

22

23

24

25 MIKE McCRUM: Well it's true. Bottom liners are commonly

1 used in solid waste facilities all over the country. The  
2 challenges that BLM would face in developing a bottom liner  
3 with a leachate collection system in a location like this is  
4 that it's very remote. In order to maintain facilities like  
5 that, you would need to have power. You would need to have  
6 other physical facilities. You would have to man it on regular  
7 basis. And we would have to periodically either extract that  
8 leachate and treat it and discharge it to the river, or store  
9 it for a long period of time and haul it a very long distance  
10 down the river and dispose of it at a permanent facility. If  
11 the results of the analysis that we did suggested that a cap  
12 without a bottom liner was not effective, then that is the  
13 alternative that we would have likely selected. But it's  
14 challenging. It's difficult. By consolidating that leachate  
15 and either storing it for a long period of time or shipping it,  
16 you have the risk of spilling it. Those are some of the risks  
17 that we had to take into consideration when we were evaluating  
18 that option. Like I said, if we felt like the cap by itself  
19 was not effective then we would have had to move in that  
20 direction. But the analysis that we did pretty clearly shows  
21 that the leachate just isn't -- did not generated in sufficient  
22 quantity to really have an impact on the groundwater. So  
23 that's why we think a cap alone will be sufficient here.

24

25

1

2 JOY HUNTINGTON: Thank you, Mike, for answering the  
3 question. And I do not, at this time, see any hands raised or  
4 any questions in the Q & A box. While we're just giving it a  
5 few minutes here, and just in case anybody is typing their  
6 questions in the Q & A box right now, I just wanted to  
7 highlight that the final date for public comment is December  
8 18th. So just to let everybody know that there is still time  
9 to provide public testimony and public comments at the emails  
10 here that Mike has provided. So if you need more clarification  
11 prior to providing your final comments, that's a helpful date  
12 to have. And I still am not seeing any questions being asked,  
13 and I do not see anybody with their hands raised. Again, star  
14 nine is how you raise your hand if you're calling in with a  
15 phone.

16 And just to go over, we're going to transition at this  
17 time to our public testimony. And we only have a few people  
18 participating online today, so we are not going to have the  
19 testimony timed or anything. We may have to do that if we get  
20 a really large number of participants and attendees, but with  
21 the number that we have, I think we're pretty safe to just open  
22 the lines for public testimony. We do ask that you say and  
23 spell your name for the record, which will help us in preparing  
24 the transcript of the meeting. We do have a court reporter  
25 online, and they will be working with the recording. So I do

1 see a hand raised. So please say and spell your name for the  
2 record once we open your line, and also the community that  
3 you're calling from. And we have opened your line. And you  
4 are muted, and now you're unmuted. So you can begin whenever  
5 you're ready. Thank you.

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9 **PUBLIC COMMENTS**

10 ANDREA GUSTY: Good afternoon, everybody. My name is  
11 Andrea Gusty, A-N-D-R-E-A, G-U-S-T-Y. I am the president and  
12 CEO for the Kuskokwim Corporation. We are the village  
13 corporation for the Middle Kuskokwim area, which includes the  
14 Red Devil Mine site. Over the years, we've had many  
15 conversations with Mike, with Bonnie, with the team at BLM, and  
16 the team at the State of Alaska, and the EPA as everybody tries  
17 to figure out what the most protective way to cleanup Red Devil  
18 Mine site is. And this has been a long road to get to this  
19 point.

20 It's really unfortunate, of course for a lot of reasons,  
21 that COVID-19 has affected our state and our region, but not  
22 insignificantly affected the way that we are able to share  
23 information with our people. Internet connections are not  
24 great. Where there are great internet connections in the  
25 villages, we do not want people to be gathering around a

1 computer screen or in a room looking at, you know, a single  
2 printout of information that's being shared. So it's really  
3 unfortunate that we don't have a lot of interaction with the  
4 people that this is going to affect most.

5 It is my job to advocate for the people, for the  
6 shareholders, for everybody living in the Middle Kuskokwim, and  
7 for the health of our land. And for many reasons that we've  
8 talked about over the years, and for all the reasons in the  
9 official comments that we provided to the BLM about this  
10 proposed plan, we cannot support it. We do not feel that it is  
11 protective enough. We understand that more modeling has been  
12 done for this repository, and we appreciate that. But our  
13 people, like many Native people throughout the state of Alaska,  
14 we think in terms of generations. And the modeling has gone  
15 out 52 years. And we do not believe that that modeling is  
16 enough. I do not believe that it has been shown, for sure,  
17 that a repository without a bottom liner will be protective to  
18 the environment and to human health in the long-term.

19 And I understand, BLM, your point of, you know, of it  
20 doesn't look like it's working, we'll come back in, we're not  
21 abandoning the site. But I would argue that funding is not  
22 guaranteed. What we would like to see is the most protective  
23 plan possible. And that funding be obtained so that we know  
24 that it's at the beginning. We don't want to rely on  
25 potentially trying to receive funding later to fix a problem.

1 And by the time it's a problem, it's really a problem for the  
2 people of the Middle Kuskokwim.

3 So I appreciate everybody's time this evening. Again, we  
4 have provided official comments to this proposed plan. But the  
5 bottom line is we cannot support it. We would like to see  
6 something that is proven to be more effective in protecting the  
7 health of our people and the health of our land. Thank you.

8

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11 JOY HUNTINGTON: Thank you, Andrea, for your testimony.  
12 And I would like to ask at this time if anybody else would like  
13 to provide testimony, please raise your hand. And for our  
14 phone participant, again you press star nine. And for everyone  
15 else, you just raise your hand with the raise hand function at  
16 the bottom of your screen. So I'm keeping an eye out, and I do  
17 not see -- we'll give it some time here to see if anybody else  
18 has any testimony they would like to provide.

19 And, apparently, we had just a quick check-in with people.  
20 If you have heard or anyone that you know that was trying to  
21 call in, we were having some issues with our toll-free line,  
22 and that has been corrected now. And so we will make sure that  
23 that works for future meetings. And we apologize if anyone  
24 that you were trying to get on the meeting tonight had trouble  
25 calling in. So we will make sure we get that info out to

1 people and make sure.

2 We still have two meetings, so this is the second in a  
3 series of four meetings to provide the same presentation. As I  
4 mentioned, we also sent out hard copies of the presentations,  
5 and so hopefully people were able to get those and will be able  
6 to call in to the next two meetings that are happening next  
7 week.

8 And while we're waiting for people to raise their hand  
9 with public testimony, I'll just go ahead and share the times  
10 and dates of our next two meetings that we're going to have.  
11 Next week on Tuesday, October 27th, we have a meeting from 5:30  
12 to 8:00 p.m., so the same timeframe as this meeting. And then  
13 next Thursday, during the day from 12:30 -- or sorry, I'm  
14 saying the times when I'm supposed to call in. So for the  
15 first meeting, it's actually -- sorry, 6:00 to 8:00 on Tuesday  
16 the 27th. And then on Thursday the 29th, it is from 1:00 to  
17 3:00 p.m. So you don't have to call in early like we do, so go  
18 ahead and call in or log on from 1:00 to 3:00 p.m. Thursday,  
19 and 6:00 to 8:00 p.m. on Tuesday. So I hope I didn't confuse  
20 everyone with that. But those are our dates and times for our  
21 next meeting. And definitely we'll make sure that the toll-  
22 free number is working at that time.

23 And I still am not seeing any hands raised at this time.  
24 My view has changed somewhat with the attendees but, Lesli, you  
25 don't see any hands raised either, correct? Okay. And I'll

1 keep an eye. Yeah, we do have other opportunities, as I  
2 mentioned, next week. And it sounds like, Andrea, you have  
3 also provided more official testimony as well in addition to  
4 your verbal testimony at this evening's meeting. And I welcome  
5 other participants to also do the same, if they would like to  
6 send their testimony in writing instead. There's not a better  
7 way to provide public comment. All public comment is valued  
8 definitely at the same level, so there's not an advantage to  
9 providing it one way or another. It's just whatever you prefer  
10 and whichever way you prefer to communicate with the project  
11 team and provide your comment. Mike or Matt, do you have  
12 anything to add while we're trying to drum up some public  
13 comment here?

14

15

16

17 MIKE McCRUM: I just want to follow up on what you said a  
18 minute ago. And we did receive formal comment from TKC in the  
19 form of a letter last April. We still have that on record.  
20 And so our intention is to respond to those comments. We  
21 haven't forgotten about them.

22

23

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25 JOY HUNTINGTON: Thank you, Mike. Matt, do you have

1 anything else to add? Anything that you wish you would have  
2 said during your presentation and now you're kicking yourself  
3 over?

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7 MATT VARNER: No, but I appreciate everybody's time  
8 tonight. I don't have anything to add, though.

9

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12 JOY HUNTINGTON: Okay, thank you. Yeah, Lesli and Bonnie,  
13 it's kind of -- I think if you'd like to stay on a little bit  
14 longer and wait and see if any of our participants have  
15 comment? I don't see any hands being raised, so it's really  
16 your call. So I'll just see what your thoughts are on  
17 adjourning the meeting at this time or waiting a little bit  
18 longer.

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22 BONNIE MILLION: Well, we could -- we can hang on for a  
23 little bit longer, but I think we can conclude the formal  
24 portion. If the folks on the phone or Anne or Nick would like  
25 to provide comment, they definitely can, and we'll stay on.

1 But otherwise, as part of the formal presentation process, I  
2 think we are officially wrapped up.

3

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6 JOY HUNTINGTON: Okay. Thank you for that. So our  
7 participants, if you would like to stay on with us then we  
8 would love to have you and continue to have a conversation.  
9 But if you have other pressing activities or dinner or anything  
10 else that you need to go do, I think we're giving everyone the  
11 okay to sign off if you need to, but we'll just stay on a  
12 little bit longer.

13 Yeah, maybe so we're just -- oh, yeah. I see Lesli is --  
14 she also can end the meeting. I'd say we end it at 7:30.  
15 We've got a minute here for us to awkwardly stare at you,  
16 everyone that's participating. And we -- yeah, we have a few  
17 participants that have signed off. And, yeah, I just  
18 appreciate your participation and patience with kind of a new  
19 format.

20 I do see a question from Andrea on are you tracking how  
21 many people are participating and where are they from? So good  
22 question. I know Lesli cannot speak at this time, but she can  
23 write in the chat box. I am not sure. I don't have an answer  
24 on that. We are asking if people provide testimony or ask  
25 questions, then we are -- I guess, yeah, providing testimony,

1 we're asking which community they're calling in from. But I'm  
2 not sure if we're doing that for every person that just listens  
3 in and does not maybe give testimony. I am not sure. And I  
4 don't see anybody typing in the chat box to answer the question  
5 on that specifically.

6

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9 BONNIE MILLION: Are we on to Andrea's second question?

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13 JOY HUNTINGTON: I didn't -- yes. I didn't -- yeah, I was  
14 seeing if anybody had a better answer than me on if we're  
15 tracking where they're from.

16

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19 BONNIE MILLION: And I think we're only asking if they're  
20 providing comment or testimony, we ask for folks to identify  
21 themselves and what community they're from.

22

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25 JOY HUNTINGTON: Okay, okay.

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4           BONNIE MILLION: We keep track of names of the folks who  
5 participate and who call in (indiscernible), but we don't have  
6 a mechanism to identify what communities they're from unless  
7 they self-identify.

8

9

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11           JOY HUNTINGTON: Okay.

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15           LESLI ELLIS-WOUTERS: There is another question in that  
16 Andrea had asked if we are willing to add more opportunities  
17 for testimony. And I think Bonnie had answered that as we can  
18 add more meetings if it's requested.

19

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21

22           BONNIE MILLION: And, Andrea, just so you know, my plan,  
23 starting tomorrow, is to start -- (indiscernible) extensive  
24 communications, and we've sent a lot of letters, but I mean we  
25 all know letters -- mail is not always fantastic in western

1 Alaska, so I've got some time set aside tomorrow, and I'll  
2 start calling folks and see if they can participate in the  
3 meetings next week. And if they cannot, if they would like to  
4 have a separate meeting setup for their community, that is  
5 definitely something that's an option.

6

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9 JOY HUNTINGTON: And I see, Andrea, you have your hand  
10 raised, so I'm going to go ahead and let you unmute.

11

12

13

14 ANDREA GUSTY: Thank you so much. And I don't mean to  
15 dominate the discussion here, so I apologize. I know, and if  
16 you've been following the news you know, too, COVID, while the  
17 rest of the state has been dealing with it since perhaps  
18 February, it's really starting to hit our region very hard.  
19 And so I know that a number of the councils and leaderships of  
20 villages are having special meetings to address that, and  
21 that's kind of the pressing thing right now. And so I just  
22 worry that this is such an important issue, and there's really  
23 no good timing for it, it would seem. But that given  
24 everything that's going on right now, and the YK region now  
25 having the largest injection rate of the state per capita,

1 larger than Anchorage, that that is what everybody is focused  
2 on right now, worried about right now. And so that's why the  
3 questions about participation and the opportunity for  
4 participation outside of the four meetings that are currently  
5 scheduled. Thank you.

6

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9           BONNIE MILLION: You're absolutely right, Andrea. And the  
10 letters that we've sent out indicated that, that if there were  
11 additional dates or times that folks were interested in -- that  
12 we were going to setup these four just as a starting point, and  
13 then if communities, tribal councils, corporations were  
14 interested in setting up a separate meeting that we would --  
15 we're here. We're definitely here, and we're available for  
16 that. So I'll definitely reiterate that when I start calling  
17 folks tomorrow. It would be a huge, huge help if you talked to  
18 anybody, Andrea, on your end, definitely pass that message  
19 along. You know, this is a very important project, and it has  
20 been going on for a long time. And it's -- yes, we've had the  
21 comment period open since March, but this is -- it's  
22 complicated. It's a lot of information. So any opportunity  
23 that we have to be able to have remote conversations, at least,  
24 to talk through these things with whoever is interested, we are  
25 here, and we will make it happen.

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4 JOY HUNTINGTON: And, Andrea, your line is still open just  
5 in case you're wondering. You are muted, but your line is  
6 open.

7

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10 ANDREA GUSTY: Thank you. I was just typing. We do meet  
11 with our councils on a weekly basis.

12

13

14

15 UNIDENTIFIED FEMALE: Oh, great.

16

17

18

19 ANDREA GUSTY: And so I will make sure that my staff makes  
20 sure that this is part of the conversation. And then sometimes  
21 our biggest job is facilitation. And so we'll make sure that  
22 the tribal and city council leaderships understand that offer  
23 from BLM. And if they don't, we'll -- we can forward any  
24 letters. Because like we all recognize, this is super, super  
25 important. I just don't want it to get buried with everything

1 else because this is -- we're talking a long-term -- hopefully,  
2 longer term than COVID is with us, but who knows, right? A  
3 long-term plan and that will impact our region. And people are  
4 worried about it. It's just this is getting to be -- this  
5 COVID situation, getting to be really dangerous in the region.  
6 So thank you everybody for tonight.

7

8

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10 BONNIE MILLION: Absolutely. Thank you, Andrea, so much  
11 for taking time out of your evening. I know you're super,  
12 super busy and family stuff and whatnot, so thank you so much  
13 for participating. And as always, it is so great to hear your  
14 voice, and I'm really sorry that we can't do this in person.  
15 It's been so long. So, okay.

16

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19 JOY HUNTINGTON: Okay, that's it.

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23 LESLI ELLIS-WOUTERS: (Indiscernible.)

24

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2 JOY HUNTINGTON: Wrap it up?

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6 BONNIE MILLION: Yeah. I think we -- yeah, I think we  
7 might be done. Andrea, you've got my contact information. If  
8 there's anything else that comes up, please, please, please  
9 give me a call, shoot me an email. Like I said, I'll start  
10 calling tribes tomorrow and trying to reach out that way. And  
11 if you hear anything on your end, please do let me know. Okay.

12

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15 LESLI ELLIS-WOUTERS: And with that, I will end the  
16 meeting. Thank you, guys.

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20 JOY HUNTINGTON: Sounds good. Thanks, everybody. Have a  
21 good night.

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25 BONNIE MILLION: Thanks, everyone. Take care and be safe.

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4 THE REPORTER: Meeting adjourned at 7:37 p.m.

5 (The meeting adjourned at 7:37 p.m.)

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**TRANSCRIBER'S CERTIFICATE**

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I, Gloria Schein, certify that the foregoing pages numbered 2 through 64 are a true, accurate and completed transcript of the proceedings in the October 22, 2020, Bureau of Land Management Red Devil Mine Remediation Proposed Plan, transcribed by me from a copy of the electronic sound recording to the best of my knowledge and ability.

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Date

Gloria Schein, Transcriptionist