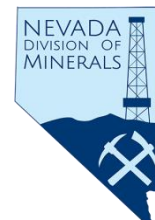


# **I. AGENDA**



**STEVE SISOLAK**  
Governor

STATE OF NEVADA  
COMMISSION ON MINERAL RESOURCES  
**DIVISION OF MINERALS**  
400 W. King Street, Suite 106  
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**MICHAEL VISHER**  
Administrator

**Las Vegas Office:** 375 E. Warm Springs Rd. #205, Las Vegas, NV 89119  
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**COMMISSION ON MINERAL RESOURCES**

Nevada Division of Minerals

Special Virtual meeting via Zoom

Join from a PC, Mac, iPad, iPhone or Android device: Please click this URL to join:

<https://us02web.zoom.us/j/9712825638>

Meeting ID: 971 282 5638

Pursuant to Governor Sisolak's Declaration of Emergency Directives 026 and 029, the requirement contained in NRS 241.023(1)(b) that there be a physical location is suspended in order to mitigate the possible exposure or transmission of COVID-19 (Coronavirus). Accordingly, anyone planning to participate in the meeting must participate by using the teleconference number.

Thursday, March 11, 2021

2:00 P.M.

**AGENDA**

**CALL TO ORDER**

The Agenda for this meeting of the Commission on Mineral Resources has been properly posted for this date and time in accordance with NRS requirement.

**ROLL CALL**

**COMMENTS BY THE GENERAL PUBLIC**

Pursuant to N.R.S. 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. Public comments may be limited to 5 minutes for each person.

**ACTION WILL NOT BE TAKEN**

**I. AGENDA**

A. Approval of the Agenda

**FOR POSSIBLE ACTION**

**II. MINUTES**

A. Approval of the January 14, 2021 meeting minutes.

**FOR POSSIBLE ACTION**

**III. NEW BUSINESS**

A. Fiscal 2021 Budget Forecast and 2022-2023 Biennial Budget Planning  
An update and overview of the current Fiscal 2021 budget forecast and impacts to the future biennial budget will be provided. Mike Visher

**FOR DISCUSSION ONLY**

B. NBMG Special Project

**FOR POSSIBLE ACTION**

The Commission will discuss and may approve one of two projects, previously proposed by the Nevada Bureau of Mines and Geology, in consideration for funding in Fiscal 2022. Material information for each project has been posted online along with this meeting's notice and agenda.

**COMMENTS BY THE GENERAL PUBLIC**

Pursuant to N.R.S. 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. All public comments will be limited to 5 minutes for each person.

**ACTION WILL NOT BE TAKEN**

**ADJOURNMENT**

**NOTICE TO PERSONS WITH DISABILITIES**

Members of the public who are disabled and require special accommodations or assistance at the meeting are requested to notify the Division of Minerals, 400 W. King Street, Suite 106, Carson City, NV 89703 or contact Sherrie Nuckolls at (775) 684-7043 or Email [SNuckolls@minerals.nv.gov](mailto:SNuckolls@minerals.nv.gov)

## **II. MINUTES**



**STEVE SISOLAK**  
Governor

STATE OF NEVADA  
COMMISSION ON MINERAL RESOURCES  
**DIVISION OF MINERALS**

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Thursday, January 14, 2021

1:00 P.M.

**MINUTES**

Commissioners	Staff	Public
Rich DeLong	Mike Visher	Jim Faulds, NBMG
Mary Korpi	Rob Ghiglieri	Jennifer Atlas, Griffin Company
Art Henderson	Sean Derby	Jordan Hosmer-Henner, Governor's Office
Josh Nordquist	Courtney Brailo	
Nigel Bain	Sherrie Nuckolls	
Bob Felder	Garrett Wake	
Randy Griffin	Lucia Patterson	
	Rebecca Ely	
	Anthony Walsh, DAG	

**CALL TO ORDER**

1:00 PM by Richard DeLong

**COMMENTS BY THE GENERAL PUBLIC**

None

**AGENDA**

A. Approval of the Agenda

**Motion to approve the agenda made by:** Bob Felder

**Seconded by:** Randy Griffin

**Unanimously approved**

**II. MINUTES**

A. Approval of the September 17, 2020 quarterly meeting minutes

**Motion to approve the September 17, 2020 minutes made by:** Josh Nordquist

**Seconded by:** Bob Felder

**Unanimously approved**

Approval of the November 16, 2020 special hearing meeting minutes

**Motion to approve the November 16, 2020 made by:** Nigel Bain

**Seconded by:** Josh Nordquist

**Unanimously approved**

**III. NEW BUSINESS**

A. **Nevada Bureau of Mines and Geology Project Updates**

Jim Faulds, Director and State Geologist gave the Commission an update on the Geothermal Database Special Report, Mineral Industry Report, and Exploration Survey. Jim also mentioned two important regional projects outside of the support of the Commission that tie into all of the projects and to the mission of the Division and the Bureau. One project is called GeoDAWN which stands for Geoscience Data Acquisition of Western Nevada and the other project is Earth MRI which stands for Earth Mapping Resources Initiative.

**Rich DeLong and Jim Faulds:** Discussion on the USGS headquarters being based in Reston Virginia leading to the probable conclusion why Virginia is ranked number seven for NBMG website hits.

**Rich DeLong:** What percent of capacity is the Gold Building at for storage at this point?

**Jim Faulds:** We are starting to fill up. We have been streamlining some of the collections up there and to really evaluate how much space we have left, we're probably about ¾ full right now. A couple of years ago I talked to the UNR administration that the Gold Building would eventually fill, and they were all ears except to say to come back to us when it's full.

**Rich DeLong:** My recollection is that the area behind the building is slated for where the expansion would be.

**Jim Faulds:** Correct, I believe the grading and all that had been done so it's prepared for near doubling the size of the gold building. It would be a significant investment but we would not be starting from scratch.

**Rich DeLong:** Does anyone else have any questions or comments regarding the work that's been completed or the ongoing work with the Bureau?

**Bob Felder and Jim Faulds:** Discussed the data solicitation for the 2020 mineral survey which went out to the exploration and mining companies in December.

**Nigel Bain and Jim Faulds:** Discussed how many visitors physically visit the Gold Building. Jim mentioned that they get very few right now, due to the pandemic, but prior to the pandemic they would get probably 5 to 10 per week. The number of visitors also depends on if you are talking about the physical collection of core and cuttings, which would be ~10 or less per week but if you also include access to some of the maps, mining district files, historic air photos, other things the gold building houses then it would probably be greater. NBMG does get some funding from the federal program called the National Geological and Geophysics Database program to digitize those types of collections.

**Nigel Bain:** Ok, it brings back, Mr. Chairman, the discussion of how do we put in place some kind of mandatory or more than just voluntary data collection of people's core.

**Jim Faulds:** NBMG had a huge contribution from of core cuttings from Ormat this past year. It kept NBMG very busy and there's other potential contributions from industry like that. The support from the Commission allows NBMG to react to those kinds of contributions when they occur. NBMG encourages core and cuttings contributions including a current conversation with Cyrq Energy about a possible contribution. Since the great recession most of the operations in the Gold Building have been self-funded and that's why the support from the Commission is so important to maintain those efforts.

**Nigel Bain:** Thanks.

## **B. New NBMG Special Project Proposals**

Jim Faulds went over a PowerPoint presentation pertaining to three proposed projects:

**Project 1:** Publish Geologic Map and Report of Railroad Valley, Nye County with a total cost of \$35,000.

**Project 2:** Publish Report on the 3D Stratigraphy, Structure, and Fluid Flow at the Soda Lake Geothermal Field, Fallon, Nevada with a cost of \$30,000.

**Project 3:** Publish General Interest Report on "Lithium in Nevada" with a cost of \$35,000.

**Randy Griffin:** Just a note on your last lithium report, it was just announced in mining.com that Albemarle's going to double their production there and invest around \$40,000,000 give or take a million, there at the Silver Peak operation. Also, I just had a presentation within our own group here at Lhoist and it's a very strong interest to the lime industry because the lithium production uses tremendous amounts of quicklime; we're talking on the order of hundreds of thousands of tons, so we as a company, and I'm sure all of the other lime producers in the world, are keeping a very close eye on the lithium industry. We had an internal presentation on it from our mining experts in Belgium and lithium has already exploded but the graph they put up was unbelievable how it looks like a rocket going straight up regarding the lithium production in the world. I just wanted to make a comment because it was recent to my experience here.

**Jim Faulds:** Very good, thank you.

**Art Henderson:** Mike, do we choose two of the three?

**Mike Visser:** No, for this one we are looking to choose one special project per our existing contract that we will be writing with the Bureau. We are budgeted for the same amount as before, \$90,000 a year, so right now we're picking one project. Jim did offer to see if a second project could be chosen, however, at this time our financial picture is not sufficiently known to do something like that. Right now, the Commission is going to try and decide one of these three.

**Rich DeLong:** And we could revisit another one at the next meeting because we'll have more clarity on the budget, is that correct Mike?

**Mike Visser:** That's correct.

**Rich DeLong:** Any other thoughts from any Commissioners? I have a comment on all three, I think they're all good projects but for different reasons. I thought it was interesting on the Railroad Valley one that we've got potential loss of a data source in the near term because those two individuals retiring. That puts some urgency on that one from the concept in trying to capture and maintain that data. The geothermal one, I also thought was a good one because it would get out to the public and potential other explorers how the Soda Lakes system exists, what's the model, what's the data look like for it. I think the lithium one is an interesting one in that you're thinking of doing it for the general science reader. I also think it could be used with the Legislature to help them understand how important Nevada is to US domestic lithium supply which might give them pause on trying to limit the economic viability of mining in the state through there potential changes to the constitution. They all have interesting aspects that make them all valuable projects.

**Jim Faulds:** Yes, I agree, I've thought about this as well and I see all of the things that you're pointing out. In particular, Railroad Valley, how many more years will we have this opportunity from those individuals to put something like that together? We all know lithium, it's very timely to get that report out. The geothermal, the kind of detailed work Holly McLachlan did on Soda Lake would be, I think, very valuable for the geothermal industry to have. We could package that up into a peer reviewed paper, but I think the beauty of that project is all of the detail on the logs and the multiple different cross sections and so on, where Holly really dissected that system and that's not going to come out in a ten-page peer reviewed paper.

**Nigel Bain:** Do we have a conflict of interest because Josh will be voting, not trying to pick on Josh or his company, but is there an ethical issue on the geothermal one?

**Josh Nordquist:** Just to be clear my company does not own that geothermal project.

**Anthony Walsh:** To that extent I don't think there is a conflict, simply because that would be a business interest that would either have to be disclosed or identified by those who would be impacted by that vote and would involve abstention and disclosure. But if your company is not related to that proposal in any way, I don't see that as a conflict.

**Nigel Bain:** Thanks.

**Rich DeLong:** Art, do you have any thoughts?

**Art Henderson:** Yes, I do. Of course, oil and gas is a very good project because it puts into the archives a great amount of history and tremendous amount of work that's been over decades. That is why I was hoping we could do at least two. I think that oil and gas is probably the poorest industry now so there is no chance to get any help for these reports. I was just thinking lithium you can put \$40,000,000 and double your project or you have other geothermal, maybe there's other sources of funding if we cannot do all three proposals. I do not know where we stand on asking some other people to pitch in on some of these. I agree all three proposals are good, these are probably the best ones we have had in a long time. It's a shame we can only pick one, and hopefully next meeting we can pick a second one at least. It's hard to choose to be honest, you can have historical data that's lost forever or you can go with the trends on geothermal and lithium which are hot industries now.

**Rich DeLong:** Any thoughts from you Josh?

**Josh Nordquist:** I kind of feel like the lithium project is, in my mind, the most relevant today. Just with not only the activity in the state, as well as the potential impact for Legislature approach. I guess in the end this would not be completed before the Legislature session. My gut feel is that one's the most relevant, again my industry interest aside geothermal is growing fast but the growth is not at Soda Lake, it's at different parts of the state.

**Rich DeLong:** That's a good point.

**Jim Faulds:** We envisioned Soda Lake as being an analog to some other systems. I like all three projects myself and it was hard for me to prioritize them and so I did not on purpose. All of these projects from our perspective, are very valuable and I personally rate them all equally.

**Rich DeLong:** Mary, do you have any thoughts?

**Mary Korpi:** It's tough, I guess I bounce between the first one and the third one, but we've been having a lot of calls with Legislators through the Women's Mining Coalition and we've talked lithium and we've talked to about many of the minerals that are needed for renewables and trying to get that message across and that this could definitely impact any of those projects that are being looked at very closely right now. I think there's true value in it and I agree that we won't have this information before the end of the Legislature, but this isn't going to go away as far as their concerns are. The economics in the state are going to take a long time to get turned around. My preference would be the third one related to the lithium, just because it is so critical now. We're hearing that from the Legislators and so many of them don't quite understand and they don't have the connection, so the more information we have going forward from a state economic standpoint.

**Jim Faulds:** We anticipate each of these projects to take roughly a year so the deliverable day would be June 30, 2022.

**Bob Felder:** Question about the oil and gas project, one of the key concerns is losing this data for history and not archiving it but could that data be donated to the Bureau and then archived? In a timeframe and schedule that fits our timing and budget rather than having it be a special project this year. That way it's not lost but it doesn't have to be done this year.

**Jim Faulds:** That's a really good point in terms of the actual data but of course those who have generated, touched, interpreted, and synthesized those data are the best folks to put that all together into some kind of report. So I think, yes that might be the case at least for some of the data but in terms of the context that could be a problem. A little bit of background on that, Don French did seek some industry support for this and so far, he has struck out but we all know not to mention it's a bad time of getting any support from the oil and gas industry. I'm not familiar, I have to admit, with all of the data sets but I'm not sure, I have a feeling it's easier for Don to release some of these data through something like this report than it is to just give it to the Bureau.

**Bob Felder:** That makes sense.

**Art Henderson:** I think we asked this last time, if you have more than one project are you able to do it with in the one year period?

**Jim Faulds:** Yes, in this case I can even more confidently say that because I'm not actually leading one of the projects. I was leading the geothermal project and basically with everything that's happened in the last year, some of the good for the Bureau, lots of projects and so on, some of it just trying to manage things through the pandemic that was the main problem with the delay of that geothermal project. In this case I will be helping with one of the projects, the Soda Lake project but I'm not the key person in that project, it's mainly Holly with help from Dick Benoit. I'm not involved except to oversee and make sure they get done; I'm not involved in either of the other two projects.

**Bob Felder:** On the lithium project, with Lisa Stillings as the principle scientist, is there any chance that USGS partially funding that project?

**Jim Faulds:** That's a good question that could maybe be further explored. We are getting funding right now through the Earth MRI program to do some geologic mapping in the Clayton Valley and Rhyolite Ridge area, using USGS funding. We haven't explored or hadn't thought of using USGS monies and I suppose that is possible. I don't know what USGS budgets are like but whether there is a little extra money hanging around in the Earth MRI program or something. I'm thinking out loud, maybe that becomes a USGS publication, and that's okay the important thing is to get that out.

**Rich DeLong:** You had mentioned that you thought if the lithium report was selected you'd have it completed and out the door by June 2022?

**Jim Faulds:** Yes.

**Rich DeLong:** So, what I'm thinking of for everyone else's benefit is if the Legislature in this session passes any one of those joint resolutions in the same language that was up for the special session last summer, it would then go on the ballot, I believe in November 2022, for the citizens to vote on. So having that report available might be useful in whatever a communication with the citizens occurs with regards to that issue, even though it wouldn't be available for the Legislature I can still see it being useful depending on what the Legislation does in the next few months.

**Randy Griffin:** Albemarle is on the Board of Directors, or he used to be, for the Nevada Mining Association, I think someone mentioned reaching out to Albemarle for a contribution, you would think since they're going to be directly affected especially with the \$40,000,000 investment somebody said earlier if the Legislature does something. Mike, if we do select the lithium project, I'm in favor of it because I think it's the hottest issue in and certainly two people putting a lot of money into Nevada right now with Lithium Americas and of course Loneer. Reaching out to Albemarle to



see if they could throw a few thousand dollars to Jim but go through Tyre and ask him who the contact is now but that's my idea in trying to generate some more money. There would be a self-interest for Albemarle there that's for sure.

**Mike Visher:** Randy, one of the challenges with Albemarle, is they have had a pretty clear view of disdain for competition in the state. Any report to help highlight where additional resources were, they might see it as aiding some of their competition. When we went through the development of the dissolved mineral resource exploration regulations and the statutes that were created in the Legislature, they were very much opposed to any change from the status quo that would facilitate additional lithium brine exploration in the state. I'm not sure they would be amenable to this unless it was restricted to hard rock.

**Art Henderson:** I think it would be better to ask someone like Tesla.

**Mike Visher:** Yes. One other thing for consideration regards to the Railroad Valley study is that coincident in that basin is a considerable exploration project for lithium brine as well as lithium in some of the clays in the basin. 3PL has a large claim block there, they spent quite a bit of money, they now have a water right in that basin. They're looking to move forward. The Center for Biological Diversity today announced a lawsuit against the BLM for the oil leases in Railroad Valley failing to take into account the Railroad Valley Spring Fish that lives in the hot springs and the potential impacts from oil drilling and fracking in the valley. Water Resources is aware of this issue and it came up last year with regards to water rights and the impacts to the springs there. I think Railroad Valley does have a bit of a nexus with oil, geothermal, and lithium interest all there in that valley and yet we really don't have a lot of synthesized subsurface picture of what that actually looks like. That's in the heads of some of the few petroleum geologists that have looked at it and I agree there is a sense of urgency to extract that knowledge before it has a chance to be lost. I just wanted to bring up some of those things in case some weren't aware of the additional interests in the valley.

**Rich DeLong:** To me, the one that is the most urgent from a perspective of data storage is the Railroad Valley one, I would tend to support that one as the one we pick first this year knowing that we have the potential to pick another one later on this year.

**Art Henderson:** Rich is this something we can delay until the end of the meeting after we look at the financials or are you 100% sure we don't have the money for two projects at this moment?

**Rich DeLong:** I don't have a problem delaying this decision until further on the agenda.

**Mike Visher:** Yes, we do not have sufficient information for me to present a clear picture of our financials and that's simply because 12 of the counties provide the mining claim fees to us on a quarterly basis, so we are now just getting those for the final quarter of the calendar year. We won't have all of those in hand to see what our revenue stream looks like until later, maybe mid-February. Currently for our year to date for exactly a year ago to where we are now, we are down 8.5% on our mining claim revenue. So that is the cause for concern on taking on something else right now until we actually see what's coming and also whether or not we see any clarity with regards to where the Legislature's headed and potential future impacts to the mining industry and mining claims.

**Josh Nordquist:** Would it be more relevant for us to hold this decision until the next meeting or Jim, what would be the impact on your end if we do that?

**Jim Faulds:** The next meeting would be in May?

**Mike Visher:** That's for the Commission to decide, typically it's been in May but it isn't a requirement just that we have to have one at least every four months.

**Jim Faulds:** Okay, I think for two out of the three projects that could be a problem. Those two would be the Railroad Valley and the Lithium project where I think folks need to know sooner than later whether they're in the queue or not. I think the Soda Lake project, it is mainly Holly and Dick Benoit and a little bit of myself, so that particular project probably doesn't matter too much whether we know now or in May. The other two, I know in talking to folks and in order to be lined up to complete those projects in a year, I think it would be important to know sooner than later. I think May would be possibly too late.

**Mike Visher:** So something else to consider is this project is a special project is in the next biennium for which we don't yet have a contract, we would be developing the contract once we establish this forth project so that we have the deliverables lined out and secondly if you would like to have a special meeting of the Commission in a couple months to consider the financials as well as an additional project, you could do that as well.

**Rich DeLong:** When do you think you'll have the clearer financial picture at least from the revenue side, putting aside the Legislative issues?

**Mike Visher:** Mid-February.

**Art Henderson:** I understand Josh's comments but I really don't see a reason to delay starting one of the projects now so if you wouldn't mind me to make a motion that we go ahead and approve the lithium project but strongly consider the other projects upon review of the financials as soon as they're out and also to solicit some funds from industry.

**Josh Nordquist:** I would second that motion for the record.

**Rich DeLong:** We have a motion and a second to approve the Lithium proposal from Jim Faulds, any additional discussion on that?

**Randy Griffin:** Whoever said to reach out to Tesla, I think that's a very good idea. I don't know if they'd have any money, everybody's revenue is down, but Greymont and my company, Lhoist, certainly have some interest vested in developing more lithium out here simply from a demand point of view. Somebody could ask them to see if they could come up with any money.

**Jim Faulds:** If I could interject, any suggestions on who might be the best contact to reach out to them? Would that be the Division do you think or what might have the biggest impact in terms of reaching out? The Division, the Bureau, the Commission?

**Randy Griffin:** Well, I don't mind asking my company, I certainly can't ask Greymont because I'm still working for Lhoist. If Tyre Gray is amicable to it, it might be good to have Tyre do it for the Nevada Mining Association because everybody's on the board there, Lhoist and Graymont, but I don't know if that's appropriate or not, maybe Mike could voice his opinion on that.

**Jim Faulds:** One thing I think I will do is talk to the folk's in the Earth MRI program at USGS to see whether something's possible there.

**Mike Visser:** Jim, in the past have you received money and support of specific projects at the Bureau from the Mining Association?

**Jim Faulds:** Not to my knowledge, at least not in the past eight or nine years when I've been knowledgeable of all of those things. Whether something happened with some support perhaps during Jon Price's tenure, I'm not 100% sure but I don't think so.

**Art Henderson:** May I ask Anthony a question? Anthony is there any restriction for Commissioners to talk to industry about any potential funding for these projects?

**Anthony Walsh:** Off the top of my head, I do not believe so however I think the safest route to go is maybe have that as an agenda item and it would resolve to request funding from industry. I think that might be safer put as an agenda item and we can be addressing that at a special meeting that may come up between now and May or on the current timeline for May as well. I think that may be a little safer route and recommend that I try to do a bit of research in the interim to see if that's something the Commission can move forward with.

**Art Henderson:** Yes, if you could get back to Rich or Mike and let me know I'd be happy to talk to industry.

**Anthony Walsh:** Definitely, and I think we can go forward with that as a safer route to do as an agenda item and can be publically open for discussion, as well as, to the extent that that's not part of one of these specific project proposals. I would recommend just making discussions only related to the proposals today. Then a request for additional funding maybe from industry would be a later step, I'll come back with an answer on that.

**Art Henderson:** I'll modify the motion to approve the Lithium project and to consider other projects and funding at another meeting.

**Nigel Bain:** If we could modify the motion a little bit. I think if Jim or the Commissioners gave this presentation on those three projects to the Mining Association that might be a better way of doing it. Mary hasn't said anything, but all the Commissioners have a connection of sorts with either Lhoist or one of the lime producers in the state. I would like to modify the motion to select the lithium project but also go ahead with the interim meeting at some point if we need to the end of February or early March. Also give the presentation to the board of the Nevada Mining Association to see if we can get any interest from them. The Mining Association being a more diverse group instead of just gold people certainly adds more power to their discussion with Legislature and ultimately for the ballot measure that will be coming.

**Randy Griffin:** Tesla, if I remember right, didn't they lease or purchase 10,000 acres because of a possible lithium deposit up there in Northern Nevada? Does that ring a bell to anyone?

**Mary Korpi:** I think Elon Musk has gone on the record that Tesla would be a producer of lithium so it would be their own source of supply. I remember reading that somewhere that he's been promoting that aspect of it too.

**Randy Griffin:** Yes, and I think he did something, now whether it's legally binding or puts some money down, I don't know but 10,000 acres is kind of sitting in my memory that he's done something up there.

**Rich DeLong:** Art, you made a motion, Nigel requested it to be modified and the only modification he said was to have a special meeting end of February or early March, otherwise I think what Nigel said was the same as what you said, are you in agreement with that?

**Art Henderson:** Yes, I'm in agreement with that. The important thing now is to get Jim busy with one of the three projects and I think lithium is the best one.

**Motion to approve the Publish General Interest Report on "Lithium in Nevada" with a cost of \$35,000 made by:** Art Henderson

**Seconded by:** Josh Nordquist

**Unanimously approved**

**Rich DeLong:** Thank you Jim, appreciate your time, thoughts and discussion and we'll expect to see you late February or early March.

**Jim Faulds:** Okay, very good, thanks everyone, appreciate the support. I'll proceed in letting folks know about this decision and maybe something is possible for the other two projects.

**C. New "Stay Out, Stay Alive" public safety AML video**

Sean Derby provided a PowerPoint presentation regarding details of the THS Visuals contract, which ran just over a year at a cost of \$40,000. Areas of Nevada were picked that were target-rich for AML and deliverables included a 30 second Public Service Announcement, 5.5 minute classroom presentation, 9.5 minute full-length video, which is currently up on NDOM's YouTube channel; 17 high resolution photos and a number of low resolution photos of production. Plans to use this information are with local media PSA and follow up, billboards, partner agency web presence, YouTube and Facebook paid advertising, web and brochure presence at rural Chamber of Commerce and outdoor retail establishments along with school visits and public presentations as communicable disease policy allows. Sean recognized Garrett Wake as he worked a lot with THS Visual, who did the film production, during this process. Actors in the video were AML staff, including interns, Storey County Search and Rescue and EPS staff.

Sean shared a link to the video, [www.youtube.com/watch?v=524kW3jG5-8](https://www.youtube.com/watch?v=524kW3jG5-8) in the comments section as there were technical difficulties with playing the video through Zoom.

**Josh Nordquist:** Very well done production, very impactful; my compliments to you, your team, and Todd Simon for putting it together.

**Rich DeLong:** I thought the video was very well done.

**Rob Ghiglieri:** Just to add one more thing, we want to thank Comstock Mining for their participation with most of the underground scenes that were done on private property owned by Comstock Mining. The little girl in the video was Christine Remington, the News Channel 2 anchor's, daughter which is helping us going forward with a news article with News Channel 2 as well. A lot of work was put into this by Garrett, thank you very much for all that he did. I think it turned out well; a little bit of an update from the 1989 video.

**D. New LVNHM Rock and Minerals Exhibit**

Garrett Wake went over a PowerPoint presentation showing the final details of the completed exhibit which was delivered and installed on January 7, 2021 with a cost of \$49,500. Garrett also shared a video of the actual exhibit with all of the activities. The Las Vegas Natural History Museum was very pleased with the completed exhibit.

**Rich DeLong:** I think that turned out so well, it looks really good. Do you think they would do it again for the same price?

**Garrett Wake:** Yes, absolutely. I've already talked to 3Saurus, the contractor that did it, he went through a tough time during COVID-19, and he had to lay people off, his family had less income coming in. I'm just blown away with the content that he was able to put into this exhibit for the amount of money that was provided. He did say that since all of the planning is done he could do it again for the same price.

**Rich DeLong:** I just see that as an opportunity, something of this quality in other locations, particularly other more urban parts of the state could be really useful.

**Josh Nordquist:** We haven't done a lot of updates to the Discovery in Reno in the last few years.

**Rich DeLong:** Yes, depending on how the budget goes, this might be a good addition.

**Garrett Wake:** And now that's it completed and we can show that it's worked and be done and what is produced for that amount and museums may even be able to find funding to help out in that regards as well, it's not just a concept, it's been done.

**Rich DeLong:** Yes, I can definitely see trying to get something like this in the Reno area or other locations in Las Vegas given how big Las Vegas is that would be good bang for the bucks, something to think about.

**Mary Korpi:** When we get to travel again as a Commission it would be great to go back and see it firsthand.

**Garrett Wake:** I'm sure the museum will let you in for free to see the exhibit, I know many of you have been to the museum, but this really blows the room itself away. The geology room before was very lacking, there was a very old mineral use and society area in there but really for the entire museum this is going to be the focus of the museum for a while.

**Rich DeLong:** That's great.

**Mike Visher:** Garrett, is the museum going to be pitching this new exhibit in anyway?

**Garrett Wake:** Yes, and I plan on helping out with it too, they invited me to go next week to do a Facebook live event something called "ologists" day every year, a geologist or a biologist any kind of "ologist" will come talk to them, so I'm going to be plugging it then but I'm also planning on doing a short interview with the contractor and the exhibit and maybe showing it and putting it on our YouTube channel and working with them on publicizing it as well.

**Mike Visher:** Great.

**Rich DeLong:** Thanks again Garrett.

**Garrett Wake:** Thank you.

#### **E. CMR letter to the Governor and Legislature**

Mike Visher stated that at the last meeting the Commission requested a letter be drafted for review at this meeting and wanted to get it out before the Legislative session started on February 1. I drafted the letter and sent it to the Chairman for review; it went back and forth a couple of times before it ended up as this version in your packet. I did run it by the Governor's Senior Policy Director Scott Gilles who I report to. I gave him a heads up on it and he made sure I included both the Senate Majority and Minority Leaders, as well as those on the Assembly side to make sure everybody was appropriately noted on the letter. I have those correct and the only thing that's lacking, whatever comments or edits you want to make, it's open for discussion here, but the closing sentence I don't want that to be the only thing. Under our statute the Commission's duties are to advise and make recommendations. A lot of the letter's content really is the advice that these are bad ideas, but we need to close with what the Commission thinks is an appropriate recommendation understanding that the mining industry is going to be looking at increased taxes of some sort or payments in other kind to help with the shortfall in the state's budget. There's going to be an increase on the revenue side to the state in some shape or fashion in addition to the pre-payment that they already agreed to, and those discussions are being had largely between the Legislature and the Mining Association. I don't know whether certain companies specifically are involved with those discussions as I'm not part of those discussions. Those discussions are taking place and I expect that they will continue to take place in earnest as the Legislative session starts February 1, so with that, I'll leave it open for discussion.

**Mary Korpi:** I had mentioned earlier that the Women's Mining Coalition is meeting with any and every Legislator that will commit to that and the response has been very good, I haven't sat on all of them, but it's been both parties. They're all stressing about there's got to be a solution so your comment Mike about having that at the end because they're looking for input. It is pretty evident that there are those you could say who are not supportive of the industry. I think if the industry can come forward with something that will ease the pain that they're dealing with that is bar none what we heard, especially on the democratic side but also on the republicans. I think your comment is spot on, the issues going to be we don't want to be countered by the industry but we have something to add there from the Commission standpoint related to the economics.

**Mike Visher:** I think for the recommendation I was expecting something more of the pathways towards finding a solution rather than putting forth an alternative. I think it's such a dynamic process that you really just have to be part of that discussion. I think some boundaries on how you move forward, some general recommendations on the best way forward would be to be inclusive of those at the table. Being part of an industry that is looking to be taxed or trying to

provide additional streams of revenue, understand that these 3 joint resolutions were largely done without any input from the industry, the solution needs to include a discussion with the industry.

**Randy Griffin:** Mike, have you talked at all with Tyre at the Nevada Mining Association? What are they recommending, obvious the states in tough shape, are they offering to do something other than something that's already been passed? Have they offered alternatives? Are we comparing notes with them?

**Mike Visser:** So, I'm not privy to the exact discussions that they're having but they are having discussions, they are looking at alternatives to these three joint resolutions so that none of these make it through the session, that's their goal. They are having discussions on how to increase revenue to the state that limits the impact to the industry, that's the goal. The state needs more money, how can you do it and still have a sustainable mining industry in the state. So they're leading that charge, Randy.

**Randy Griffin:** You're asking for recommendations in the letter, we offer some alternatives be proposed here?

**Mike Visser:** No, I'm not recommending an alternative; I'm looking for something from the Commission that provides some sort of guidance on how to move forward to the Legislature and the Governor outside of these three joint resolutions. The letter is pretty clear on these, they're all bad, but what's a pathway forward without getting into the details what those are because I think the details have still to be born out. There are so many moving parts to the mining industry and the state's tax policy that some of it we understand some of it we don't have a roll in. It takes those that are involved in generating the revenue and paying the taxes to be part of any of the discussion on how to increase revenue to the state. I'm not specifically looking for something from the Commission today to add to the letter that says we propose to do this, this and this. I think it's more, what are the viable pathways that the Legislature and the Governor could pursue if they're looking to increase revenue to the state from the mining industry without getting into specifics.

**Rich DeLong:** Obviously we think a constitutional change is not the right way particularly in the form that has been presented from the special session which means it's a Legislative solution within the constitutional boundaries but we could suggest that the recommended approach would be to have discussions with the Governor's office, the Legislature and the Commission such as each facet of the industry is considered with regards to ways to increase revenue without harming the viability of the industry.

**Josh Nordquist:** This reminds me of some steps taken a few years ago when the RPS was brought up for energy in the state and the Governor at the time set up a task force basically with both industry and government representative to kind of work through and make a recommendation, maybe a task force approach is another idea.

**Rich DeLong:** I like that idea Josh, I think the offer that the Commission is willing to participate at whatever level the Governor and the Legislature deem appropriate.

**Nigel Bain:** I agree with both what Josh and Rich are saying but I would also say that we've got to get some communication with the Mining Association. I know from a personal connection that there's been some pretty harsh meetings between Nevada Gold and the Governor's office. The dynamics have changed instead of two companies now it's just one. I don't know, Mary, if you've had any communication there with the Mining Association but I would say exactly what Rich and Josh just said somehow, we've got to get the Mining Association be aligned with what the Legislature and the Governor got to do. The tax situation is pretty shocking.

**Rich DeLong:** I will say this based on what I've seen happen in the past with the Mining Association, is I do worry that in a vacuum the Mining Association will make decisions with regards to taxes that benefit the mining side of the industry to the detriment of the exploration side of the industry and I don't know any other way to say it but they've done it before and I wouldn't be surprised if they do it again.

**Nigel Bain:** I don't disagree with you Rich and I worked for one of the entities that always seem to come up with a solution that threw Bob's group under the bus. I know there's been some really harsh meetings I gather where the Governor pretty much told Nevada Gold Mines this is what we expect. I also worked for the juniors and Jerit Canyon for instance and even Hycroft I doubt if they could handle a gross royalty it will put some of those smaller lower grade properties out of business. Somehow if we send a letter, we've got to kind of rope the Mining Association to be at the table but also exactly like you said Rich, be a little mindful that the table includes explorers and suppliers. It was Mark Amodei's time that we got a lot more suppliers to the association then lo and behold my employer threw all the explorers under the bus on the claim fees. Somehow, we've got to get them both sitting at the table and understand that what's good for Nevada Gold may not work out for Hycroft or Jeritt Canyon or even Kinross at Bald Mountain.

**Rich DeLong:** Or Corvus or Highland Gold or any of the junior companies that are finding ounces. My opinion is that roping the Mining Association in on the discussion is not something we put in the letter, that's something we do off line relative to the letter.

**Nigel Bain:** I agree. One of the things that hit me when I was in Winnemucca it was almost impossible to hire a highly skilled engineer. If the wife ever looked up what the graduation rate at Humboldt School District was, the wife immediately said "hey I'm not living there". In fact, Turquoise Ridge had employees that one of our biggest employment areas was actually from Sacramento to Truckee and not one of those guys would ever consider moving to Winnemucca because of that education system. I told the teachers that one time in a heated long meeting and they were shocked. My point is it made a big impact on all the people involved in mining, a commitment actually both Newmont and Barrick stood up for (garbled) non high school graduates. Rich, do you or Mary have a line of communication to Tyre?

**Rich DeLong:** I do, I speak with Tyre probably on a quarterly basis. I have not spoken with him since the election, but I do have a channel to talk to him.

**Josh Nordquist:** I think circling back to Mike's question it certainly seems, from everyone's comments, that the message in this letter is predominantly listen to the industry, make sure we're bringing all aspects of the industry to the table. Is it appropriate to provide a member list, remind the Governor through the companies that we are aware of that are involved in this letter. A list of as many mining industry participants as possible. If we want to work through the letter maybe we should start and maybe going through on a paragraph basis or something.

**Rich DeLong:** That's a good idea Josh. Just before we start that there's one other item in addition to Mike's comment about wanting to expand the closing part of the letter there's also who should sign this? Mike and I discussed this, should it just be the Chairman, or should we have all the Commissioners sign?

**Art Henderson:** All of the Commissioners.

**Bob Felder:** Yes, I think all.

**The Entire Commission and Mike Visser:** The Commission reviewed the draft letter, paragraph by paragraph, and Mike Visser made edits and additions as requested by the Commission.

**Rich DeLong:** Any further edits on the text that we just went through? I think I heard from several Commissions and general agreement that this would be signed by all the Commissioners.

**Art Henderson:** I think all Commissioners should sign it but if some don't want to sign it I think that's okay too.

**Rich DeLong:** I agree with you, all Commissioners that want to sign it should be able to sign it. Should the tag closing line be "respectfully submitted" and then list everyone's name with their signature above it?

**Bob Felder:** Yes

**Mike Visser:** Okay.

**Rich DeLong:** Assuming there is a motion and a second and it's approved to send this letter out, are there any Commissioners that do not want their name on the letter? (no response)

Okay, I think we've gone through the letter, we've agreed on edits so the Chair would entertain a motion if anyone's interested in providing one.

**Motion to approve the CMR letter to the Governor and Legislature with edits made by:** Nigel Bain

**Seconded by:** Randy Griffin

**Unanimously approved**

#### **IV. OLD BUSINESS**

##### **A. Update of FY21 AML Enhancements**

Rob Ghiglieri provided a PowerPoint on the budget enhancements which included UTV, ESRI and three contracts that were approved on July 9, 2020 which were: Clark County Revisit RFP, Cultural Survey RFP, and Geological Analysis RFP. There is one other contract that hasn't been approved by the Commission, and Rob wanted to bring it to their attention. The Army Corps of Engineer has funded funding the development of our SOSA (Stay Out Stay Alive) database since 2014. Currently that contract is set to expire in June 2021. There has not been a notification of additional funding from the Army Corps. Rob is drafting a letter to be sent out tomorrow thanking them for everything that they have done, how

effective their funding has been, and that it's not just the Division of Minerals using the database, it's used by all the AML partners: Bureau of Land Management, Forest Service. Department of Wildlife, NDEP and others. When it comes to physical safety AML, NDOM is the gatekeeper for that. It has been a very effective database and we're very happy with it, but Rob is also going to reach out to see if there's any additional funding to be put towards the database because there's a lot more NDOM can do to make it more efficient.

**B. Recent Reclamation Bond Pool Activity**

Rob Ghiglieri went over a PowerPoint presentation regarding the Notice Level and Plan Level bonds, FY12-FY21 Bond Pool Activity, notice-level forfeiture with the Nevada Gold Holdings Inc.'s Tempo Project and a plan-level forfeiture with Western Mine Development's Manhattan Mill (Nye County).

**COMMISSION BUSINESS**

**A. Review of staff monthly activity reports**

Mike Visser stated he provides an Executive Summary to the Commission but that the staff prepares monthly activities and only some of that information is pulled for the executive summary. He is trying to provide a better representation of what the staff actually does, month by month, so the Commission has the opportunity to review and see what everyone's doing. Maybe there is something that piques the Commission's interest that is not part of the executive summary, they now have the opportunity to ask questions of the staff or Mike.

**Art Henderson:** I saw some really excellent things today, the staff of NDOM, I just want to reiterate I think that today demonstrated some of their very best work I've seen in my 8 years on the Commission, I would just like to give kudos to all the staff.

**Mike Visser:** Thanks Art, you got to see today the combination of a lot of work that just kind of coalesced at the end of the year, but you're right, it's taken a lot of teamwork, perseverance, adaptation and flexibility, especially over the last year to get these things done. The products that were put forward are exemplary and speak to everybody's efforts and the tenacity and knowledge to get these things done. I think it reflects really well on the Division and the Commission.

**Rich DeLong:** I would echo what Art said, it's been amazing what's actually happened in 2020, what the Division has gotten done. And I think you've pointed this out before, Mike, the minimal amount of administrative leave time that's occurred, the non-task-oriented time has been kept to a minimum, which I think is wonderful given the difficulties with trying to conduct business remotely.

**Mike Visser:** Yes, we've been very fortunate that we've had not used much administrative leave, it's there but everyone has taken this pandemic very seriously and has been very self-responsible about making sure they have enough tasks in front of them so they can function from home. I keep tabs on them, and I am sure they don't like having to tell me what they did every day, but it helps so that I know what everybody's doing and so they're also being appreciated for what they're accomplishing.

**Randy Griffin:** I would agree with everything that has been said in my short time here, one thing, Mike, are you still under the one day off a month of no pay?

**Mike Visser:** Yes, we started the furloughs this calendar year, they're in effect through June, we'll find out through the Legislative session whether they're going to continue into the next fiscal year or not. It's one day a month and we're scheduling that to try and minimize the impacts in the offices and make sure that we still have coverage at the office as well as with the various programs.

**Randy Griffin:** Thank you Mike.

- B. Next Commission Meeting will be Thursday, May 13, 2021 at 1:00 p.m. with the location to be determined and a special meeting will be Thursday, March 11, 2021 at 2:00 p.m. via Zoom conference call.**

**COMMENTS BY THE GENERAL PUBLIC**

**Rich DeLong:** I would like to inform the commission that I am not planning on applying for another four-year term when my current term ends at the end of this fiscal year, June 2021.

**ADJOURNMENT**

4:40 p.m.

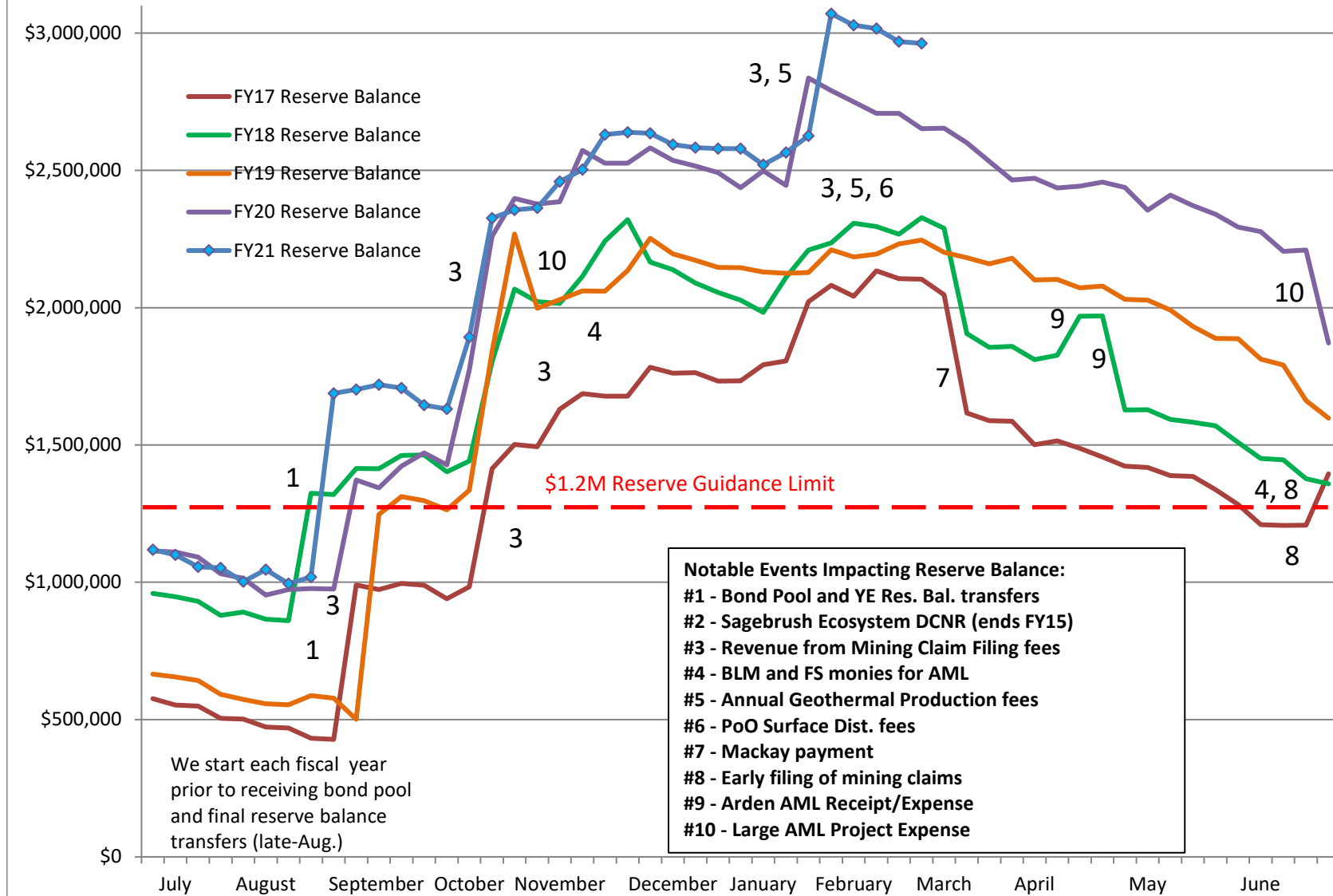
### **III. NEW BUSINESS**



### **III. A Fiscal 2021 Budget Forecast and 2022-2023 Biennial Budget Planning**

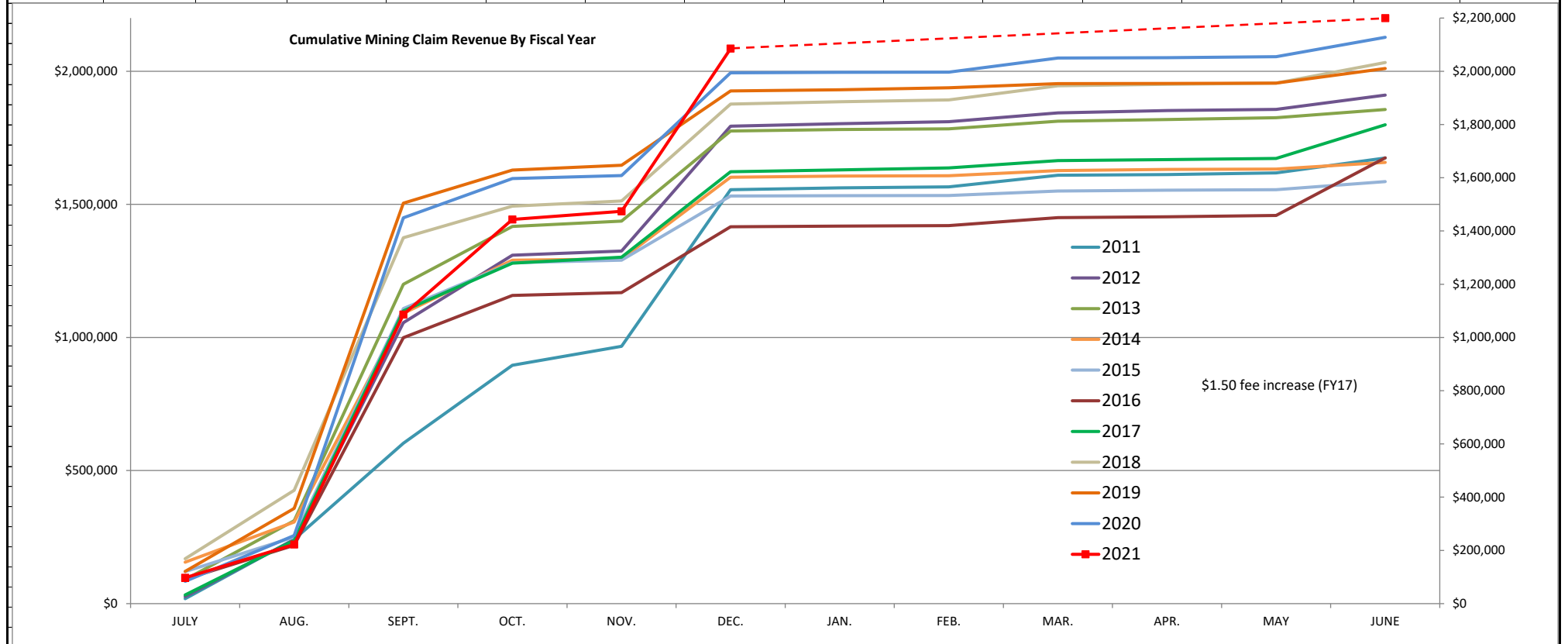
## NDOM Reserve Balance by Week for FY17 - FY21

(as of 2/28/2021)



**Fiscal Year Cumulative Mining Claim Revenue By Month**

Fiscal Year	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	\$ YOY	Total Claim Filings	Claim Filings YOY
2021	\$97,190	\$222,510	\$1,085,820	\$1,443,520	\$1,474,160	\$2,085,310						\$2,200,000	4.6%		
2020	\$83,720	\$256,070	\$1,449,660	\$1,596,760	\$1,608,370	\$1,994,430	\$1,996,180	\$1,996,910	\$2,049,870	\$2,051,030	\$2,054,580	\$2,127,730	5.5%	212,773	5.8%
2019	\$121,080	\$357,900	\$1,504,660	\$1,628,710	\$1,646,750	\$1,926,020	\$1,930,460	\$1,937,910	\$1,953,500	\$1,954,140	\$1,955,820	\$2,010,510	-1.1%	201,051	-1.1%
2018	\$168,630	\$425,870	\$1,374,840	\$1,493,090	\$1,512,540	\$1,876,580	\$1,885,390	\$1,892,210	\$1,945,520	\$1,951,080	\$1,955,670	\$2,032,980	13.0%	203,298	13.0%
2017	\$32,650	\$236,939	\$1,099,584	\$1,278,775	\$1,301,335	\$1,622,635	\$1,629,225	\$1,636,885	\$1,664,685	\$1,668,165	\$1,672,765	\$1,799,065	7.4%	179,935	-8.7%
2016	\$92,072	\$219,020	\$999,082	\$1,158,219	\$1,168,827	\$1,415,769	\$1,418,574	\$1,420,520	\$1,450,134	\$1,453,118	\$1,458,388	\$1,674,866	5.6%	197,043	5.6%
2015	\$120,352	\$250,079	\$1,108,417	\$1,280,687	\$1,290,241	\$1,531,683	\$1,532,431	\$1,533,349	\$1,550,247	\$1,553,571	\$1,555,211	\$1,585,539	-4.4%	186,534	-4.4%
2014	\$155,703	\$306,646	\$1,090,754	\$1,290,496	\$1,294,661	\$1,602,233	\$1,606,177	\$1,607,656	\$1,627,283	\$1,631,235	\$1,632,417	\$1,657,789	-10.7%	195,034	-10.7%
2013	\$90,253	\$311,806	\$1,199,622	\$1,417,171	\$1,437,104	\$1,775,803	\$1,781,575	\$1,783,870	\$1,812,217	\$1,818,745	\$1,825,571	\$1,856,460	-2.8%	218,407	-2.8%
2012	\$26,248	\$239,904	\$1,055,539	\$1,309,017	\$1,324,445	\$1,793,687	\$1,802,901	\$1,810,432	\$1,843,795	\$1,852,541	\$1,857,012	\$1,910,562	14.1%	224,772	14.1%
2011	\$18,504	\$241,374	\$602,803	\$895,475	\$966,603	\$1,554,871	\$1,562,053	\$1,565,649	\$1,609,424	\$1,612,118	\$1,618,145	\$1,674,304	3.8%	196,977	3.8%
2010	\$34,315	\$252,520	\$866,626	\$1,120,355	\$1,151,704	\$1,527,997	\$1,532,639	\$1,537,911	\$1,566,170	\$1,569,088	\$1,574,207	\$1,613,142		189,781	
FY21 data as of 2/8/21															
12 Counties pay quarterly: CC, CH, DO, ES, HU, LA, LI, LY, NY, PE, ST and WP															
*Claim payments in June 2016 are skewed due to early payments ahead of \$2 fee increase															



CMR-Division of Minerals - 2020-2023 Budgets and Forecasts (as of 2/28/2021)									
Revenue									
GL #	Description	FY20 Budget	FY20 Actuals	FY21 Budget	FY21 To Date	FY21 Forecast	FY22 Forecast	FY23 Forecast	Remarks
2511	Balance Forward Previous Year	1,597,307	1,597,307	1,198,254	1,198,254	1,871,312	1,837,078	1,627,346	
3578	BLM Cooperative Agreement	130,494	158,469	98,722	8,355	200,000	100,000	100,000	BLM grant funding AML work (Current grant expires in 2021); New grant anticipated in FY22
3580	USFS Assistance Agreement	8,397	10,772	8,397	28,039	28,039	9,279	0	USFS assistance funding AML work (Current agreement expires in 2022)
3654	Oil Production Fee	40,016	37,907	40,016	14,316	18,000	25,735	34,116	\$0.15 per bbl fee for oil production annually (\$0.05 from 12/20 - 10/21)
3717	Oil Permit Fees	6,500	3,300	6,500	1,700	1,700	1,700	1,700	Permit fees for new oil and gas wells
3718 & 3727	Mining Claim Fees	1,812,030	2,114,150	1,794,340	2,105,670	2,200,000	2,114,150	2,114,150	Mining Claim fees @ \$10/claim filing, assume \$2.2M for FY21 then FY20 actual for FY22/23
3736	Geothermal Fees	157,500	160,800	157,500	127,250	150,000	150,000	150,000	Annual fee and permit fees for geothermal wells and permitting
3740	Dissolved Mineral Resource Fees	10,000	0	10,000	0	0	0	0	Permit fees for DMR (lithium brine) permits
3770	Surface Disturbance Fee (AML)	51,567	81,740	51,567	5,680	80,000	80,000	80,000	\$20 per acre fee for new mine surface disturbance, 12-year avg.
3801	Clark County AML	50,460	50,460	0	0	0	0	0	Inter-local contract for AML securing
3805	NAAML Conference	231,840	11,000	229,740	11,000	229,740	0	0	pass-through, Nevada hosting 2021 NAAML Conference in So. Lake Tahoe
4011	Copy Machines - Sales to Public	606	27	606	15	15	15	15	Copying charge for Public Records Request
4027	Publication Sales (AML signs)	1,233	1,210	1,233	1,556	1,556	1,556	1,556	AML signs sold at office
4203	Excess Property Sales/CC refund	3,375	3,375	75	0	75	75	75	
4311	Medallion Royalty Fee	226	1,304	226	788	788	788	788	Fee for minting of medallions with State seal remitted to NDOM
4326	Treasurer's Interest	25,292	40,990	25,292	7,350	25,000	25,000	25,000	Interest we receive for money deposited with Treasurer
4620	Transfer from Recl. Bond Pool	93,327	80,793	93,327	0	65,000	65,000	65,000	Fee from Bond Pool for NDOM Management
	REVENUE TOTAL	\$4,220,170	\$4,353,604	\$3,715,795	\$3,509,973	\$4,871,225	\$4,410,376	\$4,199,746	
Expenditures									
CAT #	Description	FY20 Budget	FY20 Actuals	FY21 Budget	FY21 To Date	FY21 Forecast	FY22 Forecast	FY23 Forecast	Remarks
01	Personnel (Sal., WC, PERS, OT)	1,279,605	1,180,536	1,282,924	685,350	1,274,638	1,296,101	1,302,893	FY20 11 FTEs 2 summer interns, FY21 onward 8 summer interns, includes 3 weeks in Dec/Jan for interns, FY21 furloughs, FY21 1 retirement payout; FY22/23 is as Submitted in Budget
02	Out-of-State Travel (Staff, CMR)	19,513	18,097	16,438	0	0	23,365	21,228	Includes PDAC (3), AEMA (3), NAAML (2), no travel in FY21, FY22/23 as in budget
03	In-State Travel (Non-AML)	13,724	7,777	12,325	158	12,325	12,049	12,900	Travel, lodging and per-diem within State, as in budget
04	Carson Operating Expenses+Equipment	125,098	117,537	113,033	68,306	113,033	112,909	113,150	Rent, Operating supplies, as in budget
05	Equipment	5,648	4,875	0	0	0	1,297	1,706	Desks, chairs, as in budget
08	CMR Travel (In-State)	6,409	3,356	6,409	174	800	7,128	7,128	As in Budget
09	Special Projects (Mackay, NBMG)	260,716	154,226	239,217	107,714	215,700	125,000	125,000	FY20 - \$110k (NBMG deliverables, \$20k fwd to FY21), \$27k (PDAC), \$15k (NVMA Ed) \$1.1k display updates; FY21 - \$110k (NBMG deliverables), \$4.5k PDAC, \$15k (NVMA Ed), \$2.7k display updates, \$40k AML SOSA video, \$43.5k LVNHM; FY22/FY23 \$90k (NBMG), \$27k (PDAC), \$5k (AME), \$3k (display updates)
14	Las Vegas Operating Expenses	45,994	42,084	35,687	17,849	35,687	36,708	37,570	Office relocation in FY20, FY22/23 as in budget
17	Fluid Minerals	10,319	8,352	10,319	3,005	10,319	11,976	117,976	Field expenses for OGG and DMRE, as submitted in State Budget
18	AML Support (per diem, trucks, fuel, AML supplies and travel, SOSA supplies)	173,217	140,935	145,900	73,041	191,381	216,675	218,502	Per diem for 2 summer interns in calendar 2020, 6 winters 3 weeks (F21); 8 summer interns FY21/22/23 ; vehicle repair costs; additional Fleet Services lease on truck and 8 new Mesa tablets in 2021, UTV/trailer in FY21; FY22/23 as submitted in State Budget, includes one new truck each year
26	Computer and IT	17,770	14,380	49,599	32,445	49,599	33,856	32,366	computer hardware/replacements; additional FY21-23 EITS and Contracted IT support (new cost \$12,000/yr)
30	Training	4,840	4,151	4,840	0	4,840	5,966	5,802	ESRI training
39	AML Enhancements (contracts, equip.)	740,268	740,135	800,000	158,335	800,000	800,000	800,000	Contracted AML closure and related work
40	AML Conference (NAAML Sep. 2020)	231,840	4,315	229,740	49	229,740	0	0	Pass-through, Nevada hosting 2021 NAAML Conference in So. Lake Tahoe
87 & 88 & 89	Cost Allocations (State, Purchasing, AG)	41,536	41,536	96,085	64,329	96,085	100,000	100,000	Purchasing assessment, AG cost allocation, State cost allocation
	EXPENDITURE TOTAL	\$2,976,497	\$2,482,292	\$3,042,516	\$1,210,755	\$3,034,147	\$2,783,030	\$2,896,221	
86	Reserve - Balance Forward to Next Year	\$1,243,673	\$1,871,312	\$673,279		\$1,837,078	\$1,627,346	\$1,303,525	
			\$671,312			\$637,078	\$427,346	\$103,525	Reserve Amount in excess of \$1,200,000 guidance

### **III. B NBMG Special Project**

**Commission Study-Report(s) by Nevada Bureau of Mines & Geology      FOR POSSIBLE ACTION**

NBMG has prepared three topics as options for the Commission to consider, as presented by NBMG Director Jim Faulds:

1. Geologic Map and Report of Railroad Valley, Nye County (Total Cost: \$35,000).
2. Report on the 3D Stratigraphy, Structure, and Fluid Flow Regime of the Soda Lake Geothermal Field, Fallon, Nevada (Total Cost: \$30,000).
3. General Interest Report on Lithium in Nevada (Total Cost: \$35,000).

**Project 1: Publish Geologic Map and Report of Railroad Valley, Nye County (Total Cost: \$35,000)**

**State of Existing Information:** A geologic map and associated cross sections of the Railroad Valley area have been compiled by Don French and Jerry Walker, geologists who have worked in the area for several decades. The map has a nominal scale of 1:63,360, and was constructed in Illustrator with a GIS plug-in. It is somewhat patchwork in that various parts were added or modified over many years. Cross sections were also prepared as needed and have various scales and orientations. Several sets of subsurface data were concurrently generated to support the associated map and cross sections.

The map includes several layers with public-domain components: 1) geology compiled from numerous geologic maps; 2) gravity data and interpretation; 3) oil and gas wells; 4) a few seismic reflection lines; 5) soil-gas surveys; 6) interpretation of the geology at the end of Oligocene time, ~25 Ma; and 6) isopach map of Neogene basalt layer in the valley fill.

These map components are supported by a database of information for about 300 wells in the map area. The database includes: 1) location data; 2) formation tops; 3) formation-test data; 4) selected well-log data; 5) source-rock analyses; 6) core descriptions; 7) paleontology reports; and 8) monthly production statistics.

In addition to the cross sections, the map is supplemented with a stratigraphic column, selected well-log evaluations of reservoir quality, and several graphs showing the geothermal regime of the basin. The map was used to develop oil-gas prospects in the Railroad Valley area. It was also used to develop a model for the habitat of hydrocarbons, which served as an analog for exploration in other parts of eastern Nevada. The associated database is the most comprehensive set of subsurface information for any basin in Nevada.

**Proposal:** The objective is to publish a geologic map of Railroad Valley with selected cross sections and a report using the documents described above. The map can be prepared as an interactive document for use on a web site. A web document can also be used to access components of the database. The compilers will prepare cross sections and assemble other components and write the report. They will also obtain permissions for publication, should that be necessary. Technical support provided by NBMG will check internal consistency of the map and cross sections, as well as update selected datasets. They will also prepare the final document(s) for publication. The project will be completed by June 30, 2022. This project will be completed by Don French, Jerry Walker, and NBMG GIS/Cartographic staff.

**Benefit:** The map and associated documents will be useful in several broad categories. Oil and gas exploration in the Great Basin region will be aided by documentation of an analog for areas with less data. The extensive subsurface dataset will also improve basic geologic understanding of similar basins in the region. In addition, the map and report will provide a basis for assessing the potential of analogous areas in Nevada when land-use policy is under consideration. Finally, the project provides an archival function for some data that would otherwise be lost.

## **Project 2: Publish Report on the 3D Stratigraphy, Structure, and Fluid Flow at the Soda Lake Geothermal Field, Fallon, Nevada (Total Cost: \$30,000)**

**Introduction:** From ~2010 to 2018, NBMG supported an in-depth analysis of the stratigraphic setting and structural controls by Ph.D. student Holly McLachlan on geothermal fluid flow at the Soda Lake geothermal field (McLachlan, 2018), a currently producing ‘blind’ geothermal system near Fallon. Main objectives were to: 1) define the stratigraphic setting and structural framework, 2) generate a detailed 3D geologic model of the field area, and 3) model fluid flow in context with the geologic model. This study was undertaken to improve our understanding of basin-hosted, blind geothermal systems with the intent of facilitating development of similar systems throughout the region. Blind systems likely comprise the majority of geothermal resources throughout the Basin and Range province, and many lie buried under thick accumulations of sediments in the broad basins that make up >50% of the province. The Soda Lake field is one of the more deeply buried known systems in this region and – as is common – the structural controls on fluid flow cannot be discerned at the surface. However, the Soda Lake field has produced electricity for 30+ years, and a wealth of subsurface data has been acquired in the area. These rich datasets provided a foundation for a detailed model of the geologic setting of the Soda Lake system.

**The study:** Initially, the stratigraphic framework was defined from analysis of cuttings, borehole logs, and dating of key igneous units. Three major divisions were identified: 1) ~900-1100 m of basin-fill sediments; 2) ~1 km of Miocene bedrock, dominantly mafic lavas interbedded with subordinate tuff and sedimentary rock; and 3) a basement assemblage of Triassic-Jurassic metamorphic rocks and Jurassic-Cretaceous granite. Pursuant to this, a comprehensive 3D geologic model of the field was constructed from: 1) the new stratigraphic model, 2) bedding attitude estimates from seismic surveys and borehole logs, and 3) a fault framework derived from well data and geophysical surveys. The fault framework had been modeled in previous studies of seismic reflection and borehole data. A well-constrained set of fault picks was chosen as the initial input to the 3D model. A stratigraphic model derived from lithologic intercepts and bedding attitude data was then built around the fault framework to generate a complete geologic block model. In the final phase of the study, borehole temperature data were integrated with the block model and flow data to identify the main upwelling and outflow conduits.

**Modelling results:** The Soda Lake field is dominated by a series of E-dipping ( $65^{\circ}$ - $75^{\circ}$ E),  $\sim$ N $5^{\circ}$ - $10^{\circ}$ E-striking normal faults that bound a series of W-tilted ( $\sim$ 35°W) half-grabens. Tilt-fanning of strata suggests that extension began ~13 Ma and slowed significantly after ~5 Ma. However, the largest faults appear to have accommodated minor extension into the late Pleistocene. Three to five closely spaced E-dipping, northerly-striking faults define the west side of a central half-graben, which hosts all producing wells at the field. The likely primary conduit for upwelling at Soda Lake is proximal to a small step-over in the most well-defined and easternmost of these faults, which forms the inner boundary of the central graben.

**Proposal:** This work was funded by a DOE ARRA grant awarded to Magma Energy in 2010. The original grant did not allow for full review and publication. NBMG proposes to organize, fully review for quality assurance, and publish a consolidated version of the dissertation on the structural settings and fluid flow at the Soda Lake field. A peer-reviewed NBMG report will be produced, and the data will be released through the NBMG open data site. This work will facilitate new geothermal exploration and development in Nevada. This project will be completed by Holly McLachlan, NBMG cartographic staff, and the NBMG geothermal data manager under the supervision of NBMG Director Dr. Jim Faults.