The Wells Coalition
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Subject: Comments on the Idaho-Maryland Mine project Draft Environmental Impact Report - Well owners in the vicinity of the Idaho-Maryland Mine request adequate safeguards.

Dear Mr. Kelley:

The undersigned members of the Wells Coalition respectfully request adequate safeguards for well owners in a recirculated Draft Environmental Impact Report (DEIR) for the Idaho-Maryland Mine.

The Wells Coalition is a group of property/well owners and a few renters in the vicinity of the Idaho-Maryland mine that have formed for the purpose of protecting our only source of water, our wells.

The DEIR Well Mitigation Plan cites “expert opinion” and states being in compliance with The County Policy 17.12 [1], which designates protections for wells from potential mining impacts. However, our review of the report leads us to conclude otherwise.

> *The Nevada County General Plan 17.12 (complete policy)*
>
> *In approving mining projects which **according to expert opinion** may threaten the existing quality or quantity of surface or subsurface water which supply adjacent homes and businesses:*
> *1) The County shall require the operator to guarantee a comparable supply of water to such homes or businesses through accessible forms of security or alternate sources of water.*
> *2) Where water quantity and quality problems occur, an immediate water supply shall be provided by the operator until the source of the problem is determined.*

3) The burden of proof shall be on the operator to show that the mining operation did not create the water problem.
4) If it is determined that the operator is at fault, impacted owners shall be compensated by the operator.

The applicants DEIR *Well Mitigation Plan* states:

"*Expert opinion has determined that there is no threat to water quality to domestic water wells from the Idaho-Maryland Mine Project."* [2] and *" All potentially impacted wells are located in the E. Bennett Road area. Domestic water wells outside this area will not be impacted."* [2], [3]

The following statements from the DEIR and additional expert opinion contradict the certainty of the applicant's *Well Mitigation Plan* statements, citing repeatedly, uncertainties in hydrologic and hydrogeologic predictions and impacts to wells due to groundwater response from dewatering of the Idaho-Maryland Mine:

"*In our opinion and based on the data and analysis presented in the Itasca Report and EMKO Report, it is possible that mining activities, including blasting, backfilling with CPB, and sealing of drains or areas of the underground workings, could activate leaching and groundwater flow in new subsurface areas, potentially resulting in impacts to neighboring wells, and discharges to surface water of groundwater with water quality exceeding applicable standards. These impacts could potentially occur during the mining or post-mining periods. Because of the* ***uncertainty inherent in the bedrock fracture flow system****, monitoring will be needed, as mining activities progress, to assess potential impacts, design appropriate solutions and attain necessary permits to mitigate these potential impacts. These efforts should be addressed in the monitoring and mitigation requirements for the mining and post-mining phases of the Proposed Project*." [4]

"*The EMKO Report describes a three-step procedure used to assess potential drawdown effects in perimeter areas. A major assumption underlying the procedure is that flow contributions from the workings are distributed uniformly across the mining areas after correcting for depth.* ***However, the subsurface distribution and orientation of bedrock fractures is not uniform and is subject to uncertainty. Discussion of this uncertainty and the overall uncertainty of the analytical and numerical model predictions with respect to groundwater level impacts on individual wells should be provided. expanded to include an assessment of the uncertainty in the conclusions developed by Todd Engineers."***[4]

"*Although the analysis is considered conservative in methodology,* ***several complexities in the groundwater system could potentially result in a larger or smaller radius of influence. Although larger impacts seem unlikely, it is difficult to prove that aberrations in the system do not exist."*** [5]

"Uncertainties in the analysis indicate that monitoring should occur over a slightly larger area than where impacts are predicted. In addition, the monitoring program should consider adjustments specifically for geologic faulting." [5]

*"**Monitoring locations should also include areas outside of the predicted impact zone to account for uncertainties in the analysis,"*** [5]

*"**Due to the uncertainties regarding the complex geology, groundwater flow, flow dynamics in the mine, and the presence of faults, dewatering impacts to domestic water supply wells cannot be accurately predicted.** However property owners within the estimated area of influence around the proposed project must be ensured a continuous source of water is available to their property."*[6]

*"**The geologic formation in which the mine is located is fractured bedrock whose hydrogeology is difficult to predict.** Therefore, reliance on Domestic Well Level Monitoring Program data will be required to assess impacts and discern appropriate mitigation measures for each domestic well owner."* [7]

***"Even a well calibrated model has a large uncertainty to it, in its predictions. It turns out that this model is not well calibrated, so the uncertainties are almost certainly larger.** It's not well calibrated because it tries to make predictions of what will happen in the shallow aquifer without historic shallow well water levels to calibrate to."* [8]

*"**The fracture systems existing in buried bedrock beneath Grass Valley are not map-able within the resolution needed to predict specific dewatering effects. Technology and state-of-the-art hydrogeology have not developed to a level that fracture mapping is possible. Due to this limitation, hydrogeologic modeling is attempted by making an assumption on fracture connectivity."*** [9]

"*The groundwater in this particular area is contained in and flows through fractures in near surface bedrock and because of this fracture flow regime, the groundwater flow in quantity varies considerably with location and **cannot be predicted with certainty**. **Furthermore, complete hydraulic separation between the deeper groundwater within the underground mine workings and the shallow groundwater within fractures and supplying the domestic wells cannot be assumed**."* [11]

*"Based upon the significance criteria established on page 4.3-4, **the risk to all wells within the study area, regardless of risk category, represent a potentially significant impact."*** [12]

"*It is expected that the **actual mining areas will change from the modeled mining areas** due to vein geometry and discoveries, which will only be known after extensive underground exploration is completed in the future*."[13]

"The study area has not been monitored by an approved groundwater monitoring system designed to observe the dynamics associated with subsurface hydrology. Therefore, ***many of the initial unknown hydrogeologic and geologic parameters located within the earth between well and mine elevations still exist."***

"With fractured rock there will always be uncertainty and during my career there won't be any 100% confidence in predictions."[14]

The overwhelming consensus of the experts listed above is that the project "... may threaten the existing quality or quantity of surface or subsurface water which supply adjacent homes and businesses" per County Policy 17.12 [1], and therefore the applicant is not in compliance with that policy. In light of the uncertainty present in the hydrogeology predictions, the DEIR Well Mitigation Plan is inadequate.

The mitigation plan is inadequate because it ***does not satisfy the condition of the County Policy, and it has no means of even determining whether those conditions will be met.***

The DEIR has not adequately defined an area of potential impacts.

The DEIR acknowledges that more groundwater level data is needed to assess the potential impacts on groundwater levels [15]

The DEIR's analysis of groundwater impacts is so fundamentally deficient that those of us who rely on groundwater wells for our drinking supply do not have the fundamental information necessary to evaluate the Project's effects on our wells. The DEIR's analysis must be comprehensively revised to fully account for the severity and extent, including the geographic magnitude, of the Project's impacts. Until the EIR accurately discloses the Project's groundwater impacts, it is not possible to determine whether the mitigation the DEIR relies on would even be close to sufficient to protect our wells.

The Wells Coalition intends to weigh in again on the EIR's approach to well mitigation once the EIR's groundwater impact analysis is thoroughly revised and recirculated for public review.

Thank you for your time and consideration.

Sincerely,

The Wells Coalition

Our membership represents almost 100 properties and is still growing. A number of our members wanted to have their signatures added to this letter. Their consent was gathered electronically and the names are shown below. Contact details are available by request to the Nevada County Planning Commission only.

Gary Pierazzi
Emerald Court, Grass Valley

Bob and Christy Hubbard
Mink Court, Grass Valley

Tony Lauria
Greenhorn Rd., Grass Valley

Greg and Robin Van Ess
Anchor Lane, Grass Valley

Matt and Laina Levy
Anchor Lane, Grass Valley

Robin Milam, Tom Milam
Axle Ct, Grass Valley

Jill Shoemaker and Stuart Beach
Barker Lane, Grass Valley

Judy Swartzendruber
Beaver Dr. Grass Valley

Tod and Donna Bowman
Beaver Dr., Grass Valley

James R. Hall
Beaver Drive, Grass Valley

Eric Gibbons, Diane Gibbons
Beaver Drive, Grass Valley

Jennifer Durrett, Dale Durrett
Beaver Drive, Grass Valley

Aaron and Kari Bailey
Beaver Drive, Grass Valley

Kathy Foley, Susan Steen, Julie Jenssen
Beaver Drive, Grass Valley

Gary Bowman and Amy Bowman
Bennett Road, Grass Valley

Daniel & Linda Ketcham
Brunswick Pines Road, Grass Valley

Sandra Hewston
Casa Loma Dr., Grass Valley

Linda Lanzoni
Christopher Robin Way, Grass Valley

Lanny Netz
Collier Rd., Grass Valley

Douglas Cornish
Cordell Ct., Grass Valley

Jim and Renate Otto
Diamond Court, Grass Valley

Laura and Don Gagliasso
Diamond Ct., Grass Valley

Kim Davison, Bonnie Jones, Tyler Jones
E. Bennett Rd., Grass Valley

Dennis & Linda Voss
E. Bennett Road, Grass Valley

Robert and Victoria Jewel
East Bennett Road, Grass Valley

George and Cynthia Geros
Elk Lane, Grass Valley

Linda Cosick
Foster Rd., Grass Valley

Laura Solano
Glenn Pines Rd, Grass Valley

Howard, Cynthia, & Florence Kuhlmann, Corinne Beall
Greenhorn Dr., Grass Valley

Robert Lewis
Greenhorn Rd, Grass Valley

Erin Thomas-Rose, Stanley Thomas-Rose
Greenhorn Rd, Grass Valley

Sandra Young
Greenhorn Road, Grass Valley

Mondae Hott and Chris House
Greenhorn Rd, Grass Valley

Mary Ann Coleman
Greenhorn Road, Grass Valley

Lauren Lewis
Greenhorn Road, Grass Valley

Caela Wynd
Howald Lane, Grass Valley

Gwen Moore
Hubbard Rd., Grass Valley

Karyn Gladstone
Jones Ridge Rd, Grass Valley

Patricia Bennett
Lava Rock Ave., Grass Valley

John Cosenza - Owner
Leaf Lane, Grass Valley (two properties)

Peter Fromm
Liquidambar Lane, Grass Valley

Louise and Carter Taylor
Loma Rica Dr., Grass Valley

Jennifer Burt
Loma Rica Drive, Grass Valley

Janet Steinmann, Jim Steinmann
Loma Rica Drive, Grass Valley

David Wills
Lower Anchor Lane, Grass Valley

John Vaughan, Gail Johnson Vaughan
Lower Colfax Road, Grass Valley

Elise Stupi, Ken Stupi
Madrona Leaf Court, Grass Valley

Larry Rieger, Patsy Rieger
Madrona Leaf Ct., Grass Valley

Michael, Carla, Tiffani, & Feather Fanucchi
Madrona Leaf Ct., Grass Valley

Edson & Lynell Holmes
Mink Court, Grass Valley

Lauren and Mary Anderson
Mink Court, Grass Valley

Hugh Shelbourn, Maggi Shelbourn
N. Meadow View Drive, Grass Valley

Nicolette and Alex Renoir
Old Mine Rd., Grass Valley

Dorothy Goodnow
Old Mine Rd., Grass Valley

Richard Melim, Dolly Melim
Old Mine Road, Grass Valley

Sal Giacinto
Wood Rose Way, Grass Valley

Penelope Curtis
Tiger Lily Lane, Grass Valley

Azriel LaMarca, Michael LaMarca
Icon Way, Nevada City

Bob and Barbara White
Wood Rose Way, Grass Valley

Louisa Suta
N. Bloomfield Rd, Nevada City

Richard Blair
Wood Rose Way, Grass Valley

Sara Bottrell
Side Hill Circle, Nevada City

*** footnotes***

[1] The Nevada County General Plan 17.12 (complete policy).
[2] Appendix K.9 Idaho Maryland Well Mitigation Plan, p1, p3, Idaho-Maryland Mine Draft DEIR (December 2021).
[3] EMKO Environmental, Inc. (2020). Groundwater Hydrology and Water Quality Analysis Report for the Idaho-Maryland Mine Project, Nevada County, California. [4] Appendix K.7 West/Yost Peer Review (August 27, 2020), p8-9, p18, Idaho-Maryland Mine Draft DEIR (December 2021).
[5] Todd Engineers (2007), Final Report Hydrogeologic Assessment Idaho-Maryland Mine, prepared for Idaho-Maryland Mining Corporation, August t.p22, p25, p26.
[6] Idaho-Maryland Mine Project Draft EIR (2008) p4.7-34.
[7] Idaho-Maryland Mine Project, Revised Project Description (May 2011) Appendix N-T-3.
[8] June Oberdorfer, PhD., Certified Hydrogeologist, Review of the March 2020 EMKO Groundwater Hydrology Report, Minewatch Virtual Community Meeting Video Presentation (October 2021).
[9] Steve Baker, Certified Hydrogeologist, Response Comment Letter to 2008 Idaho Maryland Mine DEIR.
[11] Idaho-Maryland Mine Project Draft EIR (October 2008) 4.8 Hydrology and Water Quality, p 4.7.29.
[12] Draft Environment Impact Report for The Idaho-Maryland Mine (May 1995) p4.3-5.
[13] Appendix K.3, Itasca Denver Inc., “Groundwater Model Report”, November 2020, p31.
[14] Houmau Liu, hydrogeologist for Itasca, February 9, 2022 NID board of directors meeting.
[15] Idaho-Maryland Mine Project DEIR Report, December 2021, 4.8 Hydrology & Water Quality, p67.