



**STATE OF NEW MEXICO  
BEFORE THE SECRETARY OF ENVIRONMENT**

**IN THE MATTER OF: )  
THE APPLICATION OF )  
NEW MEXICO COPPER CORPORATION )  
FOR A GROUNDWATER DISCHARGE )  
PERMIT FOR THE COPPER FLAT MINE )  
(DP-1840). )  
\_\_\_\_\_ )**

**Docket No. GWB-18-06 (P)**

**JOINT STATEMENT OF INTENT TO PRESENT TECHNICAL TESTIMONY BY  
TURNER RANCH PROPERTIES, L.P. AND HILLSBORO PITCHFORK RANCH, LLC**

Pursuant to the New Mexico Environment Department’s Permit Procedures, 20.1.4 NMAC, and the Scheduling Order dated June 15, 2018, Turner Ranch Properties, L.P. and Hillsboro Pitchfork Ranch, LLC (collectively the “Ranches”) hereby jointly submit their Statement of Intent to Present Technical Testimony at the public hearing in this matter, scheduled for September 24, 2018 through September 28, 2018, and continuing as necessary from October 9, 2018 through October 12, 2018, in Truth or Consequences, New Mexico. The hearing will address the proposed Discharge Permit (DP-1840), to be issued by the New Mexico Environment Department (“Department”) to New Mexico Copper Corporation (“N.M. Copper Corp.”) for the Copper Flat Mine facility in Sierra County, New Mexico.

In accordance with section 20.1.4.300.B(1)(a)(i) through (vii) NMAC, the Ranches state as follows:

1. The name of the persons jointly filing this Statement are Turner Ranch Properties, L.P. and Hillsboro Pitchfork Ranch, LLC.
2. The Ranches oppose the issuance of the discharge permit. Alternatively, if the permit is issued, they propose more stringent permit conditions as stated herein.

3. The name, address, affiliation, and educational and work backgrounds of each witness is as follows:

- A. Stephen J. Dobrott  
Ambassador for Eco-Tourism  
Ted Turner Expeditions  
500 Main Street  
Truth or Consequences, New Mexico 87901

Mr. Dobrott is Ambassador for Eco-Tourism with Ted Turner Expeditions, which includes eco-tourism on the Ladder Ranch. He was Property Manager of the Ladder Ranch from 1992 until 2017. He worked for the United States Fish and Wildlife Service from 1985 to 1992. He holds a Bachelor of Science degree in Wildlife Biology from the University of Arizona.

- B. Robert Cunningham  
Co-owner and Manager  
Hillsboro Pitchfork Ranch  
82 Cunningham Road  
Hillsboro, New Mexico 88042

Along with his sister Mrs. Kathy McKinney, Mr. Cunningham is the co-owner and co-manager of the Hillsboro Pitchfork Ranch. He is a fourth-generation rancher on the property, and has worked and managed the ranch for over 65 years. He worked for the United States Forest Service for 34 years in fire and aviation management. He holds a Bachelor's degree in General Studies from the University of New Mexico.

- C. James R. Kuipers, P.E.  
Consulting Engineer  
Kuipers & Associates LLC  
Post Office Box 145 (mailing)  
2601 Steel Creek Road (shipping)  
Wisdom, Montana 59761

Mr. Kuipers is a professional engineer and head of the consulting firm of Kuipers & Associates LLC, where he has worked since 1996. He provides technical assistance to public interest groups and tribal, local, state, and federal governments on technical, environmental, and

financial aspects of mining, including financial assurance issues. From 1997 to 2005, Mr. Kuipers also worked as a consulting engineer for the Center for Science in Public Participation, a non-profit organization in Bozeman, Montana, providing assistance on technical and environmental issues associated with hardrock mining. From 1993 to 1995, he worked for Denver Mineral Engineers, Inc., in Littleton, Colorado, where he was manager of the Mining and Wastewater Treatment Program, and then manager of the Process Engineering Department. In 1991 and 1992, he worked for Western Minerals Corporation, where he held the positions of Corporate Senior Metallurgist in Wheat Ridge, Colorado, and Project Manager for the Northumberland Gold Mine in Round Mountain, Nevada. From 1986 to 1991, Mr. Kuipers held various positions for Western Gold Exploration and Mining Co., including Shift Foreman, Mill Superintendent, Project Engineer, Project Manager, and Corporate Senior Metallurgist on several mining projects in the western United States, Ontario, Canada, and Johannesburg, South Africa. In 1984 and 1985 he worked for Canyonlands 21st Corporation as Director of Metallurgy in Blanding Utah and Project Manager in Jarbidge, Nevada. In 1983 and 1984, he worked for Cumberland Mining Company as Mill Superintendent in Basin, Montana and Head Metallurgist in Virginia City, Montana. Between 1974 and 1980, Mr. Kuipers held summer jobs with Huckaba Construction Co. in Whitehall, Montana and Cooke City, Montana, working as an underground and surface miner, millwright, mill operator, and fire assayer supervisor.

Mr. Kuipers has a Bachelor of Science degree in Mineral Process Engineering from Montana College of Mineral Science and Technology (now Montana Technological University or Montana Tech) in Butte.

**D.** Tom Myers, Ph.D.  
Consultant, Hydrology and Water Resources  
6320 Walnut Creek Road  
Reno, Nevada 89523

Dr. Myers has been a self-employed hydrologic consultant since 1993. His primary focus is hardrock mines, mine dewatering, groundwater modeling, natural gas development, and contaminant transport. From 1999 to 2004, Dr. Myers was Executive Director of Great Basin Mine Watch, where he was responsible for reviewing and commenting on mining projects with a focus on groundwater and surface water resources. From 1992 to 1997, he worked as a research assistant at the University of Nevada in Reno, conducting research on riparian area and watershed management, including stream morphology, aquatic habitat, cattle grazing, and low-flow and flood hydrology. From 1990 to 1992, he was a research and teaching assistant at the University of Arizona in Tucson. He conducted research on rainfall and runoff processes and climate models. He also taught the laboratory section for sophomore-level Principles of Hydrology course. From 1988 to 1990, he was a research assistant at the University of Nevada in Reno, where he conducted research on aquatic habitat, stream morphology, and livestock management. From 1983 to 1988, he worked as a hydraulic engineer at the United States Bureau of Reclamation, where he performed hydrology planning studies on a range of topics including flood plains, water supply, flood control, salt balance, irrigation efficiencies, sediment transport, rainfall-runoff modeling, and groundwater balance.

Dr. Myers has a Bachelor of Science degree in civil engineering from the University of Colorado in Boulder, a Master of Science degree in hydrology and hydrogeology from the University of Nevada in Reno, and a Ph.D. in hydrology and hydrogeology from the University of Nevada in Reno.

**D.** The Ranches may call additional witnesses in rebuttal.

4. The direct testimony of each witness is expected to be for the following lengths of time:

Stephen Dobrott: One-half hour

Robert Cunningham: One-half hour

James Kuipers: Two hours

Tom Myers: Three hours

5. The Ranches intend to offer the following exhibits into evidence at the hearing:

**Exhibit 1.** Proposed Discharge Permit, New Copper Facility: Copper Flat Mine (DP-1840) (draft Aug. 10, 2018).

**Exhibit 2.** N.M. Environmental Law Center, comments on the Copper Flat Copper Mine Draft Discharge Permit, DP-1840, submitted on behalf of Turner Ranch Properties, L.P. and Hillsboro Pitchfork Ranch (May 4, 2018).

**Exhibit 3.** Resume of Stephen Dobrott.

**Exhibit 4.** Maps, photographs, and species inventories for Ladder Ranch.

**Exhibit 5.** Resume of Robert Cunningham.

**Exhibit 6.** Maps and photographs of Hillsboro Pitchfork Ranch.

**Exhibit 7.** U.S. Bureau of Land Management, Draft Environmental Impact Statement: Copper Flat Copper Mine (Nov. 2015).

**Exhibit 8.** Resume of James R. Kuipers.

**Exhibit 9.** James R. Kuipers P.E., Copper Flat Mine Draft Discharge Permit 1840 Technical Comments (May 1, 2018).

**Exhibit 10.** International Network for Acid Prevention, *Global Acid Rock Drainage Guide* (Oct. 21, 2014).

**Exhibit 11.** Jean-Pierre Giroud & Rudolph Bonaparte, Leakage through Liners Constructed with Geomembranes – Part II Composite Liners, 8 *Geotextiles and Geomembranes* 71-111 (1989).

**Exhibit 12.** Jean-Pierre Giroud, Equations for Calculating the Rate of Liquid Migration Through Composite Liners Due to Geomembrane Defects, 4 *Geosynthetics International* 35 (1997).

**Exhibit 13.** Ann S. Maest & James R. Kuipers, *Predicting Water Quality at Hardrock Mines: Methods and Models, Uncertainties, and State-of-the-Art* (2005).

**Exhibit 14.** Proposed New Permit Condition C105(C)(2): Estimate and analysis of leakage from Tailings Storage Facility.

**Exhibit 15.** N.M. Environmental Law Center, Comments of Turner Ranch Properties, L.P. on the Draft Environmental Impact Statement for the Copper Flat Mine (Apr. 4, 2016).

**Exhibit 16.** Earthworks, *U.S. Copper Porphyry Mines: The Track Record of Water Quality Impacts Resulting from Pipeline Spills, Tailings Failures, and Water Collection and Treatment Failures* (July 2012).

**Exhibit 17** M3 Engineering and Technology Corporation, *Copper Flat Project: Form 43-101F1 Technical Report – Feasibility Study, New Mexico, USA* (Nov. 21, 2013).

**Exhibit 18.** Stratus Consulting Inc., Preassessment Screen for Tyrone, Chino, and Morenci Mine Sites, Grant County, New Mexico, and Morenci, Arizona (June 18, 2003).

**Exhibit 19.** Letter from Jeff Smith, New Mexico Copper Corp., to David Ennis, New Mexico Energy, Minerals and Natural Resources Department, Mining and Minerals Division, Re: Financial Assurance Proposal, Copper Flat Mine (Aug. 9, 2018), with attachments 1 through 3.

**Exhibit 20.** N.M. Energy, Minerals & Natural Resources Department, Mining and Minerals Division, Guidance for Calculating Indirect Capital Costs for Mine Reclamation and Closure Cost Estimates (draft Nov. 2016).

**Exhibit 21.** U.S. Bureau of Land Management, Guidelines for Reviewing Reclamation Cost Estimates (undated).

**Exhibit 22.** Curriculum Vitae for Tom Myers.

**Exhibit 23.** Tom Myers, Technical Memorandum: Review of the Draft Discharge Permit and Application, Copper Flat Copper Mine (May 1, 2018).

**Exhibit 24.** Tom Myers, Technical Memorandum: Contaminant Transport through Groundwater at the Proposed Copper Flat Mine (Aug. 24, 2018).

**Exhibit 25.** Tom Myers, Contaminant Transport Calculations.

**Exhibit 26.** Mary P. Anderson *et al.*, *Applied Groundwater Modeling: Simulation of Flow and Advective Transport* (2nd ed. 2018), selected pages.

**Exhibit 27.** David M. Nielsen, ed., *Practical Handbook of Environmental Site Characterization and Ground-Water Monitoring* (2nd ed. 2006).

**Exhibit 28.** B.B.S. Singhal & R.P. Gupta, *Applied Hydrogeology of Fractured Rocks* (2nd ed. 2010).

**Exhibit 29.** John Shomaker & Associates, *Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico* (Revised May 2018).

**Exhibit 30.** Proposed New Permit Condition C103(A): Study to determine transmissivity of andesite bedrock.

**Exhibit 31.** Michael T. Jones *et al.*, *Conceptual Model of Groundwater Flow in the Animas Uplift and Palomas Basin – Copper Flat Project, Sierra County, New Mexico* (May 9, 2012).

**Exhibit 32.** Interra, *Baseline Data Characterization Report for Copper Flat Mine, Sierra County, New Mexico* (June 2012).

**Exhibit 33.** Karen Jardine, *et al.*, *Monitoring Networks in Fractured Rocks: A Decision Analysis Approach*, 34 *Groundwater* 504 (May-June 1996).

**Exhibit 34.** Proposed Revised Permit Condition C113(I): Additional groundwater monitoring wells.

**Exhibit 35** Boundary Survey and Maps.

**Exhibit 36.** Maps Showing Pit Lake.

**Exhibit 37.** John Shomaker and Associates, Inc., *Status Report for Stage 1 Abatement at the Copper Flat Mine Site Near Hillsboro, New Mexico* (June 27, 2013).

**Exhibit 38.** *New Mexico ex rel. N.M. State Engineer v. Elephant Butte Irrigation District*, Subfile Order and Judgment, No. CV 06-888 (3d Judicial Dist. Ct. Feb. 28, 2018).

The Ranches may introduce additional exhibits as evidence in rebuttal. They may also use additional demonstrative exhibits at the hearing, such as maps, charts, graphs, and “power-point” slides without introducing them into evidence. These demonstrative exhibits will be provided to the other parties approximately one day before the witness is scheduled to testify.

6. The technical materials relied on by the witnesses are listed herein as exhibits.

7. A summary of the anticipated direct testimony of each witness follows:

A. Stephen Dobrott will be qualified as an expert in biology and ecology, as well as bison ranching. He will present both expert testimony and factual testimony based on his personal knowledge of the Ladder Ranch.

First, Mr. Dobrott will describe the wildlife species and habitat conservation programs at the Ladder Ranch. He will also describe the eco-tourism business, the big game hunting business, and the livestock business, raising American bison, at the Ladder Ranch.

Second, Mr. Dobrott will present testimony describing the springs and creeks on the Ladder Ranch property, some of which flow near the ranch property boundary, which abuts the mining area. He will describe Warm Spring, Manager House Spring, Garden Tank Spring, and Myers Animas Spring, as well as other unnamed springs. He will also describe Cave Creek and Las Animas Creek. He will explain that these water sources provide water for livestock, irrigation, and a host of wildlife species.

Third, Mr. Dobrott will testify about the importance of groundwater beneath the Ladder Ranch. Groundwater feeds the springs and ultimately the creeks on the property. He will also describe the wells on the property, which are used to provide groundwater for domestic, irrigation, livestock, and wildlife purposes.

Fourth, Mr. Dobrott will describe the extraordinary wildlife at the Ladder Ranch. The wildlife includes game species, such as deer and elk; imperiled or listed threatened or endangered species, such as the endangered Mexican gray wolf, the threatened Chiricahua leopard frog, the endangered Bolson tortoise, the threatened yellowbill cuckoo, the Rio Grande cutthroat trout, the Rio Grande chub, and the Rio Grande sucker; and over 200 species of birds, including quail and other game birds. He will also testify that the Ladder Ranch holds the only population of Arizona sycamores in the Rio Grande Basin on Las Animas and Cave Creeks. He



will explain that this wildlife and plant life depends on pristine water from the springs and creeks that flow on the Ladder Ranch.

Finally, Mr. Dobrott will state his opinion that any significant change in the quality of water in the creeks, springs, or groundwater could seriously and adversely upset the balance of life on the Ladder Ranch that depends on these water sources. It could seriously and irreparably harm the eco-tourism, hunting, and livestock businesses of the Ladder Ranch. It could also disrupt or destroy the wildlife species and habitat conservation programs at the Ladder Ranch.

Mr. Dobrott will refer to Exhibits 3 and 4.

**B.** Robert Cunningham will be qualified as an expert in ranch management, native game and wildlife, and ecology. He will also present both factual and expert testimony based on personal knowledge of the Pitchfork Ranch.

First, Mr. Cunningham will testify that the Grayback Canyon area of the Hillsboro Pitchfork Ranch lies in close proximity to the Copper Flat Mine area. Grayback Canyon is bounded on the north by the Ladder Ranch and on the east by Copper Flat Mine. The head waters of Grayback Canyon are primarily on lands owned by the Hillsboro Pitchfork Ranch. The Pitchfork Ranch property is located within approximately 560 yards from the proposed Copper Flat Mine pit lake.

Second, Mr. Cunningham will testify that the proposed open pit at the Copper Flat Mine will be hydraulically immediately downgradient of the Grayback Canyon area of the Hillsboro Pitchfork Ranch. Given the groundwater gradient, and given the proximity of the Pitchfork Ranch to the proposed open pit, groundwater from beneath Grayback Canyon will be drawn into the pit lake and become contaminated with mine water. In presenting this testimony, Mr. Cunningham will rely, in part, on the opinions of a hydrologist, Dr. Tom Myers.

Third, Mr. Cunningham will testify about the groundwater sources in Grayback Canyon. He will describe the Rogers well, an old wooden windmill known as Rogers Mill, which was constructed around 1900. This functioning windmill is approximately 1,090 linear feet up gradient from the proposed Copper Flat Mine pit lake. A second well water source, also up-gradient from the proposed pit site, is the Grayback well, which is approximately 2,690 linear feet up-gradient from the proposed pit lake. The Grayback well was originally developed in 1950. From the Grayback well, numerous water lines, storage tanks and remote water drinking troughs have been established in remote areas of the Grayback drainage for the use of livestock and wildlife.

Fourth, Mr. Cunningham will discuss the uses of water in Grayback Canyon. He will explain that livestock feed in this area because the area has particularly good grasses, including side oats and black grama, as well as thick concentrations of mountain mahogany. He will further explain that wildlife feed in this area because it has an abundance forbes, gamble oak, and mountain mahogany, a preferred feed for mule deer. Both livestock and wildlife utilize the area year-round due to good forage, thermal cover, and access to dispersed water from the Grayback well and the Rodgers well. Because the deep canyons make the area very private, and because the canyon has good feed and good water, the area has become premium mule deer habitat. Mr. Cunningham will explain that representatives of the New Mexico Department of Game and Fish sometimes refer to this section of the ranch as a “nursery,” as a substantial number of mule deer doe live and fawn there. For the last 11 years, the Pitchfork Ranch has partnered with the New Mexico Department Game and Fish in a program to improve mule deer habitat. This area depends on plentiful fresh water.

Finally, Mr. Cunningham will describe the livestock raising business and the hunting business at the Hillsboro Pitchfork Ranch. Game species include mule deer, elk, and quail. These businesses depend on fresh water for the livestock, for the game, and for the vegetation that these animals feed on. He will testify that as groundwater is drawn into the pit during and after mining operations, the ecology of Grayback Canyon will be harmed, and these businesses will suffer.

Mr. Cunningham will refer to Exhibits 5 through 7.

C. James Kuipers will be qualified as an expert in mining engineering, the effects of mining on the environment including water quality, mining remediation, and financial responsibility for mines.

Mr. Kuipers will testify on the history of mining operations at the Copper Flat Mine, and state and federal regulation of those operations. He will explain the potential for mining influenced water, including acid drainage, to be discharged from mine facilities. He will testify on the likelihood for leaks and spills of tailings or process water at the mine, which is not adequately addressed in the proposed discharge permit. He will also testify that the financial assurance proposed for the mine is seriously inadequate.

First, Mr. Kuipers will explain how mining influenced water results from hardrock mining operations and can result in both acid drainage and the discharge of water contaminated by process chemicals. He will explain that mining influenced water forms in waste rock piles and tailings impoundments at hardrock mine sites. He will describe how mining influenced water affects groundwater quality. He will testify that groundwater contamination already has occurred historically at the Copper Flat Mine.

Second, Mr. Kuipers will testify that synthetic geomembrane liners inevitably leak. Although high-density polyethylene liners may have very low hydraulic conductivity based on permeation, leakage rates from defects in liners are several orders of magnitude greater than leakage rates from permeation. Mr. Kuipers will explain that it is therefore standard industry practice to design liner systems to account for leakage due to liner defects as well as permeage. Mr. Kuipers will note that tailings impoundments, such as the proposed Tailing Storage Facility at the Copper Flat Mine, are particularly susceptible to leakage due to the head pressure of the liquid in the impoundment.

Mr. Kuipers will testify that the permit application, contrary to standard industry practice, does not estimate or otherwise address leakage from the liner system at the proposed Tailing Storage Facility. Further, the permit application does not include any analysis of effects that leakage from the liner would have on groundwater, nor does the proposed discharge permit address these issues. Mr. Kuipers will recommend that N.M. Copper Corp. withdraw its permit application until an estimate of leakage from the liner system can be prepared, the effects of such leakage on groundwater can be analyzed and, if necessary, a range of mitigation measures can be assessed. Once N.M. Copper Corp. has taken these steps, it can resubmit a revised permit application. Alternatively, Mr. Kuipers will recommend that the Department add a condition to the discharge permit requiring that these steps be taken, and he will introduce a proposed permit condition as an exhibit (Exhibit 14).

Third, Mr. Kuipers will testify that leaks and spills of tailings, wastewater, and other contaminants are common at copper mine facilities. He will discuss multiple leaks and spills that occurred over the past thirty years at the Freeport-McMoRan (formerly Phelps Dodge) Chino mine in Grant County, New Mexico, the Freeport-McMoRan (formerly Phelps Dodge) Tyrone

mine, also in Grant County, New Mexico, and other mine facilities. Similar leaks and spills will most likely occur at the Copper Flat Mine and result in groundwater contamination. He will also discuss the possibility of catastrophic failure of the Tailing Storage Facility. And he will discuss groundwater contamination that has occurred previously at the Copper Flat Mine.

Fourth, Mr. Kuipers will testify that the proposed financial assurance for closure of the Copper Flat Mine that N.M. Copper Corp. has submitted to the State is inadequate, because it is based on an unrealistically low cost estimate. The cost estimate is low, in large part, because N.M. Copper Corp. unrealistically assumes that within 25 years after it ceases mining operations and closes the mine, it can cease monitoring, maintenance, and water management at the mine. N.M. Copper Corp. assumes, in other words, that it will be able to simply “walk away” from the mine after a few years. Mr. Kuipers will explain that the models used to predict seepage flows, discharge water quality, pit lake levels, pit lake water quality, and amount of stormwater, among other things, are inherently uncertain. He will show that N.M. Copper Corp. has portrayed a “best case” scenario in the plans and projections informing its cost estimate, which would pose a high financial risk to the public. Mr. Kuipers will recommend that N.M. Copper Corp. withdraw its discharge permit application, prepare a more conservative yet reasonable cost estimate for closure of the mine, and resubmit a revised application.

Moreover, Mr. Kuipers will note that the proposed financial assurance does not follow guidance issued by the Mining and Minerals Division of the New Mexico Energy, Minerals and Natural Resources Department and by the United States Bureau of Land Management. Although N.M. Copper Corp. has not yet proposed a discount rate, Mr. Kuipers will caution against applying a discount rate that is unrealistically high, which would result in an underestimate of the actual costs. He will also testify that the estimated indirect costs, including engineering, design,

and construction management costs; contingency costs; contractor overhead costs and profit; and agency administrative and contract costs, are too low and counter to agency guidance.

Mr. Kuipers will also testify that N.M. Copper Corp. has underestimated the period of time that monitoring and maintenance will be necessary at the Copper Flat Mine after operations cease. He will testify that the estimated period of time that water will continue to drain from the Tailings Storage Facility, 25 years, is unrealistically short. Although the drain down period is uncertain, other comparable mines have assumed a period of 100 and as much as 500 years, and even these periods are surrogates for long-term management periods that are highly uncertain and could be much longer. He will also testify that the estimated period of time that groundwater monitoring will be necessary – again, 25 years – is also too short. Other comparable copper mine sites have assumed that water monitoring will continue for 100 to 500 years, although monitoring will likely be necessary in perpetuity at those sites and at the Copper Flat Mine. And he will testify that the estimated period of time for maintenance – a one-time cost after 7 years – is too short. Again, at similar mines the estimated maintenance period is 100 to 500 years. Mr. Kuipers will opine that monitoring, maintenance, and water management – potentially including water treatment – at the Copper Flat Mine after closure will be necessary in perpetuity.

Mr. Kuipers will also testify that the closure cost estimate does not include: (a) costs for removal of large equipment, piping, and other infrastructure; (b) costs for mitigation of water contaminated during road reclamation; or (c) comprehensive costs for waste disposal.

Finally, Mr. Kuipers will opine that the discharge permit application for the Copper Flat Mine is not complete. He will recommend that N.M. Copper Corp. withdraw the permit application, revise and supplement the application and documents supporting the application, and then resubmit the application to the Department.

Mr. Kuipers will also note that although the Copper Flat Mine asserts water rights that it will use for dust control under the proposed discharge permit, the validity of those rights has been appealed.

Mr. Kuipers will refer to Exhibits 1 and 2, 7 through 21, 29, 31, and 35 through 38.

**D.** Tom Myers will be qualified as an expert in hydrology and hydrogeology, and mine remediation.

Dr. Myers will testify on the potential for contaminants from the Copper Flat Mine to seep into groundwater beneath the mine, to migrate off the mine site, and to reach the Ladder Ranch. He will testify that the proposed groundwater monitoring system at the mine is inadequate to ensure that contaminants migrating from mine facilities will be detected. Dr. Myers will also testify about the flow of groundwater into the open pit.

First, Dr. Myers will testify that the andesite bedrock underlying the proposed waste rock dumps at the mine will not serve as a “natural liner” system. Further, he will testify that the mining company has not submitted sufficient data to demonstrate that the andesite bedrock is a “very low permeability formation” or that it will be “protective of groundwater.” He will explain that the pumping rate for dewatering the pit during mine operations in 1982 is not indicative of the transmissivity of the andesite. He will also explain that the pressure injection test of the andesite substantially failed and does not show that the rock has a low permeability, especially near the surface where it would control infiltration from the waste rock. Moreover, the test was performed on a boring taken at depths of more than 60 feet below the ground surface. The sample is not representative of the rock closer to the surface, which is likely to be weathered and more permeable. The tests also do not take into account the likelihood of large fractures in the andesite that could provide conduits for the migration of contaminants.

Dr. Myers will offer his opinion that further study and characterization of the andesite bedrock is needed to determine its potential transmissivity. He will recommend that N.M. Copper Corp. withdraw the discharge permit application for the Copper Flat Mine until such a study can be completed. He will recommend a study using infiltrometers, as well as additional pressure injection tests closer to the ground surface. After the study is completed, N.M. Copper Corp. can revise the permit application to incorporate the results of the study and resubmit the application. Alternatively, Dr. Myers will recommend that the Department add a condition to the discharge permit requiring that a study of the andesite be performed, and he will introduce a proposed permit condition as an exhibit (Exhibit 30).

Second, Dr. Myers will testify about the potential for leakage of contaminants from the liner system proposed for the Tailing Storage Facility and the other proposed impoundments at the Copper Flat Mine. He will testify that even well-constructed liner systems develop leaks. Lined impoundments are particularly susceptible to leaks due to the head created by the impounded liquid. Contaminated mine water leaking from these impoundments will discharge into groundwater beneath the Copper Flat Mine site. Dr. Myers will also testify that the waste rock stockpiles, and the collection ditches associated with the waste rock stockpiles and the Tailing Storage Facility – which N.M. Copper Corp. proposes to construct without liners – will discharge additional contaminated water into groundwater beneath the site. He will explain that groundwater contamination has already occurred as a result of the mining operations in 1982 at the Copper Flat Mine.

Dr. Myers will testify that, although generally accepted methods exist to estimate leakage from lined impoundments and seepage from other mine units, N.M. Copper Corp. has not attempted to quantify this leakage and seepage. He will note that proper characterization of the



andesite bedrock is essential to making this estimate. He will recommend that N.M. Copper Corp. withdraw its permit application until such an estimate can be completed and incorporated into the permit application.

Third, Dr. Myers will testify about the potential for contaminants from the Copper Flat Mine site to migrate off-site, including migration to the Ladder Ranch. He will describe his analysis, using an interpretive model, of the migration of contaminants in groundwater under several plausible scenarios. He will conclude that there is a potential for significant levels of contaminants in groundwater to migrate eastward outside the estimated “area of open pit hydrologic containment,” outside the “open pit surface drainage area,” beyond the N.M. Copper Corp. property line, beyond the mining area boundary, and as far as the Rio Grande. Contaminants could also migrate northward, through local flow paths and north-south running fracture zones, and by dispersion, reaching groundwater beneath the Ladder Ranch property.

Fourth, Dr. Myers will testify that the groundwater monitoring system in the August 10, 2018 proposed discharge permit – including the new proposed monitoring wells – is inadequate. Using the interpretive model, he will estimate the radial dispersion of contaminants in the aquifer under various scenarios. He will conclude that a plume of groundwater contamination from mine facilities could flow undetected between groundwater monitoring wells given the configuration of the proposed groundwater monitoring system. He will thus conclude that the proposed system is inadequate, and that additional monitoring wells will need to be installed.

Dr. Myers will offer his opinion that groundwater monitoring wells need to be spaced more closely together for the groundwater monitoring system to be effective. He will recommend that N.M. Copper Corp. withdraw the discharge permit application for the Copper Flat Mine until a more effective groundwater monitoring plan can be developed, at which time

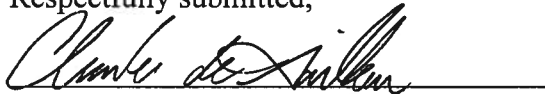
the company can resubmit a revised application. Alternatively, Dr. Myers will recommend that the Department revise the condition in the proposed discharge permit addressing groundwater monitoring (as revised August 10, 2018) to require several additional monitoring wells, and he will introduce a revised proposed permit condition as an exhibit (Exhibit 34).

Fifth, Dr. Myers will testify about the pit lake. He will testify that the areal extent of the pit lake that will form in the proposed open pit is likely to encroach on federal land. He will testify that during rapid refill of the pit lake, some water from the pit lake will discharge into groundwater. And he will testify that clean groundwater from outside the mine property will flow into the open pit and the pit lake after closure, will mix with pit lake water, and will thus become contaminated with waste water from the mine.

Dr. Myers will refer to Exhibits 1 and 2, 7, 11 and 12, 15, and 22 through 37.

August 24, 2018

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that on this 24th day of August 2018, a copy of the foregoing Joint Statement of Intent to Present Technical Testimony by Turner Ranch Properties, L.P. and Hillsboro Pitchfork Ranch, LLC was sent by first class mail, postage prepaid, or electronic mail to:

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