STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF PROPOSED AMENDMENTS TO SURFACE WATER QUALITY STANDARDS FOR SAN ISIDRO ARROYO AND TRIBUTARIES **WQCC No. 19-03(R)**

PRE-FILED TECHNICAL TESTIMONY OF MR. JOHN COCHRAN A WITNESS ON BEHALF OF PEABODY NATURAL RESOURCES COMPANY

I. Introduction To My Testimony

My name is John Cochran. I am offering testimony as an expert in support of Peabody Natural Resources Company's ("Peabody") Petition to Amend the Ground and Surface Water Protection Regulations. This testimony begins with an overview of my credentials. I will then go on to discuss the Lee Ranch Mine ("LRM"), including its geographic location, in order to orient the Water Quality Control Commission ("Commission") to the location of the proposed rulemaking, as well as the relevant permits the LRM holds. Following that overview, I will provide an introduction to New Mexico's surface water quality standards, I will discuss the reasons Peabody is seeking a change to the standards for particular segments of watercourses, and provide a brief introduction to Peabody's Use Attainability Analysis ("UAA"). Finally, I will provide a brief introduction of the other witnesses who will be providing testimony on behalf of Peabody in this proposed rulemaking. I provide this testimony in support of the proposed amendments to portions of the Commission's regulations located at 20.6.4.97(C)(1) NMAC.

II. Statement of My Qualifications and Relevant Experience

My resume is attached as Peabody Exhibit 2. I received a Bachelor of Science in Hydrology from the University of Arizona in June of 1981. Since that time, I have worked as a hydrologist and environmental professional in the coal mining industry. I have worked for more than thirty

(30) years with Peabody Energy and its affiliated companies. As a hydrologist and environmental professional, I have extensive experience with permitting and compliance activities under various federal and state environmental laws including, but not limited to, the Clean Water Act ("CWA") the Surface Mining Control and Reclamation Act ("SMCRA") and the Safe Drinking Water Act ("SDWA"). I have overseen permitting and compliance for several of Peabody's western coal mines, including both the Lee Ranch Mine and El Segundo Mine in New Mexico.

I have held numerous positions with Peabody Energy and its affiliates, including Manager Environmental Hydrology, a position I held from 2007 to May 2015. My responsibilities as an employee for Peabody in these capacities have included design and installation of hydrologic monitoring programs, development of Quality Assurance documents for field activities and laboratory analyses, and development of permitting documents under SMCRA, CWA and SDWA for Peabody's operations in several western states and on tribal lands. My responsibilities also included field work, such as conducting stream gauging in ephemeral and intermittent streams, surveying channel cross-sections and profiles, sampling stream bed material, and estimating peak flows of streams using field measurements. While employed by Peabody, I also provided assistance to the Lee Ranch Coal Company over several decades on several National Pollutant Discharge Elimination System ("NPDES") related issues, including renewal of NPDES permits for the El Segundo and Lee Ranch Mines. Additionally, I provided testimony on behalf of Lee Ranch Coal Company to the Commission for Triennial Reviews in 2009 and 2014.

In April 2015, I retired from full-time employment with Peabody and began working as a part-time consultant for the company, which is my current position. My consulting projects include review of NPDES permits and hydrologic assessments of reclaimed mines for release of bonds and liability under federal and state programs associated with SMCRA. These projects are

located in in Montana, Colorado and Arizona. Most recently, I provided advice and assistance conducting field observations of streams at the Lee Ranch Mine using New Mexico's Hydrology Protocol, which various witnesses will describe in detail.

III. Introduction to the Lee Ranch Mine

The Lee Ranch Mine is a surface coal mine located in McKinley County New Mexico. As shown on Peabody Exhibit 7, Figure 3, it is approximately twenty (20) miles north of Grants, New Mexico and east of the Continental Divide. Annual rainfall at the LRM ranges between ten (10) and twelve (12) inches per year, which results in a semi-arid climate. Streams in the vicinity of the LRM include Arroyo Tinaja, Mulatto Canyon, San Isidro Arroyo, Doctor Arroyo, and tributaries thereof.

At the time of initially permitting the LRM, the New Mexico Mining and Minerals Division ("MMD") characterized stream flow in the region, and within the LRM mine permit area, as ephemeral, flowing only in response to precipitation and channel bottoms above the water table year round. Evidence from MMD's evaluation and information contained in the LRM mine permit application suggest that ephemeral stream flow conditions were prevalent prior to mining and stream flow in the drainages within and adjacent to the LRM were ephemeral prior to mining.

IV. Introduction to Lee Ranch Mine Permits

The LRM operates in accordance with a number of permits, including permits under the federal Clean Water Act and New Mexico Water Quality Act, and the federal coal reclamation law known as the Surface Mining Control and Reclamation Act. These permits, most notably, include a National Pollution Discharge Elimination System ("NPDES") permit and a SMCRA permit. LRM's NPDES Permit No. NM0029581 regulates discharges of disturbed area runoff. The LRM NPDES permit is issued by the United States Environmental Protection Agency ("USEPA")

Region 6 under the CWA in consultation with the New Mexico Environmental Department ("NMED"). LRM's SMCRA permit, issued pursuant to New Mexico's delegated SMCRA program, is MMD Surface Mining Permit No. 19-2P, which regulates coal mining, reclamation and closure activities.

V. New Mexico Surface Water Quality Standards

The New Mexico Surface Water Quality Standards ("SWQS") that are the subject of Peabody's Petition were developed over a number of decades in consultation with the USEPA and the NMED. New Mexico's SWQS are based on the designated uses of surface water, including streams, pursuant to the CWA. The CWA presumes surface waters are fishable and swimmable ("Federal presumption") and that water quality standards established for both uses are generally appropriate. Accordingly, NMED applies standards based on these presumed uses and, in some cases, other use categories. Use categories and attendant SWQS established for streams depend on the classification of stream flow. Designated uses are created based on whether a stream flows year round (perennial), periodically (intermittent), or only in response to precipitation (ephemeral). The Federal presumption assumes unclassified waters in New Mexico to be either intermittent or perennial.

Waters that have been classified waters of the State have specific designations found at 20.6.4.101-899 NMAC. The remainder of the waters are unclassified and are considered to be either intermittent or perennial, therefore fishable and swimmable, and are found at 20.6.4.98 NMAC. The CWA allows for re-classifying stream segments assumed to be either intermittent or perennial (e.g., unclassified) as ephemeral based on a Use Attainability Analysis. New Mexico, recognizing the ability for re-classifying stream segments, has adopted a specific set of scientific procedures to determine the stream flow regime for unclassified streams. The procedures for re-

classifying stream segments are provided for in New Mexico's foundational methodology known as the Hydrology Protocol ("HP"). Results of implementing an approved work plan based on the Hydrology Protocol may be used to develop a UAA and propose re-classification of unclassified streams in the New Mexico SWQS.

The New Mexico SWQS influence both of the LRM permits I previously described. Effluent limits and monitoring requirements in the LRM's NPDES Permit are based in part on the SWQS established for the receiving streams. Additionally, New Mexico's SWQS must be met after mine closure and final reclamation of the LRM in order for MMD to approve release of liability and insurance bonds under the LRM surface mining permit issued by the MMD under its delegated SMCRA authority. Because of the CWA's Federal presumption, virtually all streams in the vicinity of the LRM permit area are not included in a classified Water Quality Standards segment (20.6.4.101-899 NMAC). Consequently, they are unclassified waters of the State (20.6.4.98 NMAC) and are considered to be either intermittent or perennial (fishable and swimmable).

In 2011, the NMED completed field work using the NMED SWQB's Hydrology Protocol on the Mulatto Canyon drainage and a portion of the San Isidro Arroyo within the LRM permit boundary. This action was part of a study of eighteen (18) unclassified non-perennial stream segments associated with several facilities (including, but not limited to, the LRM facility) that hold NPDES permits in New Mexico. The results of the study were incorporated into a UAA developed in June 2012. The June 2012 UAA indicated that the portion of Mulatto Canyon and the portion of the San Isidro Arroyo evaluated are ephemeral (NMED 2012). *See* Peabody Exhibit 8. NMED's 2012 UAA was limited in scope, however. It did not, for example, evaluate what might be the appropriate designated uses of the tributary drainages that report to Mulatto Canyon as well

as the tributaries within and adjacent to the LRM that report to Arroyo Tinaja, Doctor Arroyo, and San Isidro Arroyo. As a result, those drainages and tributaries within and adjacent to the LRM remain unclassified.

VI. Purpose of the Lee Ranch Mine Use Attainability Analysis

Because many drainages and tributaries within and adjacent to the LRM remain unclassified, they currently are subject to SWQS that are based on the CWA's presumption that the highest attainable use of the streams are based on the CWA's notion that they are fishable and swimmable. Put another way, the presumption assumes they can support human recreational uses as well as warm-water aquatic life that includes fish. That creates a dilemma for LRM under its SMCRA permit, because under that permit, at closure its bond release provisions require a determination by MMD that all "applicable" water quality standards will be met. The dilemma is avoidable, moreover, in fairness to the LRM.

The LRM believes establishing more precisely appropriate use categories for all stream segments that are within or adjacent to the LRM permit area is warranted. The LRM developed a UAA in order to assess all unclassified streams within the permit area in order to provide sufficient scientifically-based information based on the Hydrology Protocol to determine the flow regimes of all unclassified streams and the highest attainable uses; to provide an opportunity to overcome the Federal presumption that the unclassified waters are "fishable and swimmable;" to inform the development of proposed changes to designated uses and standards that apply to the streams in New Mexico's SWQS; to minimize issues with terms and conditions of the LRM NPDES permit; and to ensure clarification for MMD and NMED as to the appropriate standards that will need to be met following mine closure and final reclamation.

VII. Introduction to the Use Attainability Analysis' Development and Implementation

The LRM initiated the development of a work plan based on the SWQB's Hydrology Protocol in 2015. The final version was completed and implemented in 2017. The LRM consulted with both the NMED and USEPA while developing the work plan, and the plan incorporated the suggestions of both agencies. The plan was implemented over field work conducted in June 2017. During implementation of the work plan, NMED staff visited the LRM and reviewed the field procedures, including stream surveying, photo documentation and data recording. The LRM developed the UAA using office procedures and information collected in the field based on NMED's Hydrology Protocol. The UAA provides the foundation for the proposed changes to New Mexico's SWQS, which will be explained in much greater detail by Peabody witness James Boswell.

VIII. Introduction to Peabody's Additional Witnesses

In support of this proposed rulemaking, Peabody will be offering three additional witnesses to assist the Commission with understanding its proposed regulatory change. Peabody will present Mr. Chad Gaines as Peabody's next witness. Mr. Gaines will discuss the specific proposed changes to the New Mexico's SWQS, and will orient the Commission to the location of the arroyos, tributaries and drainages involved in this proposed rulemaking. Peabody will then present Mr. Jeff Olyphant as a witness in support of its proposed rule change. Mr. Olyphant will provide a hydrologic overview of the LRM site and the surrounding area, including the four main watersheds that Peabody evaluated using the Hydrology Protocol that are the subject of the UAA. Finally, Peabody will present Mr. James Boswell as a witness. Mr. Boswell will describe the UAA in great detail, including its development; agency input into, and approval of, a work plan; implementation of the work plan, including employment of New Mexico's Hydrology Protocol; and the UAA results and conclusions reached.

IX. Conclusion

The LRM ultimately asks the Commission to recognize changes to designated uses (and associated standards) for all streams, drainages and tributaries within and adjacent to the LRM based on valid, well-informed scientific data. Upon approval of the UAA and proposed changes to the SWQS, the LRM, NMED, and the USEPA can ensure that the appropriate designated uses and water quality standards are applied and maintained in these waterways.

This concludes my direct testimony in this matter.