

Kirkland Mining Project Update

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WELCOME TO PROJECT UPDATE!

Boral Resources—America’s leading manufacturer of fly ash products—has partnered with Kirkland Mining Company (KMC) to develop its natural pozzolan mining operation near Kirkland, Arizona, 90 miles northwest of Phoenix. As the partners prepare to commence operations, this newsletter will keep stakeholders fully informed about development plans at the Kirkland Mine.

ABOUT THE PROJECT

Boral Resources will excavate and grind natural pozzolan in a facility to be constructed on KMC private lands. Production is expected to ramp up to approximately 500,000 tons per year in accordance with the approved mining and reclamation plan for supplying markets surrounding Phoenix; Las Vegas, Nevada; and Southern California.

WHY NATURAL POZZOLANS?

Natural pozzolans are a critical component in modern concrete production. Natural pozzolans have mechanical and chemical properties that make them a valuable ingredient in a wide range of concrete products. Roads, bridges, buildings, concrete blocks, and other concrete products commonly contain natural pozzolans. Concrete made with natural pozzolans is stronger and more durable than concrete made with cement alone.

In addition to improving concrete quality, natural pozzolan use results in significant environmental benefits. Each ton of natural pozzolan used in concrete effectively eliminates the production of 0.8 to 1.0 tons of carbon dioxide emissions through direct displacement of the production of portland cement. Pozzolan use in the United States today annually reduces greenhouse gas emissions by more than 12 million tons.

WHY NOW?

For the past several decades, fly ash produced by coal-burning power plants has been the dominant pozzolan used in concrete production. But as these power plants close in response to environmental consideration and competition from other energy sources, demand for pozzolans from other sectors is increasing rapidly. The Kirkland high-quality natural pozzolan may be used as a direct substitute for fly ash.

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CONSTRUCTION COMMENCING THIS FALL

Construction at the Kirkland site is scheduled to commence this fall with site-clearing activities. All site clearing will be conducted in a manner to protect local wildlife corridors. Following site preparation, a light manufacturing facility that will include dryers and grinding equipment will be built at the site.

Because of the relatively soft and uniform nature of the native material, the site will operate like a quarry, where raw materials are recovered in layers or sections by bulldozer, excavator, scraper, and/or front-end loader.

SUPPORTING LOCAL ECONOMIES

Local hiring for the Kirkland project is expected to commence late in 2020. The project will create three to five management jobs and 10 to 15 family-wage positions in its early operation phase, with 15 to 25 similar jobs in later development.

While the operation will occur on federal mining claims, it will also support significant local purchases of materials, supplies, and services, generating additional sales for local businesses as well as both county and state sales tax revenues and a revenue stream from the transaction privilege tax.

KIRKLAND MINE HISTORY

Mining has occurred at the Kirkland location off and on since 1896 and has been used mostly for construction material. The original claimant was a stonemason, and many homes and buildings throughout the surrounding communities were built with stone from the Kirkland Mine.

1913

Great Western Cement Company leased the mine from the original claimant.

1920

Stone from the quarry was sent to Southern California, and many homes in Bel Air and Beverly Hills feature Kirkland stone, known back then as "tufa stone."

1958

The quarry provided dimensioned stone for construction of the Arizona State Capitol Building.

1979

Nicknamed the "Kitty Litter Mine," the quarry began shipping oil-absorbent material. In the late 1980s, the mine was closed and equipment removed. An estimated 45,000-ton stockpile from that operation has remained since.

1991

Kirkland Mining Company was developed to determine the "highest and best" use of the mineral deposit under the claims. Shortly thereafter, a 100,000-ton sales contract was executed with the U.S. Bureau of Land Management (BLM), including an accepted mining plan of operation and environmental assessment, for material intended to be used as oil absorbent in the cleanup of one of the largest oil spills in our country's history.

2012

Studies on the effectiveness of the Kirkland material as a natural pozzolan began.

2018

BLM approved a mining and reclamation plan to excavate 23 million tons of high-quality natural pozzolan from 88 acres within the mining claim block during a 40-year mine life.



A COMPREHENSIVE PERMITTING PROCESS

Proposed mining and reclamation plans were submitted to the BLM in 2017. BLM conducted an extensive environmental review, followed by a public scoping process.

A revised draft Environmental Assessment was completed and made available for public review from July 7 to September 4, 2018. After detailed analysis of the public comments, BLM finalized the environmental review process and published a decision approving the mining and reclamation plan on December 3, 2018. BLM accepted a reclamation bond on March 7, 2019, to cover the costs of full reclamation.

Since the BLM environmental review process and mine plan approval, KMC has acquired operational permits and approvals from state and county agencies for environmental controls for air, water, storm water, fuel storage, and construction of ancillary support facilities.



A COMMITMENT TO SAFETY AND ENVIRONMENTAL RESPONSIBILITY

Ongoing operations at the Kirkland site will be regulated by the U.S. Mine Safety and Health Administration (MSHA). KMC's project will be subject to the extensive MSHA regulations and at least two random, unannounced inspections each year. Ancillary facilities may also be inspected for safety by the Office of the State Mine Inspector.

As a business unit of Boral Limited—an international building and construction materials supplier—Boral Resources conducts a comprehensive program that encourages Boral personnel to identify potential hazards and unsafe practices, and provides tools and training to improve working conditions. Executive management reviews each facility's safety program annually. The annual safety review encompasses a thorough analysis of all safety-related documents, steering committee activities, documented improvements, and, when needed, injury reports. In addition to annual reviews, employees hold weekly safety meetings and managers meet monthly with the steering committees. All incidents are announced internally, nationwide, via correspondence from our corporate safety directors.

BLM will inspect the site for compliance with the approved mining and reclamation plan, and the Arizona Department of Environmental Quality periodically will inspect the site for compliance with environmental laws.

FILLING A NEED IN THE AMERICAN WEST

Kirkland high-quality natural pozzolans will play a crucial role in improving the quality of concrete products and infrastructure across several western states. Kirkland high-quality natural pozzolans feature unique chemistry and morphology (physical shape and makeup) that make their performance in concrete competitive with, and often better than, the highest-quality fly ashes and natural pozzolans currently in the market. Additionally, their distinct and special value in the marketplace, and Kirkland's relative proximity to several large end-use markets, make the site's development economically and logistically preferable to other natural pozzolan deposits located in very isolated areas.

ABOUT BORAL RESOURCES

Servicing 135 locations in 45 states, Boral Resources is the nation's leading marketer of fly ash products and natural pozzolans. The company operates an extensive distribution network for fly ash and related products and provides site services to power plants.

ABOUT KIRKLAND MINING COMPANY

A family-owned Arizona corporation, Kirkland Mining Company completed the stringent process for obtaining all necessary approvals to mine the high-quality natural pozzolan deposit near Kirkland, Arizona. In late 2019, the company joined forces with Boral Resources to proceed with mining and marketing of this unique deposit.



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