FACT SHEET
(Pursuant to Nevada Administrative Code (NAC) 445A.236)

Permittee Name: **Osgood Mining Company, LLC**

Project Name: **Granite Creek Mine Rapid Infiltration Basins (formerly Pinson Rapid Infiltration Basins)**

Permit Number: **NEV2005102**
Review Type/Year/Revision: **Renewal 2025, Fact Sheet Revision 00**

A. Location of Discharge

The Granite Creek Mine Rapid Infiltration Basins (RIBs) (formerly Pinson Rapid Infiltration Basins), Water Pollution Control Permit (WPCP) NEV2005102 are associated with the Granite Creek Mine Project (WPCP NEV2005103). The facility is located on the eastern flank of the Osgood Mountains, approximately 37 miles northeast of the town of Winnemucca in Humboldt County, Nevada. The project is located within the Getchell Gold Trend in the historic Potosi Mining District.

The facility is located on private land within Sections 28, 29, and 33 of Township 38N, Range 42E, Mount Diablo Baseline and Meridian. To access the Granite Creek Mine site, proceed 18 miles east of Winnemucca on Interstate 80 to Exit 194 in Golconda, State Route 789. Proceed approximately 12 miles northeast on State Route 789 to the end of the pavement and then continue northeast 5 miles to the Granite Creek site. The RIBs are located on the east side of the privately-owned Getchell Road; the Granite Creek Mine Project is located on the west side.

B. Description of Facility

The purpose of the Granite Creek Mine RIBs is to manage and reintroduce dewatering water from the Granite Creek Mine Project (WPCP NEV2005103) into the local groundwater basin. The Granite Creek Mine RIBs are located on property owned by Osgood Mining Company, LLC, the Gene and Jo Christison Family Trust and Michael C. Murphy. Osgood Mining Company is the owner, operator, and Permittee of the facility.

Activities at the Granite Creek mine site are covered under two separate WPCPs: WPCP NEV2005102 (RIBs) and WPCP NEV2005103 (underground mining). The WPCP for the WPCP NEV0089002 (Post Closure Monitoring – Pinson Mine circa 1980-1999) was terminated by the Division in September 2019.

This Permit was issued to the Permittee on 13 October 2005, and became effective on 28 October 2005. WPCP NEV2005102 permits the design, construction, operation, and closure of four RIBs (RIB1, RIB2, RIB3, and RIB4) to manage and reintroduce dewatering water from the Granite Creek Mine Project (WPCP NEV2005103) into the local groundwater basin. However, only RIB2 and RIB3 were completed and placed into

service.

In a letter dated 25 April 2006, Atna informed the Division that Pinson Mining Company (PMC) had assumed operation of the Pinson Exploration Project (Pinson) and that all activities initially authorized under WPCPs NEV2005102 and NEV2005103 be transferred from Atna to PMC. In a letter dated 28 April 2006, PMC informed the Nevada Division of Environmental Protection (Division) that as Pinson's new operator, they would continue to comply with the existing operating plans and Permit conditions previously approved by the Division or provide revised plans for review and approval, pursuant to NAC 445A.419(4).

As of May 2011, active mineral exploration operations at the Pinson Exploration Project (now Granite Creek Mine: WPCP NEV2005103) were suspended while plans for the mine going forward were under development. All contractors equipment had been removed from the Pinson site. Dewatering and infiltration, as permitted by WPCP NEV2005102, continued as required to prevent flooding of the underground workings.

In September 2011, PMC sold ownership of the facility and PMC interest in land on which the facility is located to Atna. The Division was notified of the change in ownership and the Permit documents were updated to reflect this in September 2011.

On 2 June 2016, the Division received notice from Osgood Mining Company, LLC (OMC) that it was assuming responsibility for the Project through an asset purchase of Atna Resources, Inc. The Permit was reissued as Revision 01 to OMC, the Permittee, on 20 July 2016.

In a letter dated 23 June 2021, OMC requested a name change from Pinson Mine Rapid Infiltration Basins to Granite Creek Mine Rapid Infiltration Basins.

History: The Potosi Mining District (also referred to as the Crystal, Osgood Range, Getchell, Kelly Creek, and Preble Mining Districts) was first discovered and organized around 1866. Deposits of gold, silver, tungsten, and manganese were identified within the district, and by the early 1900s the district had become a minor producer of gold. During World War II, the district became a significant producer of tungsten and manganese. The elimination of government contracts and falling metal prices after the war resulted in the cessation of most mining activity within the District. Renewed interest in gold and silver exploration within the District during the 1960s and 1970s lead to the discovery of several disseminated gold deposits, including the Pinson, Preble, and Getchell deposits.

Mining operations commenced at the Granite Creek Mine in May 1980. Ore was mined from 10 open pits and processed by both milling with a carbon-in-leach/carbon-in-pulp system and heap leaching. Milling commenced in January 1981 and ceased in February 1998. The mining operations were suspended on 28 January 1999. Operation of the heap leach facilities continued from 1982 until completion of residual leach operations in May

2000.

From 1997 through 2003, an extensive exploration program was conducted at the Granite Creek Mine to evaluate the deeper underground potential of the property. Several zones of gold mineralization, identified beyond the existing pit limits, were shown to contain gold of sufficient grade to warrant underground exploration and test mining.

In late summer 2004, Atna obtained rights from PMC to explore the Granite Creek Mine site, including several high-grade gold targets. Three of these target areas, the CX Deeps, Range Front, and Line Hole were the focus of Atna's initial exploration efforts to define mineral resources at Granite Creek Mine. Atna completed exploration project earn-in requirements in early 2006.

In April 2006, PMC exercised the right under terms of the agreement with Atna to "back into" the Project, resulting in transfer of WPCPs NEV2005102 and NEV2005103 to PMC. PMC suspended exploration and mine dewatering operations between the end of April 2006 and mid-July 2007, after which dewatering operations resumed and surface-based exploration drilling resumed. Underground exploration and development operations, and mine dewatering well construction, resumed in January 2008 and continued to 6 January 2009, at which time PMC notified Atna that they had met the requirements of the agreement and a 70 percent PMC/30 percent Atna Joint Venture was formed. In September 2011, PMC sold its position to Atna, making Atna the sole owner and operator of the facility and Permittee.

In June 2016, Osgood Mining Company, LLC acquired the Project through an asset purchase of Atna Resources, Inc. The "Pinson Mine" name was formally changed to "Granite Creek Mine" in August 2021.

Rapid Infiltration Basins: As decline development has progressed, dewatering of the declines has commenced and is expected to continue. A maximum dewatering rate of 6,900 gallons per minute (gpm) is projected with a maximum deep well dewatering rate of 6,500 gpm and a maximum dewatering rate from the decline drift sumps of 400 gpm. Approximately 15 million gallons of water were removed from the CX Pit Lake by September 2007, in conjunction with dewatering operations to facilitate CX Decline development, resulting in elimination of the lake. All dewatering water is currently discharged to the RIBs as authorized by WPCP NEV2005102.

Initial groundwater elevations were expected to drop at a rate between 30 and 60 feet per month. However, Project-to-date dewatering rates have not reached designed and permitted rates. As of March 2020, the current groundwater elevation in the CX area is approximately 4,570 feet amsl. Final groundwater elevation after dewatering is projected to be 3,690 feet amsl at the CX and Mag Pit locations. Because of the amount of dewatering required, at least four RIBs (refer to RIB Design, below) may be required and situated on the east side of Getchell Road.

Eight-inch or 12-inch diameter high-density polyethylene (HDPE) pipes convey dewatering water from each wellhead, and the decline if necessary, to an 18-inch diameter manifold adjacent to the Surge Pond. Water from the decline flows directly into the receiving launder of the Surge Pond. Valves at the junction with the manifold direct water from the five dewatering wells either to the receiving launder or directly to the RIBs. The Surge Pond is capable of handling 6,900 gpm while still allowing for the settling of sediments prior to discharge to the RIBs. Dewatering water is conveyed by gravity from the Surge Pond and manifold to the RIBs.

The RIBs are fed by two 12-inch diameter HDPE conveyance pipelines, which discharge onto rip-rap to prevent erosion of the base soil. A portion of these pipelines traverse Granite Creek and cross under Getchell Road (via culvert) prior to their discharge to the individual RIBs. The Division has required that the portion of the pipelines within the culvert be placed such that they do not interfere with the Granite Creek flow.

Surge Pond Design: Because of the presence of sediment in decline sump water, a Surge Pond will serve as a sedimentation basin for dewatering water removed from the declines. The original design submitted with the application called for an 8-foot deep (including 2 feet of freeboard), 60-mil HDPE-lined Surge Pond with a throughput capacity of 400 gpm. The design was changed to a concrete, four-bay configuration, with a total depth of 6 feet and a throughput capacity of 6,900 gpm in an engineering design change (EDC) that was approved by the Division on 9 September 2008.

The discharge outlet from the Surge Pond is a 12-inch diameter HDPE pipe that connects to the primary 12-inch diameter HDPE RIB distribution and discharge pipe. The invert of the discharge pipe is located at the base of the discharge launder and water exiting the pond is gravity fed to the RIB distribution pipe.

On 28 August 2012, the Division approved an EDC involving the relocation and redesign of the Surge Pond. The Surge Pond has not been constructed as of November 2020.

RIB Design: The RIBs are located on the east side of Getchell Road. The first two RIBs are approximately 200 feet from the centerline of the road. The second set will be approximately 60 feet from the centerline of the road. The RIBs have been designed to preclude any sediment or chemical contamination from entering into the RIBs as a result of the seasonal road maintenance activities (i.e., grading, dust suppression, and ice melting) and normal runoff. In addition, a simple V-ditch has been/will be constructed upgradient of each RIB to prevent any storm runoff flows from contributing fluid to the RIB. A nominal distance of about 750 feet will separate each RIB.

Field percolation tests were performed at eight sites, located approximately 200 feet apart, within the proposed infiltration basin area. Test results indicate that percolation rates range between 60 and 149 feet per day, with average percolation rates ranging between 78 and

125 feet per day.

Because of the variations in the underlying soils and geology, a very conservative percolation rate of 20 feet per day has been utilized for sizing the RIBs. The construction of four RIBs, approximately 540 feet by 245 feet by 10 feet deep, has been proposed, with two RIBs (RIB2 and RIB3) already constructed and placed into service. Two additional RIBs will be constructed later as needed.

A maximum dewatering rate of 6,900 gpm will require the installation of energy dissipation devices for each RIB until a sufficient volume of water is available in the RIB to dissipate energy. The dissipation devices consist of large (plus 1-foot diameter) stone rip-rap in the discharge area of each pipe.

Temporary Treatment Plant: In July 2023 the Permittee submitted an EDC to construct and operate a temporary water treatment plant in order to progress mining operations. OMC installed a new dewatering well (GCW-06) and found the water quality of the post development water had exceedances in Profile I values for arsenic and antimony. The EDC will allow OMC to construct and operate a pipeline and water treatment plant that would treat dewatering water from Well GCW-06 to meet Profile I water quality standards before discharging into the RIBs or into the Mag Pit Lake during upsets or planned outages (allowing the well to continue to run).

To remove arsenic and antimony Granite Creek has leased a mobile package-plant treatment system sold by Veolia Water Technologies (Veolia). The proposed treatment plant (except for the surge tank) will be located adjacent to the existing RIB discharge pipelines for Wells BPW3 and BPW5 on a new High-Density Polyethylene (HDPE) lined containment area. The surge tank will be located on a separate new HDPE lined containment area near the northwest entrance to the laydown area. To meet the flow rate requirement for the Veolia treatment system, additional water from BWP3 and/or BPW5 will be used to supplement the GCW-06 flows. This water will be blended in the surge tank before being supplied to the treatment plant.

HDPE pipelines will run along the access and haul roads, connecting the wells to the surge tank, temporary treatment plant, and discharge locations. Discharge pipelines will allow treated water to discharge to the RIBs, or a valved tee will allow water to be diverted to the Mag pit lake during system commissioning or plant shutdowns or upsets. Analysis of the worst-case discharge to the Mag Pit Lake scenario was conducted by Piteau Associates. Results suggest that “approximately double the proposed volume could be allowed to enter the lake without any significant change to the lake chemistry and while still maintaining the condition of a hydrogeologic sink”. The EDC was approved by the Division in August 2023.

On January 16th, 2025, the Division approved underground water ("GCCW") to be treated by the Water Treatment Plant (WTP) and subsequently discharged to RIBs. Analytical

results of this treated water met Profile I standards.

Groundwater Modeling: Water Management Consultants (WMC) performed two-dimensional numerical modeling of the groundwater system beneath a proposed RIB using SEEP/W software. The SEEP/W model was used to determine the approximate extent of mounding associated with the infiltration of dewatering water from the Granite Creek Mining Project. By determining the extent of mounding, upgradient and downgradient groundwater monitoring well and piezometer locations were determined, and the impacts of dewatering and infiltration on the privately owned Getchell Road, located upgradient of the RIBs, were evaluated.

Boundary conditions for the SEEP/W model were based on actual well drilling and exploratory borehole data from the Granite Creek Mine site. Groundwater elevation was fixed at 4,575 feet amsl at the western boundary and 4,450 feet amsl at the eastern boundary using constant head boundary conditions.

A majority of the model area is comprised of an alluvial fan consisting of sands and gravels with varying amounts of clays and fines. There is evidence to suggest that clay layers exist in the alluvium; consequently, two 10-foot clay lenses were added to the model at depths of 120 and 210 feet bgs along with the known layer of bedrock beneath the alluvium. Hydraulic conductivity of the alluvium was fixed at a conservative 20 feet per day.

WMC utilized a steady state model simulation to model the groundwater system prior to the discharge of water to the RIB. This simulation only considered recharge inflow into the system of 0.013 feet per year or about 5 gpm. The predictive "forward looking" simulations were conducted for a period of two years, utilizing a constant input of 6,900 gpm over a 47 step time period, which ranged from 180 minutes to 183 days.

The SEEP/W model predicted an asymmetrical groundwater mound beneath the RIB after two years of continuous discharge of water at 6,900 gpm. The leading wetting front was predicted to take 100 days to reach the groundwater elevation in the alluvial aquifer. The predicted mound extends approximately 380 feet downgradient and 360 feet upgradient from the edge of the RIBs. A similar shaped mound extending approximately half the distance is predicted to occur for a discharge rate of 3,450 gpm. Maximum mounding is expected to be about 250 feet bgs for both discharge rates.

Current Division policy requires at least one upgradient and two downgradient monitoring wells for each infiltration site, prior to the commencement of any infiltration operation. Division policy does, however, permit the use of existing wells on a case-by-case basis.

Based on the SEEP/W modeling results, WMC recommended that the Permittee install piezometers within the mound predicted by the 3,450 gpm scenario. The monitor wells will be located at positions at least 800 to 1,200 feet downgradient of the eastern most edge of each of the proposed RIBs. Where possible, existing monitoring wells are used as

upgradient monitoring well locations instead of drilling new wells specifically for the RIBs. WMC specifically recommended the use of existing groundwater monitoring well GMW-MW2A as the upgradient monitoring well for RIB1 and RIB2. In addition, WW-8 or GMW-MW8 was recommended to be substituted for the downgradient piezometer for RIB1, and GMW-HLMW-1 was proposed for one of the downgradient wells for RIB4. The Division approved existing groundwater monitoring well GMW-MW2A for use as the upgradient monitoring well (RMW2W) for RIB2 in correspondence dated 16 December 2005, and the Division approved GMW-HLMW-1 for use as one of the RIB4 downgradient groundwater monitoring wells (RMW4SE) in correspondence dated 27 October 2008.

As a Schedule of Compliance item, the Permittee is required to collect and provide the Division with baseline groundwater elevation and background groundwater quality data from those new and existing wells utilized for groundwater monitoring, prior to the commencement of any infiltration operations. As of 30 September 2009, the Permittee has submitted background water quality analysis results for the areas around RIB2, RIB3, and the southeast downgradient groundwater monitoring well for RIB4.

Future monitoring wells are to be completed in pre-existing groundwater and screened at the upper most zone of the aquifer. In addition, the Permittee is required to install all wells in locations which have been approved by the Division.

C. Proposed Determination

The Division has made the tentative determination to issue the renewed Permit.

D. Receiving Water Characteristics

Surface Water: The Granite Creek Mine RIBs Project is located in the Kelly Creek drainage area, approximately 11 miles north of the Humboldt River. Granite Creek, a tributary to Kelly Creek and ultimately the Humboldt River, is located adjacent to the Granite Creek site and usually flows ephemerally during the spring and summer in response to snow melt and following large precipitation events. The period of observable flow in Granite Creek ranges from a few weeks during dry years to several months during wet years. Surface water flow only occurs in the upper reaches of the creek. Prior to mining, Granite Creek normally dissipated at the alluvium-bedrock contact, immediately downgradient of the range front. The creek is currently diverted through a series of pipes and culverts around the southern rim of the CX Pit to the original stream channel downgradient of the open pit. Water in Granite Creek is of good quality with all constituent concentrations below the Surface Water Standards listed in NAC 445A.123, 445A.1236, and 445A.1444 for the Humboldt River. Monitoring of Granite Creek is performed as a Permit monitoring requirement in the Granite Creek Mine Project WPCP NEV2005103.

Groundwater: Continuous groundwater flow occurs in the alluvial deposits throughout the entire Kelly Creek Basin. Depth to alluvial groundwater ranges from 200 to 250 feet

bgs. Most of the regional groundwater flow along the eastern edge of the basin occurs within the alluvium. In the area of the CX Pit the alluvial deposits are thin and lie entirely above the water table. Alluvial groundwater quality is generally good due to the active recharge at the range front. Groundwater pH typically ranges between 8.0 and 8.4 standard units (SU). and the concentration of total dissolved solids (TDS) ranges from 100 to 230 mg/L. Natural background exceedances of Division Profile I reference values for iron, lead, and manganese routinely occur in the vicinity of the precious metal deposits.

Within the Kelly Creek Basin, groundwater in the bedrock is highly compartmentalized along the range front, which trends north-northwest to south-southeast. Associated cross-faults act to compartmentalize the groundwater flow and prevent any widespread regional flow. High-angle geologic structures appear to have formed partial barriers between some of the blocks or compartments, resulting in localized areas of continuous flow. Bedrock groundwater levels generally range between 4,527 and 4,721 feet amsl. Bedrock groundwater quality is more variable than the alluvial groundwater, attributable to the discontinuous nature of the groundwater flow. Bedrock groundwater pH typically ranges between 6.8 and 8.4 SU and the concentration of TDS ranges from 180 to 1,500 mg/L. Natural background exceedances of the Profile I reference values for arsenic, cadmium, iron, manganese, nickel, sulfate, and zinc routinely occur.

E. Proposed Limitations, Schedule of Compliance, Monitoring, Special Conditions

For Limitations, Schedule of Compliance, additional Monitoring, and Special Conditions see Section I of the Permit.

F. Rationale for Permit Requirements

The discharge to the facility must meet water quality standards established in the Permit to prevent degradation of waters of the State. Piezometer wells will be used to monitor and manage the elevation and extent of the infiltration mound. Upgradient and downgradient monitoring wells will be used to monitor groundwater quality. The facility must withstand flows which result from the 100-year, 24-hour event. Specific monitoring requirements can be found in the Water Pollution Control Permit.

G. Procedures for Public Comment

The Notice of the Division's intent to issue a Permit authorizing the facility to construct, operate and close, subject to the conditions contained within the Permit, is being published on the Division website: https://ndep.nv.gov/posts/category/land. The notice is being mailed to interested persons on the Bureau of Mining Regulation and Reclamation mailing list. Anyone wishing to comment on the proposed Permit can do so in writing within a period of 30 days following the date the public notice is posted to the Division website. The comment period can be extended at the discretion of the Administrator. All written comments received during the comment period will be retained and considered in the final

determination.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected intrastate agency, or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

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Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.403 through NAC 445A.406.

H. Federal Migratory Bird Treaty Act

Under the Federal Migratory Bird Treaty Act, 16 U.S. Code 701-718, it is unlawful to kill migratory birds without license or Permit, and no Permits are issued to take migratory birds using toxic ponds. The Federal list of migratory birds (50 Code of Federal Regulations 10, April 15, 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife Service (the Service) is authorized to enforce the prevention of migratory bird mortalities at ponds and tailings impoundments. Compliance with state Permits may not be adequate to ensure the protection of migratory birds for compliance with provisions of Federal statutes to protect wildlife.

Open waters attract migratory waterfowl and other avian species. High mortality rates of birds have resulted from contact with toxic ponds at operations utilizing toxic substances. The Service is aware of two approaches that are available to prevent migratory bird mortality: 1) physical isolation of toxic water bodies through barriers (covering with netting), and 2) chemical detoxification. These approaches may be facilitated by minimizing the extent of toxic water. Methods which attempt to make uncovered ponds unattractive to wildlife are not always effective. Contact the U.S. Fish and Wildlife Service at 4600 Kietzke Lane, Building C, Reno, Nevada 89502, (702) 784-5227, for additional information.

Prepared by: TJ Mohammed

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Revision 00: Renewal 2025 and boiler plate updates