

FACT SHEET

(Pursuant to Nevada Administrative Code (NAC) 445A.401)

Permittee Name: **Tom Carlin**

Project Name: **Lunker Hill Project**

Permit Number: **NEV2003106**

Review Type/Year/Revision: **New Permit/Renewal 2015, Fact Sheet Revision 00**

A. Location and General Description

Location: The Lunker Hill Project is located on private lands located within Section 1, Township 34 North, Range 34 East, Mount Diablo Baseline and Meridian, approximately 15 miles north-northwest of Mill City in Pershing County, Nevada. To access the Project site, travel 29 miles west from Winnemucca on Interstate Highway 80 to the Mill City – Tungsten exit #149; turn right and travel approximately seven (7) miles northwest via a non-maintained asphalt road toward the site of Tungsten (the Nevada Massachusetts, aka post-1980, Springer Mine). Do not enter the Springer Mine property but turn right onto the adjacent dirt road and travel 1.5 miles east to the junction with a dirt road leading due north. Turn left onto the north road toward the historic Keystone mine site and travel approximately five (5) miles to the Lunker Hill Project site.

General Description: The Project is a physical separation facility in accordance with NAC 445A.414 and with a permitted maximum operating capacity of 36,500 tons per year. Gold, primarily in the form of nuggets, is extracted from material excavated on site using a trommel and sluice box arrangement. No chemicals are approved for use in the extraction process and make-up water is recycled. The facility is designed and constructed to operate and close without any discharge or release from the fluid management system that would result in degradation of waters of the State. As approved, the total area of surface disturbance will be less than five (5) acres. The facility operates intermittently due to weather and water availability constraints.

B. Synopsis

The Lunker Hill Project was originally permitted by James D. Malone and the first issued Permit became effective 03 September 2003. The private property on which the permitted facility is located was sold by Mr. Malone's widow, Patricia L. Malone, to 'The Tom Carlin Trust Dated 28 April 2005', in late 2008. The Permit was formally transferred to Mr. Tom Carlin (Permittee) effective 06 April 2009.

The Lunker Hill facility is located on private land situated between the historic Wheelbarrow and Keystone mine sites on the northeast flank of the Eugene Mountains. A private residence is located upgradient from the processing facility.



A single upgradient well, the 'Residence Well', provides potable water to the residence and is approved for use as make-up water for the processing facility, if needed.

The physical separation facility is designed to process approximately 15 tons of material per hour. Site prevailing weather conditions allow operation for approximately 160 days per year. The facility is permitted to process a maximum of 36,500 tons of material per year.

Chemicals are not approved for use in the recovery process. Material from the proposed mining area has been characterized with a 34-element ICP quantitative (Aqua Regia digestion) analysis. No anomalous quantities of deleterious elements have been identified in the material to be processed.

A minor modification to the Permit was approved in March 2010, for construction of a new water storage system, comprised of up to seven (7) steel water storage tanks, to replace the original make-up water storage pond that also served for the original Permittee's domestic use and fish farming activities. The minor modification also approved previously identified upgradient Three Fingers Spring, Nugget Gulch Spring, and the Keystone Mine, in addition to the 'Residence Well', as make-up water sources. The system is designed to decrease the loss of make-up water compared to soil-lined ponds.

The water storage system is comprised of steel Tank #1 (24-foot diameter by five (5) feet high, approximately 17,000 gallon capacity) that collects water pumped 400 feet through a 1-inch diameter poly-vinyl chloride (PVC) surface pipeline from Nugget Gulch Spring. Water from Tank #1 can be pumped 300 feet through a 1-inch diameter PVC surface pipeline to steel Tank #3 (12-foot diameter by 12-foot high, approximately 10,000 gallons). Steel tank #3 is also used to collect water pumped approximately 1,800 feet through a 2-inch diameter PVC surface pipeline from the Keystone Mine. Water collected in Tank #3 can be pumped approximately 400 feet through a 2-inch diameter PVC pipeline to a group of four (4) steel holding tanks. Each tank measures 24 feet in diameter by 10 feet high (approximately 35,000 gallon capacity) with a reinforced concrete base. Only three (3) tanks will be constructed initially with approval given for later construction of a fourth. Steel Tank #2, which measures 24 feet in diameter by 5 feet high (approximately 17,000 gallons), is the final tank in the system and collects water conveyed 400 feet through a 1-inch diameter PVC pipeline from Three Fingers Spring for conveyance to the holding tanks through a 600-foot-long, 1-inch diameter PVC pipeline. Make-up water is pumped from the holding tanks into the processing circuit as required to supplement clarified process water recycled from the last of three collection ponds.

Mining consists of identifying potential ore-bearing material with a prospector's metal detector. The material is then excavated with a loader or bulldozer and



hauled by dump truck to an ore stockpile or fed directly into the ore bin. A grizzly, mounted on the ore bin, classifies the material and rejects plus 4-inch diameter rock from the ore. The minus 4-inch diameter material is conveyed along a feed belt to an 18-foot long by 4-foot diameter barrel trommel where water is first added to the process. The trommel classifies and rejects plus 5/8-inch material from the feed stream and the retained minus 5/8-inch material is passed through a sluice. Water and suspended fine waste from the sluice are discharged into the first of three settling ponds. A 150 kilowatt diesel-electric plant powers the entire processing facility.

The three (3) earthen settling ponds used in the process are constructed below-grade. A minor amount of bentonite clay, from previous operations, remains in the bottom of the ponds to retard infiltration. The settling ponds are numbered '1', '2', and '3', with number '1' located nearest the process plant. Each pond drains by gravity to the next downgradient pond through 8-inch diameter high density polyethylene (HDPE) pipes placed approximately two (2) feet below the pond crest. Three (3) pipes connect Pond '1' to Pond '2' and two (2) pipes connect Pond '2' to Pond '3'. Settling pond dimensions, for Ponds '1', '2', and '3', respectively, are: 75 feet long by 100 feet wide by 10 feet deep; 75 feet long by 70 feet wide by four (4) feet deep; and 150 feet long by 65 feet wide by six (6) feet deep. Clarified process water is recycled back into the process stream from Pond '3' with a diesel pump.

Reject material from the approved process is used as road gravel on the Project access roads or returned to the mined areas. All gold and precious metal products recovered in the process are sold in their natural form. Refining or further processing of recovered product is not conducted on the site.

C. Receiving Water Characteristics

The only surface water in the Project area is ephemeral and intermittent flow along Nugget Wash and Three Fingers Wash, in response to storm events, and only limited seasonal flow, generally in the period March to June, from a spring located in each wash. The process facility is situated on the crest of a ridge between the two washes. Due to the very limited watershed area, the facility will not be affected by storm runoff. Three Fingers Spring, Nugget Gulch Spring, Keystone Mine, and the 'Residence Well', are all located upgradient of the mining and processing areas.

The 'Residence Well' was drilled to a depth of 500 feet below ground surface (bgs). At the time of well construction, the static groundwater level was at approximately 300 feet bgs.

Background groundwater samples were collected from the 'Residence Well' and Keystone Mine and analyzed for the Division Profile I constituents. The analyses



report exceedances of Profile I reference values for iron, magnesium, manganese, sulfate, and total dissolved solids. Specific maximum concentration levels for these constituents are incorporated into the Permit.

D. 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 within the Permit, is being sent to the **Lovelock Review-Miner** for publication. 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 of public notice. 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.

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.

E. Proposed Determination

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

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

See Section I of the Permit.

G. Rationale for Permit Requirements

The facility is located in an area where annual evaporation is greater than annual precipitation. Therefore, it must operate under a standard of performance which authorizes no discharge(s) except for those accumulations resulting from a storm event beyond that required by design for containment.

The primary method for identification of the potential for the degradation of waters of the State will be placed on required routine analysis of fresh makeup



water and process water, in addition to visual monitoring to verify that the ponds do not overflow. Specific monitoring requirements can be found in the Water Pollution Control Permit.

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, 15 April 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife 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 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 (e.g., by covering with netting), and 2) chemical detoxification. These approaches may be facilitated by minimizing the extent of the 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 1340 Financial Boulevard, Suite 234, Reno, Nevada 89502-7147, (775) 861-6300, for additional information.

Prepared by: Joe Sawyer
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