THE STATE of ALASKA
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DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File: 1513.38.009

March 18, 2019

Re: Decision Document: AK Juneau Rock Dump (a.k.a. Gastineau Mine)
No Further Action Documentation

Site Description and Background

The AK Juneau Rock Dump (a.k.a. Gastineau Mine) site, hereafter referred to as Rock Dump, is roughly ½ mile southeast of downtown Juneau and extends from tidewater on the eastern shore of Gastineau Channel to 2,800 feet. The material consists of unprocessed waste rock and tailings from the gold extraction process. The Rock Dump is about 60-70 acres and the maximum depth of contamination is 30 feet (ft.) below ground surface (bgs). There is an estimated 55 million tons of waste rock and tailings on site. According to the 1989 PA, the groundwater below the dump is saline. The Rock Dump was formerly associated with the Gastineau Mine and was the location of the waste rock dump. The Gastineau gold mine was operated by the Alaska Juneau Gold Mining Company (AJ Company) from about 1901 to 1951. During its operation, 55 million tons of ore were processed. The mill site for the mine was located about a half mile west and 1,000 ft. above the shore. Waste ore from the mill was transported to the shore of the Gastineau Channel and dumped on the intertidal mud flat, covering an area of 60 to 70 acres with a maximum depth of 30 ft. bgs. From historical documents, it appears as though no processing (cyanide or mercury) was done.

After 1951, the site remained in AJ Company ownership except for the southern portion which was owned by the State of Alaska and contained the city's sewage treatment plant. During the 1960's, Union Oil of California (Union Oil) acquired the AJ Company's property and built an oil storage facility. In 1978, Union Oil sold a large piece of the Rock Dump to Alaska Juneau Forest Industries Inc. In the early 1980's Alaska Juneau Forest Industries Inc. leased parts of the Rock Dump to Taku Mining Company who reprocessed the tailings for trace gold extraction. The central portion of the Rock Dump was transferred to National Bank of California in 1986 due to foreclosure.

The site, now used as an industrial complex has been subdivided into multiple parcels with multiple owners. It is zoned waterfront commercial industrial. Currently there is a tank farm, numerous businesses associated with cruise ship operations, and other non-cruise ship related businesses. Approximately 85% of the site is capped with concrete and/or asphalt. There is also a large cruise ship dock – the AJ Dock which receives many cruise ships each summer.

The tidelands are owned by the City and Borough of Juneau and were acquired pre-statehood. Gastineau Channel is not currently an impaired water body according to the ADEC Water Quality Map. There are two surface water quality monitoring locations near the site according to the ADEC Division of Water Alaska's

Water Quality Map online. Monitoring location ID JN21 is located north of the site and JN24 is located in front of the site. Both are located in Gastineau Channel and are sampled periodically for copper, nickel, and zinc. Neither had any values above 1.5 micrograms per liter (µg/L). The City of Juneau is served by municipal drinking water.

Characterization and Cleanup Activities

Characterization and cleanup activities conducted under the regulatory authority of the Contaminated Sites Program began in 1987. These activities are described below. In 1987, the Bank of California contracted Golder Associates (Golder) to do an environmental audit investigation at the Rock Dump. This work is documented in the *Report for Environmental Audit Investigation of AJ Mine Rock Dump, Juneau, Alaska*, submitted to Bank of California, and dated 1987 (this report is not available in the Juneau ADEC office – this information was transferred from the Site Investigation of Selected Mine Sites near Juneau, Alaska, prepared by Versar Inc. and dated January 4, 1989). Golder collected surface soil samples (10) and groundwater samples from five groundwater monitoring wells. The soil samples were analyzed for arsenic, cadmium, chromium, copper, mercury, lead, selenium, and zinc. The average concentration for each of these metals was: arsenic at 27 milligrams per kilogram (mg/kg), cadmium at 6.5 mg/kg, chromium at 51 mg/kg, copper at 61 mg/kg, mercury at less than 0.25 mg/kg, lead at 160 mg/kg, selenium was less than 1.0 mg/kg, and zinc was 380 mg/kg. None of the metals were at concentrations above ADEC cleanup levels or background.

The groundwater monitoring wells were installed (the depths undocumented) and analyzed for the same metals as the soil samples and the results indicated that the groundwater in one well contained arsenic up to 0.017 milligrams per liter (mg/L), cadmium up to 0.0021 mg/L, and lead up to 0.20 mg/L. The groundwater met ADEC cleanup levels with the exception of lead; the ADEC groundwater cleanup level for lead is 0.015 mg/L. The other wells had metals at lower concentrations many below the laboratory's detection limits. The elevated results could have been a result of localized "hot spots" of metals, infiltration of marine water, or a release from the wastewater treatment ponds located on the south side of the dump. The results suggested that there are localized "hot spots" of metals, but there is not a significant amount of contamination throughout the entire Juneau Rock Dump area and the groundwater may contribute to minimal migration of metals to the site to Gastineau Channel. In addition, the groundwater encountered may have marine or brackish water influence due to the site's location atop imported fill material in a saltwater environment.

The City and Borough of Juneau and Alaska Light and Power contracted Versar Inc. to do a site investigation at the Rock Dump and other sites in Juneau. This work is documented in the report *Site Investigation of Selected Mine Sites near Juneau, Alaska*, prepared by Versar Inc. and dated January 4, 1989. During the investigation, two soil samples were taken from the northwest and southeast ends of the site. The exact depths weren't reported. The sample from the southeast end was taken from a 10 ft. high cut which exposed a number of layers; the composite sample collected was from a number of layers. The soil was homogenous. The samples were analyzed for lead, zinc, arsenic, and mercury. The results were 86-160 mg/kg for lead, 230-440 mg/kg for zinc, 36-44 mg/kg for arsenic, and less than 0.11 mg/kg for mercury. These results were below the most stringent ADEC cleanup levels with the exception of arsenic. However, Alaskan soils have naturally high arsenic and the values observed are within the high range of background for Alaska. The report also noted that the material at the Rock Dump is not hazardous waste and that no further action was recommended.

A literature review assessment of the Rock Dump was conducted in September 1988 on behalf of the ADEC and is documented in the *Preliminary Assessment Report for the Alaska Juneau Dump Juneau, Alaska*, prepared by Ecology and Environment for the ADEC, dated March 1989. A site inspection followed the

preliminary assessment and is documented in the *Site Inspection Report for Alaska Juneau Dump Juneau, Alaska*, prepared by Ecology and Environment and dated June 1990. The goal of the work was to evaluate actual or potential environmental or public health hazards relative to other sites across the nation for the purpose of identifying remedial action priorities and the potential for the site to be included on the Environmental Protection Agency (EPA) National Priorities List.
Six surface soil samples were collected from the site and an additional sample was collected from off-site as part of the effort. These were analyzed for EPA Target Compound List (TCL) metals. The samples were collected as composites. Samples one, two, and four were collected from the intertidal zone, samples three and five were collected from suspected windblown areas, and sample six was a duplicate of sample five. Soil sample seven was collected off-site for a background sample. Particulate samples could not be collected from the three high volume air samplers that were deployed due to the lack of wind during the effort.

The results of the analyses found that no metals exceeded ADEC cleanup levels or background for the area. However, when the samples were compared to the EPA screening level of three times the background sample value, the following elements were found to be above the screening level: arsenic, barium, cadmium, calcium, lead, potassium, sodium, and zinc. The lead concentrations were all less than or equal to 210 mg/kg which is below the cleanup level of 400 mg/kg. The report concluded that the results were comparable with past reports and that the site does not require emergency action. However, the report noted that the tailings/waste rock should be evaluated with regards to their effect on humans through ingestion and inhalation and that particle releases may be in violation of ambient air standards. Currently, the site is approximately 85% paved, limiting dust generation concerns. The waste rock/tailings in the intertidal zone has likely naturally attenuated over the one-hundred years that the material has been in place, and sediment deposition is likely continuing to occur, thereby burying the material.

According to a letter from the Environmental Protection Agency to the ADEC dated November 7, 2014, regarding EPA Site Identification Number AKD981767320, the Thane Mine Dump site was "excluded" as an eligible response site under Comprehensive Environmental Response and Cleanup Act (CERLCA) and no further action will be taken.

Based on a review of the environmental record, ADEC has determined that residual contaminant concentrations are suitable for commercial/industrial land use and the subject property is zoned waterfront commercial industrial, thereby preventing residential use.

This no further action determination does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that contaminants at this site may pose an unacceptable risk to human health, safety, welfare or to the environment.

Sincerely,

Danielle Duncan
Project Manager