EPA releases Bristol Bay Assessment describing potential impacts to salmon and water from copper, gold mining

Agency launched study after requests for action to protect Bristol Bay watershed from large-scale mining

CONTACT: Hanady Kader, EPA Public Affairs, 206-553-0454, kader.hanady@epa.gov

(Seattle—Jan. 15, 2014) The U.S. Environmental Protection Agency today released its final Bristol Bay Assessment describing potential impacts to salmon and ecological resources from proposed large-scale copper and gold mining in Bristol Bay, Alaska. The report, titled "An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska," concludes that large-scale mining in the Bristol Bay watershed poses risks to salmon and Alaska Native cultures. Bristol Bay supports the largest sockeye salmon fishery in the world, producing nearly 50 percent of the world's wild sockeye salmon with runs averaging 37.5 million fish each year.

"Over three years, EPA compiled the best, most current science on the Bristol Bay watershed to understand how large-scale mining could impact salmon and water in this unique area of unparalleled natural resources," said Dennis McLerran, Regional Administrator for EPA Region 10. "Our report concludes that large-scale mining poses risks to salmon and the tribal communities that have depended on them for thousands of years. The assessment is a technical resource for governments, tribes and the public as we consider how to address the challenges of large-scale mining and ecological protection in the Bristol Bay watershed."

To assess potential mining impacts to salmon resources, EPA considered realistic mine scenarios based on a preliminary plan that was published by Northern Dynasty Minerals Ltd. and submitted to the U.S. Securities and Exchange Commission. EPA also considered mining industry references and consulted mining experts. Numerous risks associated with large-scale mining are detailed in the assessment:

Risks from Routine Operation

Mine Footprint: Depending on the size of the mine, EPA estimates 24 to 94 miles of salmon-supporting streams and 1,300 to 5,350 acres of wetlands, ponds, and lakes would be destroyed. EPA estimates an additional 9 to 33 miles of salmon-supporting streams would experience altered streamflows likely to affect ecosystem structure and function.

Waste and Wastewater Management: Extensive quantities of mine waste, leachates, and wastewater would have to be collected, stored, treated and managed during mining and long after mining concludes. Consistent with the recent record of similar mines operating in the United States, polluted water from the mine site could enter streams through uncollected leachate or runoff, in spite of modern mining practices. Under routine operations, EPA estimates adverse direct and indirect effects on fish in 13 to 51 miles of streams.

Risks from Accidents and Failures

Wastewater Treatment Plant: Short and long-term water collection and treatment failures are possible. Depending on the size of the mine, EPA estimates adverse direct and indirect effects on fish in 48 to 62 miles of streams under a wastewater treatment failure scenario.

Transportation Corridor: A transportation corridor to Cook Inlet would cross wetlands and approximately 64 streams and rivers in the Kvichak River watershed, 55 of which are known or likely to

support salmon. Culvert failures, runoff, and spills of chemicals would put salmon spawning areas in and near Iliamna Lake at risk.

Pipeline: Consistent with the recent record of petroleum pipelines and of similar mines operating in North and South America, pipeline failures along the transportation corridor could release toxic copper concentrate or diesel fuel into salmon-supporting streams or wetlands.

Tailings Dam: Failure of a tailings storage facility dam that released only a partial volume of the stored tailings would result in catastrophic effects on fishery resources.

The assessment found that the Bristol Bay ecosystem generated $480 million in economic activity in 2009 and provided employment for over 14,000 full and part-time workers. The region supports all five species of Pacific salmon found in North America: sockeye, coho, Chinook, chum and pink. In addition, it is home to more than 20 other fish species, 190 bird species, and more than 40 terrestrial mammal species, including bears, moose and caribou.

In 2010, several Bristol Bay Alaska Native tribes requested that EPA take action under the Clean Water Act to protect the Bristol Bay watershed and salmon resources from development of the proposed Pebble Mine, a copper, gold and molybdenum mining venture backed by Northern Dynasty Minerals Ltd. Other tribes asked EPA to wait for a mine permitting process to begin before taking action on the potential environmental issues Pebble Mine presents.

Before responding to these requests, EPA identified a need for a scientific assessment to better inform the agency and others. EPA and other scientists with expertise in Alaska fisheries, mining, geochemistry, anthropology, risk assessment, and other disciplines reviewed information compiled by federal resource agencies, tribes, the mining industry, the State of Alaska, and scientific institutions from around the world. EPA focused on the Nushagak and Kvichak River watersheds, which support approximately half of the Bristol Bay sockeye salmon runs.

EPA maintained an open public process, reviewing and considering all comments and scientific data submitted during two separate public comment periods. The agency received approximately 233,000 comments on the first draft of the assessment and 890,000 comments on the second draft. EPA held eight public meetings attended by approximately 2,000 people. EPA consulted with federally recognized tribal governments and Alaska Native Claims Settlement Act village and regional corporations.

The study has been independently peer reviewed for its scientific quality by 12 scientists with expertise in mine engineering, salmon fisheries biology, aquatic ecology, aquatic toxicology, hydrology, wildlife ecology, and Alaska Native cultures.

The agency reviewed information about the copper deposit at the Pebble site and used data submitted by Northern Dynasty Minerals Ltd. to the U.S. Securities and Exchange Commission, including the document titled "Preliminary Assessment of the Pebble Project, Southwest, Alaska," which provides detailed descriptions of three mine development cases representing 25, 45 and 78 years of open pit mining. The 45-year development scenario was presented as the reference case in the Northern Dynasty report.

Over the course of the assessment, EPA met with tribes, Alaska Native corporations, mining company representatives, state and local governments, tribal councils, fishing industry representatives, jewelry companies, seafood processors, restaurant owners, chefs, conservation organizations, members of the faith community, and members of Congress.

EPA produced the report with its authority to perform scientific assessments under Clean Water Act section 104. As a scientific report, this study does not recommend policy or regulatory decisions.

For more information on the EPA Bristol Bay Assessment, visit: http://www.epa.gov/bristolbay

Follow @EPAnorthwest on Twitter! https://twitter.com/EPAnorthwest