Nevada Irrigation District

Staff Report

TO: Board of Directors

FROM: Greg Jones, Assistant General Manager

DATE: July 23, 2025

SUBJECT: **Surplus Property Designation – Mercury Remediation System**

ADMINISTRATION

RECOMMENDATION:
Adopt a Resolution declaring the mercury remediation equipment as surplus property.

BACKGROUND:
Historical gold mining operations in Sierra Nevada have contributed to ambient mercury concentrations in river and lake sediment. Elemental mercury (quicksilver, Hg(0)) was imported to the region during the historical gold mining era (1849 to circa 1950) to facilitate the extraction of gold from ore materials, and much of the elemental mercury was released to the environment and has since impacted watersheds throughout the Sierra.

Combie Reservoir is on the California Regional Water Quality Control Board's Clean Water Act 303(d) List as impaired for mercury. The reservoir also has a site-specific fish consumption advisory for mercury issued by the California Office of Environmental Health Hazard Assessment.

The reservoir's original storage capacity in 1928 was 5,555 acre-feet, and until 2003, NID routinely performed maintenance dredging to maintain the water storage capacity through a third-party mining lease. Sediment removal was halted in 2003 because the maintenance dredging activities resulted in re-suspension of mercury-impacted sediment, which resulted in a CWA violation. The cessation of maintenance dredging has impacted the reservoir's storage capacity ever since.

After 2003, NID began identifying unique and novel opportunities to remove sediment from Combie while also addressing water quality concerns. The Combie Reservoir Sediment and Mercury Removal Project (Project) was born. The Project was a pilot water supply maintenance project that was intended to safely remove sediment from Combie Reservoir while piloting an innovative mercury and potentially gold recovery process.

Starting in 2009, NID pilot tested a preliminary centrifuge for mercury removal at Combie Reservoir. With some success, the District sought to scale-up the program and began researching for a commercially viable product to meet the volumes of sediment and mercury intended to be removed.

On 4/19/2013, the District entered into a “lease-to-own” agreement with Pegasus Earth Sensing Corp. for the lease of a mercury remediation machine system. NID leased the equipment for two years, with a provision of purchasing the equipment at the end of the lease period. More tests were conducted during the lease term and on April 22, 2015, the District approved the purchase of the Pegasus Mercury Remediation System for $595,000.

In early 2018 NID successfully was awarded a $5.5M funding grant from the CA Department of Water Resources to implement the project.

In late 2017, NID purchased a 30” commercial-sized concentrator for $225,123 which was added to the Pegasus system and utilized for the project. The concentrator expense was reimbursed to NID through the state grant program.

The KC-CDMR30 Concentrator was identified as a critical component of the Project to process larger volumes of sediment. In the summers of 2018 – 2019, NID implemented the use of the Pegasus machine in tandem with a concentrator for the Project. The Project included both wet and dry methods for sediment removal. Dry mechanical excavation (during low-water conditions) and suction dredging (during high-water conditions) were performed in combination with the centrifugal mercury extraction process.

The Project demonstrated that sediment can be removed from the mercury-impaired Combie Reservoir using both wet and dry methods in a manner that is compliant with regulations and protective of water quality and the environment. An estimated 47,872 cubic yards of sediment, were removed from Combie Reservoir, mostly from excavation in dry lakebed conditions. The sediment removed during the Project was shallow and relatively fine-grained and did not contain significant elemental mercury. Neither the fine sediment deposits nor the coarse sediment deposits contained free gold at concentrations that would make gold recovery economically feasible.

Although the results of the Project were mixed, the use of the mercury remediation system was not a necessary component when safely removing sediment from a mercury impaired reservoir in dry lakebed conditions.

Due to the cost of operating the system, the relative small amount of mercury (or gold) recovered, and the size of the overall equipment, staff believes that it will not utilize the machine in the future and seeks authorization to sell the system.

BUDGETARY IMPACT:
The current depreciated book value of the Pegasus system is $237,714 and the depreciated book value of the concentrator is $218,091. Proceeds from the sale of the system will be allocated to NID's general fund.

Attachments: (1)

- Resolution 2025-38 - Declaration of Surplus Equipment and Directing the Sale of Such Equipment for Not Less Than Fair Market Value

RESOLUTION NO. 2025-38

OF THE BOARD OF DIRECTORS OF THE NEVADA IRRIGATION DISTRICT

DECLARATION OF SURPLUS EQUIPMENT AND DIRECTING THE SALE OF SUCH SURPLUS EQUIPMENT FOR NOT LESS THAN FAIR MARKET VALUE

WHEREAS, After 2003 NID began identifying unique and novel opportunities to remove sediment from Combie Reservoir while also addressing water quality concerns. The Combie Reservoir Sediment and Mercury Removal Project (Project) was born; and

WHEREAS, The Project was a pilot water supply maintenance project that was intended to safely remove sediment from Combie Reservoir while piloting an innovative mercury and potentially gold recovery process; and

WHEREAS, On April 22, 2015, the District approved the purchase of the Pegasus Mercury Remediation System for $595,000; and

WHEREAS, In late 2017, NID purchased a 30" commercial-sized concentrator for $225,123 which was added to the Pegasus system and utilized for the project; and

WHEREAS, The Project removed an estimated 47,872 cubic yards of sediment from Combie Reservoir, mostly from excavation in dry lakebed conditions; and

WHEREAS, Although the results of the Project were mixed, the use of the mercury remediation system was not a necessary component when safely removing sediment from a mercury impaired reservoir in dry lakebed condition; and

WHEREAS, Due to the cost of operating the system, the relative small amount of mercury (or gold) recovered, and the size of the overall system, staff does not believe that it will utilize the machine in the future and seeks authorization to surplus and sell the system; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of Nevada Irrigation District, as follows:

1. The above recitals are true and correct and are incorporated herein as findings of the Board of Directors.

2. NID declares that the sale of this equipment will directly further the express purpose of agency work or operations; and

3. Authorize the General Manager or designee to sell the Pegasus mercury remediation system and concentrator, and to execute appropriate agreements and documents to implement this Resolution.

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PASSED AND ADOPTED by the Board of Directors of the Nevada Irrigation District at a regular meeting held on the 23rd day of July 2025 by the following vote:

AYES:	Directors:
NOES:	Directors:
ABSENT:	Directors:
ABSTAINS:	Directors:

_____
President of the Board of Directors

Attest:

_____
Secretary to the Board of Directors