NORTON BAY
WATERSHED COUNCIL

Watershed Characterization
for the Nome & Snake River Watersheds

Report Submitted By:

Norton Bay Watershed Council
February 28, 2025

This project has been funded in part by the U.S. Environmental Protection Agency (EPA) under assistance agreement number 00J84644 to the Department of Environmental Conservation (DEC) through the Alaska Clean Water Actions (ACWA) Program. The content of this document does not necessarily reflect the view and policies of the funders, nor do the funders endorse trade names or recommend the use of commercial products mentioned in this document.

INDEX

LIST OF TABLES

LIST OF FIGURES AND MAPS

I. OVERVIEW

The Inupiat and Central Yupik communities within the Nome and Snake River watersheds rely on a subsistence economy as they have since time immemorial. In recent years, changes caused by a warming climate have impacted the subsistence resources these communities rely upon, including diminishing sea ice in the Bering Strait and increased freshwater temperatures at a rate no one thought possible just a decade ago.

Using a holistic assessment process, the Norton Bay Watershed Council (NBWC) has gathered information on the water quality and land uses of specific rivers and streams within the Nome and Snake River watersheds, including Anvil, Dry, and Glacier Creeks, and Nome and Snake Rivers. (See Figure 1). By gathering existing water quality data, noting climate change impacts, and evaluating current land uses, NBWC has compiled a body of knowledge to inform the existing Norton Sound Climate Action Plan and the Norton Bay Watershed Ocean and Coastal Management Plan and develop future water quality protection-based plans and risk assessments in accordance with Alaska Department of Environmental Conservation Watershed Planning Guidance.

Data and information gathered include inventorying all available water quality background information for the selected waterbodies, the development of a Geographic Information System (GIS) Geodatabase demonstrating spatial relationships with current land use, permitted activities, potential pollution sources, topographic contours, surface water hydrology, and historical and current water quality monitoring locations, and an annotated bibliography.

Dry Creek wetland area with abandoned dredge in background.
Photo taken on August 15, 2023

II. HISTORY OF MINING IN THE NOME AND SNAKE RIVER WATERSHEDS

Gold was first discovered sparkling in the beach sands along Norton Sound by a trio of Swedish explorers, although the native Inupiat, who used the area as a seasonal camp, would have been aware of the soft metal long before.

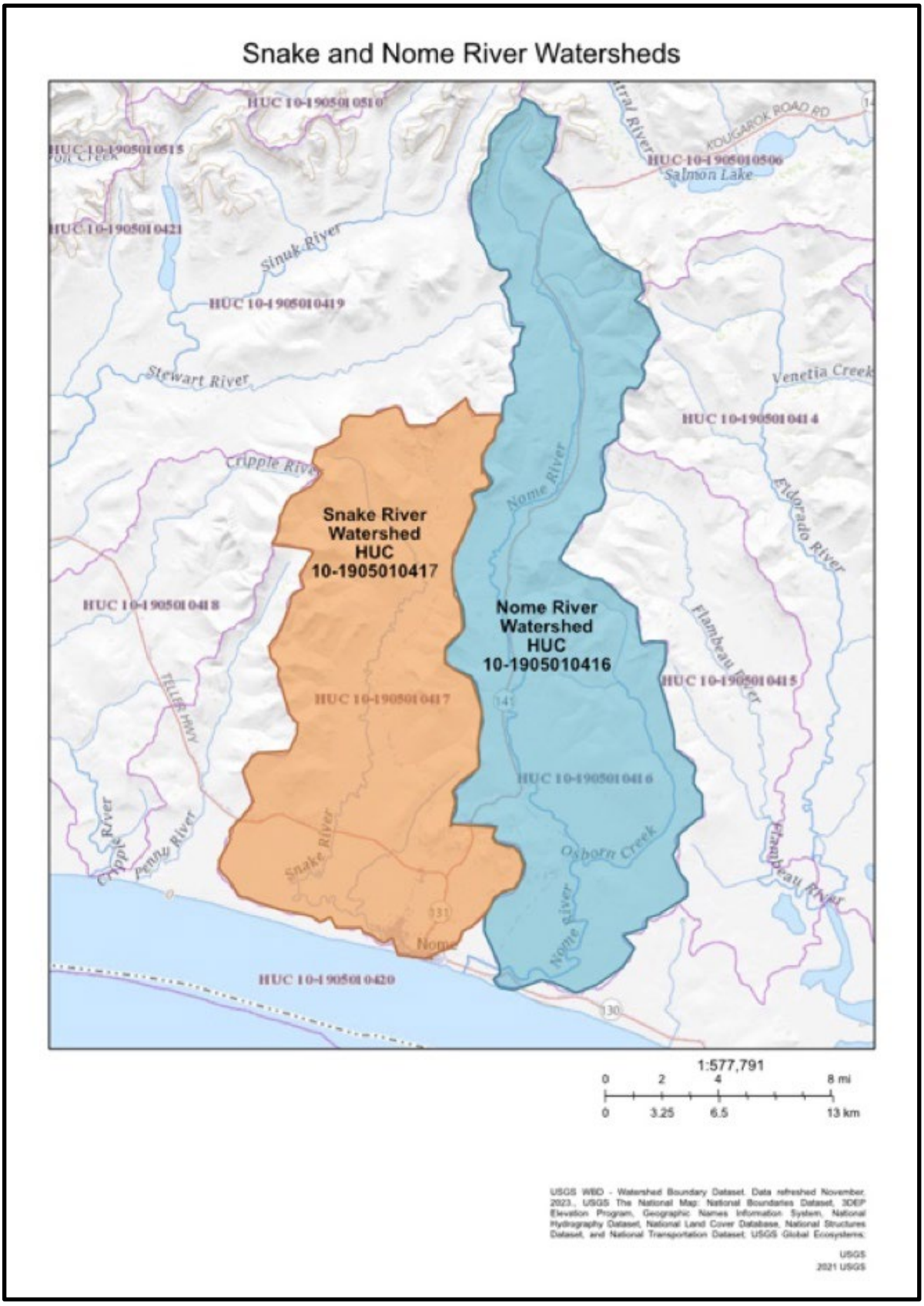
Listed among the United States National Historic Landmarks, The Cape Nome Mining District Discovery Sites includes the Discovery Claim on Anvil Creek, E.O. Lindblom Placer Claim, No. 1 on Snow Creek, and Nome Beach. Will Loerpabel, Nome Gold Rush merchant, reported, "The first important discovery of placer gold was in March 1898, on Melsing Creek, and shortly thereafter on nearby Ophir Creek, near the site of Council, about 60 miles northeast from Nome." (Elmquist, 2020).

But it was the discovery of gold at Anvil Creek, just north of the current town of Nome, Alaska, that ignited a stampede by boat to the western coast of the Bering Sea. The timing was significant, as Canada's Klondike gold rush along the Yukon, discovered in 1896, was quickly staked, with no good claims remaining. Within months, as many as 20,000 miners and merchants had established a tent city on the sandy shores of the southern Seward Peninsula. Anvil Creek became one of the richest placer gold streams ever discovered in Alaska, with miners harvesting more than two million dollars in gold during the first two years. Within that time, a narrow-gauge railroad and telephone line were built between Nome to Anvil Creek. The City of Nome was officially founded in 1901.

Mining in the region's rivers and streams entailed placer mining which uses water from the streams to wash away lighter materials like sand and gravel, leaving behind the heavier gold flour, grains, and small pebbles. Sluice boxes and later bucket dredges and high-pressure hydraulics were used to process ore at a much faster rate, and with much greater environmental damage.

As with the Klondike, once the easy gold was gone, the miners pulled up stakes and headed on to the next big strike. By 1909 the town's population had dwindles to around 2,600, with miners and merchants departing by steam ship up the Yukon and Tanana Rivers to the silty banks of the China River and the new boom town of Fairbanks.

Mining continues to this day in the Nome region. Suction dredge operators in dry suits dive into the bone cold waters of the Sound to suck up sand and gravel searching for gold.


Snake and Nome River Watersheds
HUC 10-1905010510
HUC 10-1905010515
HUC 10-1905010421
HUC 10-1905010419
HUC 10-1905010506
Salmon Lake
KOUGAROK ROAD RD
Sinuk River
Stewart River
Venetia Creek
HUC 10-1905010414
Crippple River
Nome River
Eldorado River
Snake River Watershed HUC 10-1905010417
Nome River Watershed HUC 10-1905010416
HUC 10-1905010418
HUC 10-1905010417
HUC 10-1905010415
Flambeau River
TELLER HWY
HUC 10-1905010416
Osborn Creek
Cripple River
Penny River
Snake River
Nome
HUC 10-1905010420
1:577,791
0 2 4 8 mi
0 3.25 6.5 13 km
USGS WBD - Watershed Boundary Dataset. Data refreshed November, 2023., USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems.
USGS
2021 USGS

III. STAKEHOLDER ENGAGEMENT

a. List of Key Stakeholders

Key Stakeholders for the Watershed Characterization for the Nome & Snake River Watersheds Project are at the local, tribal, state, and federal level or have land ownership or other interests related to the Nome area project watersheds, including:

1) Federally recognized Tribal entities, including the Native Villages of King Island, Savoonga, and Council;
2) Alaska villages and regional Native corporations, including the Bering Sea Native Corporation and the King Island, Savoonga, and Council Village Corporations;
3) Federal agencies such as the U.S. Bureau of Land Management (BLM), USGS, and National Park Service (NPS);
4) Tribal Non-Governmental Organizations such as NBWC, Kawerak, Inc., Nome Eskimo Community and the Norton Sound Health Corporation;
5) State Agencies including Alaska Department of Environmental Conservation (DEC), Alaska Department of Natural Resources (DNR), Alaska Department of Fish and Game (ADF&G);
6) The University of Alaska, and conservation and non-governmental organizations (NGOs)
7) Landowners and businesses in these watersheds.

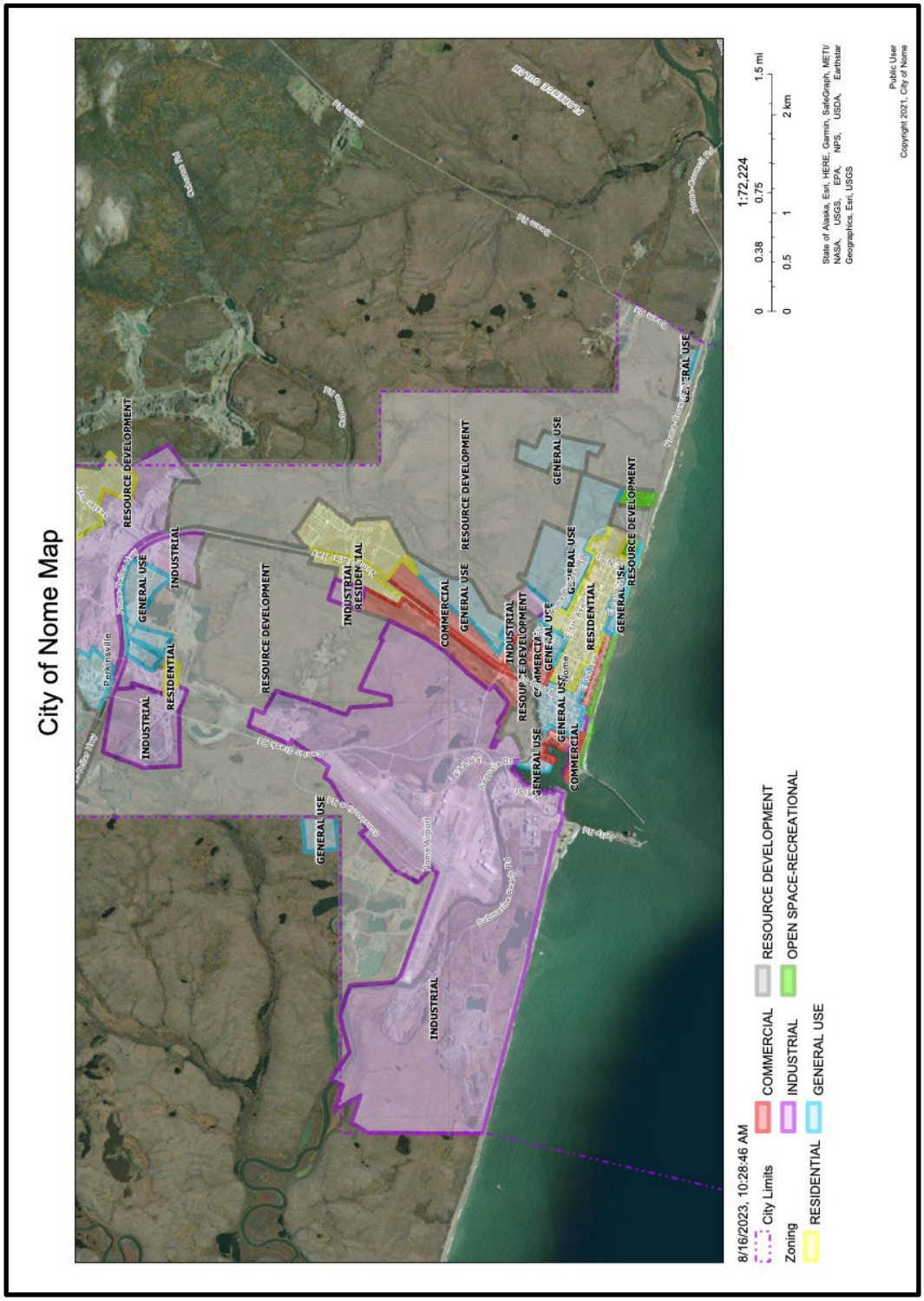
b. Engagement Plan

Overview

The Norton Bay Watershed Council's Board of Directors (BOD), staff, and consultants built and engaged with a diverse group of stakeholders at the local, state, and federal level or having land ownership within the project watersheds, including Federally recognized Tribal entities, U.S. Bureau of Land Management (BLM), National Park Service (NPS), Alaska villages and regional Native corporations, Kawerak, Inc., Alaska Department of Natural Resources (ADNR), Alaska Department of Fish and Game (ADF&G), University of Alaska, and other tribal, conservation and non-governmental organizations (NGOs) to complete the Watershed Characterization.

Outreach Goals

NBWC developed a Stakeholder Outreach Plan that includes a process for engaging in outreach including informational materials using NBWC's existing website and social media network to reach out to new stakeholders and BOD members and collaborate with different groups or partners (e.g., partnership activities, public meetings, newsletters, marketing materials, or recruitment of new members).



Messaging/Salient Points

This Watershed Characterization identifies outreach points, watershed management, watershed characterization, and the need for additional data and information, and guides future management and water quality protection goals.

Table 1. Stakeholder Identification/Stakeholder List:

NBWC DEC ACWA List of Stakeholders,
Snake Rivers Watershed Characterization Project

	Tribal	Federal	State
Kawerak Inc.	X		
King Island Native Corporation	X		
Native Village of Solomon	X		
Native Village of Council	X		
Nome Eskimo Community	X		
Norton Sound Health Corporation	X		
Bering Straits Native Corporation	X		
Alaska Department of Environmental Conservation			X
Alaska Department of Natural Resources			X
Alaska Department of Fish & Game			X
U.S. Bureau of Land Management		X	
National Park Service		X	
U.S. Geological Survey		X	
U.S. Fish and Wildlife Service		X	
University of Alaska			
Salmon State			
The Northern Center			

The NBWC requested participation by stakeholders including Kawerak Inc., regional Federally recognized Tribal entities, Norton Sound Health Corporation, Bering Straits Native Corporation, ADNR, ADF&G, BLM, NPS, University of Alaska, and other tribal/conservation NGO's.

Stakeholder Engagement:

NBWC utilized e-mails, phone conversations and Board meetings to conduct stakeholder engagements with the organizations listed in Table 1. NBWC's website was also used to help voice the mission, values, and goals of the NBWC's Watershed Characterization for the Nome & Snake River Watersheds project.

NBWC also reached out to numerous federal, state, and tribal stakeholders that have conducted work and research within the waterbodies pertaining to this project.

Outreach Activities

With further funding, the logical next steps are:

1) Conduct outreach activities to establish broad-based, diverse collaborative stakeholder membership, including the creation of informational materials using

NBWC's existing website, social media, and networking. Outreach will be accomplished through partnership activities; stakeholder meetings; social media: Website, Facebook, Instagram, X; radio; Community Calendar announcements for recruitment of new members; a booth at Salmon Fest; NBWC blog articles, letters to the editor, and op-eds.

Specifically, engage in the following:

- Ensure inclusiveness amid the stakeholders we're outreaching to by networking with entities such as Kawerak's Eskimo Heritage Program and the Katirvik Cultural Center. Consult with the Chair of the Alaska Native Language Preservation and Advisory Council for the inclusion of potential translator services.
- Conduct stakeholder outreach through Twitter, phone calls, webpage updates, Outlook calendar invites, event, public meetings, etc.
- Develop Instagram or Facebook posts for Stakeholder meetings that all parties can share;
- Create a Facebook post one week before the meeting with a reminder on the day of the meeting. Determine agenda items and provide an agenda two days before a meeting via e-mail and website.
- Provide outreach support to the Native Villages of King Island and Council, Nome Eskimo Community, Regional Native Corporations, Kawerak, Inc as well as the village corporations and allotment owners or trust groups.

2) Conduct in-person meetings in Nome or Anchorage to identify local stakeholders' priority needs and potential project partnerships.

3) Invite representatives of the above tribal organizations and other tribes in the region to sit on the Watershed Council so that each tribe will have representation on the Council and, in turn, a voice in this project.

4) Request participation by major Stakeholders such as Kawerak, Inc., Norton Sound Health Corporation, Regional Native Corporations, and village corporations, inviting them to participate in the collaborative.

5) Once tribal organizations' partners are engaged, expand upon the initial efforts to identify stakeholders and request their participation, including members of the general public, through additional outreach strategies as discussed above.

Anvil Creek culverts at its intersection with Teller Road.
Photo taken on August 3, 2023

Residential development area seen from Anvil Creek.
Photo taken on August 3, 2023

Table 2. Outreach Objectives and Matric

Objective	Metric	How Measured?	Frequency?	When?
Goal 1: Conduct outreach activities for diverse stakeholder membership				
Create informational materials using NBWC's existing website, social media, and networking at events like Salmon Fest	10% of individuals contacted seek additional information	Evaluate in terms of how many people take material, click on links, or open postings	Ongoing effort, conducted until outreach goals are met per project timetable	Monitor quarterly
Goal 2: Conduct in-person meetings in Nome and other locations				
Commit to project team meetings with an agenda, project scope and objectives	One in-person meeting per year in Nome and in Anchorage, and two Zoom meetings	Evaluate in terms of how many people participate in one, two, three, or all meetings	Quarterly or as needed based on evaluation of core work team	Monitor quarterly
Goal 3: Invite tribal representatives to sit on the NBWC				
Ensuring all tribes have a voice on the Watershed Council	Each tribe has representation on the council	Willingness of tribes to engage through attendance and input	Encourage tribal representatives as needed. Full representation is the goal.	Monitor quarterly
Goal 4: Request participation by major regional stakeholders				
Kawerak, Norton Sound Health Corporation, Bering Straits Regional Corporation, and regional village corporations participate in stakeholder meetings	By end of project, all major regional stakeholders participate in at least one meeting	Track initial and ongoing participation of major regional stakeholders	Before each meeting, through phone and social media, encourage major stakeholder representation	Monitor quarterly
Goal 5: Expand efforts to include additional stakeholders through additional outreach				
Seek additional technical experts who provide expertise for the project.	Willing area experts are identified and commit to the project	Technical experts provide input on sections of the project.	As needed, with bi-weekly or monthly check-ins to keep project on schedule	Monitor quarterly

Outreach Measures of Success

The Watershed Characterization for Nome & Snake River Watersheds characterization will be used to provide strategic guidance for the protection and sustainable management of water and subsistence resources by inventorying existing information, identifying data gaps, evaluating current land and water use, identify pollutants of concern, and conducting a source inventory and description of nonpoint source pollutants of the Nome and Snake River watersheds. This Stakeholder Outreach Plan is key to the success of the project by providing a structure for an inclusive and collaboratively coproduced Final Report and Annotated Bibliography.

c. Final Engagement Materials

Engagement was conducted primarily by outreaching to partners and stakeholders through e-mails and follow-up phone calls. Additionally, the project page on the NBWC website was used for outreach. Additionally, we provided monthly updates about the goals and progress of this project with tribes who have representation on the NBWC board, including Elim, Teller, Unalakleet, St. Michael, Shaktoolik, Golovan, Brevig Mission, and Mary's Igloo.

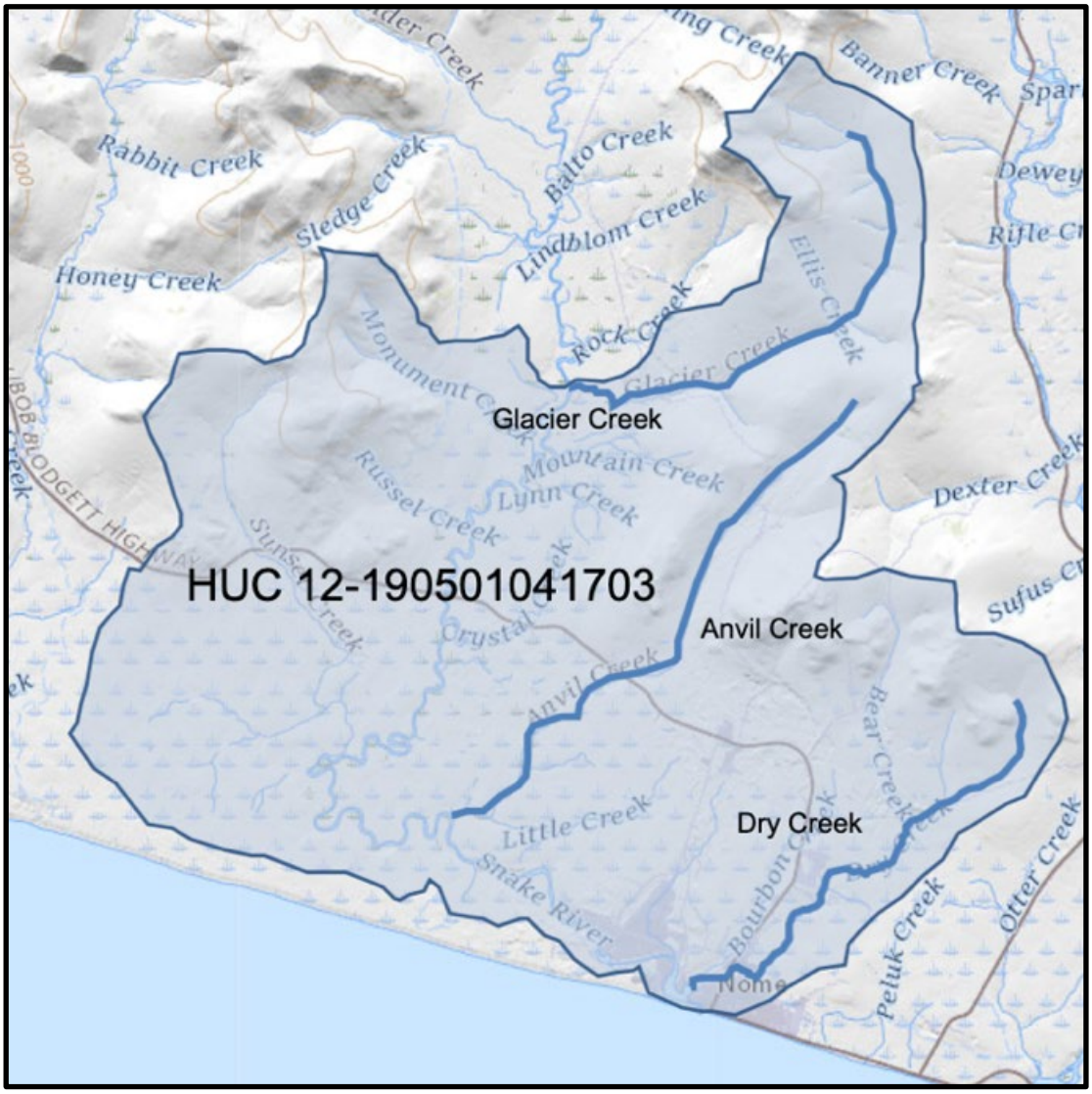
Snake River from the Teller Road, north-west of Nome, August 3, 2025

IV. NONPOINT SOURCE POLLUTION INVESTIGATION

a. Description of Nonpoint Source Pollutants

NPS pollution occurs when rainfall, snowmelt, or irrigation water run over land or percolate through the ground, transporting pollutants to surface or groundwater sources (EPA 2010). Pollutants are harmful materials that are introduced into the environment. Waterbodies are subject to potential NPS pollutants that are a result of current and future mining, oil and gas, road development, and other potential contaminant sources and land uses. NPS pollutants contaminate water through mining, oil and gas exploration, landfills, septic tanks, storm runoff, commercial and residential development, road construction, marinas, boating, silviculture, and many other sources. NPS pollution is cumulative, making it difficult to track and monitor. The EPA identifies NPS pollution as the leading source of water quality problems in the country. Typical NPS pollutants in these watersheds include sediment, turbidity, etc. This is in contrast to point-source pollution, which comes from one centralized, traceable location like an effluent pipe, an oil tanker spill, a factory smokestack.

NBWC conducted a detailed literature search of numerous databases on water quality information to identify potential sources of NPS. These databases include the State of Alaska's Department of Natural Resources Geological & Geophysical Surveys publications, the Alaska Resources Library & Information Services (ARLIS), Google Scholar, Academic Search Premier, the University of Alaska Anchorage (UAA) Scenarios Network for Alaska and Arctic Planning (SNAP) program, the Alaska Climate Research Center (ACRC), the Alaska Climate Science Center (ACSC), the University of Alaska Fairbanks Alaska and Polar Regions Collections & Archives (APRCA), Tribal entities, local organizations, and other relevant sources.



Tributaries to the Snake River

Dry Creek Culvert.
Photo taken August 3, 2023

Dry Creek ATV Crossing. Photo taken August 15, 2023

b. Past Nonpoint Source Pollution in the Nome and Snake River Watersheds:

The Nome Teller Highway site characterization report cited small spills, burned area, and signs of contamination in shops and throughout the property. Possible contaminates are diesel fuel, hydraulic and lube gear oils, grease, transformer oil, PCBs, and lead. In the Nome area, suction dredges that process placer gold are an example of authorized users who can discharge into the watershed. Mercury from historical mine operations or other pollutants, such as lead, may be encountered, however, the permittee must take measures to remove the wastewater from streams and not release it back into the waters of the U.S. A permittee must comply with effluent standards and prohibitions established under 33 U.S. C. 1317(a) for toxic pollutants.

The Nome Gold Rush at the turn of the 20th Century transformed the region. Mining continues to be a way of life in Nome to this day. According to Alaska Department of Health and Social Services, processed tailings that contain mercury and concentrated arsenic have been left behind and continue to be detected in contaminated soils throughout portions of the watershed. Sampling has detected mercury and arsenic in the soil, and mercury, arsenic, and methylmercury in sediments from the nearby Dry Creek, an anadromous stream and a seasonally flooded wetland.

Leaking underground storage tanks can release petroleum over many decades. These contaminants spread during times of flooding. In 2022, a powerful storm known as Typhoon Merbok struck western Alaska. Typhoon Merbok is the result of a changing climate. Historically, the Norton Sound/Bering Sea region has not supported tropical storm formations, but due to climate change, these powerful storms with high winds and floods are likely part of the future. In Nome and in surrounding villages along the coast, Typhon Merbok ripped houses off foundations, destroyed sections of road, scattered boats and vehicles, wrecked subsistence fish camps, and exposed sections of permafrost that will now quickly erode. The impacts of NPS pollution easily spread during such weather events.

c. Current Nonpoint Source Pollution:

Current water quality threats for the Nome and Snake River Watersheds include erosion and sedimentation, NPS pollution from historic and active mining, oil fuel spills, chemical contamination, bacterial contamination and nutrient discharge, stormwater runoff, and impacts from climate change, such as warmer water temperatures and reduced flow. According to the Alaska DEC, there are currently 28 active contaminated sites that are undergoing cleanup, while 35 sites have recently completed cleanup of active sites. These sites include storage of petroleum hydrocarbons in underground and aboveground storage tanks, waste disposal activities, former mining mercury arsenic sites, and PFAS contamination.

d. Potential Nonpoint Source Pollution

Proposed Nome Deep Water Port and impacts of near-shore Dredging

Nearshore dredging can significantly impact fish populations through habitat loss, increased turbidity, direct physical damage through hydraulic washing, disruption of food sources, noise pollution, and the potential release of contaminants, all of which can lead to reduced fish abundance and diversity in the affected area.

Perfluoroalkyl and Polyfluoroalkyl Substances

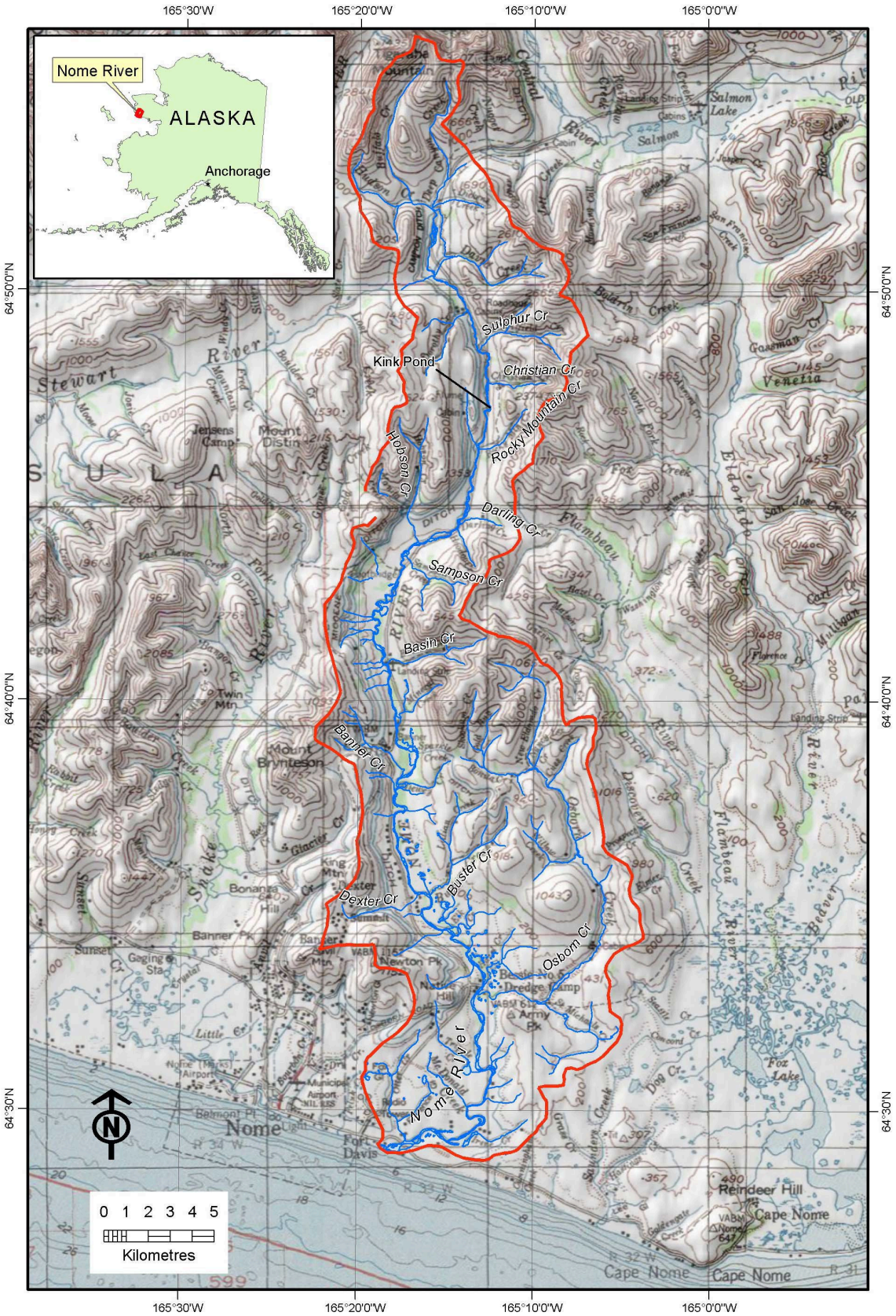
In an effort to reduce human exposure to perfluoroalkyl and polyfluoroalkyl substances (PFAS) and other emerging contaminants in drinking water and to help address discharges through wastewater and, potentially, nonpoint sources, DEC has a website offering information about PFAS substances and key DEC contacts.

The Nome Airport has been provided with new regulations calling for them to switch to non-PFAS industrial firefighting foams will help protect residents from the harms caused by these dangerous chemicals.

Nome River Fish Camps. Photo taken on August 15, 2023

Glacier Creek Reservoir
Photo taken August 3, 2023

Glacier Creek Reclamation Site
Photo taken August 3, 2023



Overview of the Nome River Showing Sub-Watersheds

Table 3. ADEC Active Contaminated Sites Search: Nome, Alaska

Hazard ID	Site Name	Location	Status	Lat/Lon	File ID
293	Alaska Gold Company New Gold House	New Gold House, Nome, AK, 99762	Active	64.503760 -165.402348	400.38.028
575	Former West Nome Tank Farm	Near Snake River & Nome, AK 99762	Active	64.503277 -165.430256	400.38.002
1148	Nome ADOT&PF Yard Site "J" DERP/5	Nome, AK 99762	Active	64.536116 165.400682	400.38.001 G
1150	Nome Field Site "R"/DERP/Site 3 O	Center Creek Road (near), Nome, AK 99762	Active	64.501100 -165.406400	400.38.001 K
1154	Nome Tank Site "E"/DERP/Site 6	N of Nome, near Nome-Beltz School, Nome, AK 99762	Active	64.548537 -165.399412	400.38.001L
2344	FAA Nome Station	Nome, AK, 99762	Active	64.507416 -165.43.8587	400.38.008
2940	MarkAir – Nome	Nome Airport Lease Lot 2, Block 22, Nome, AK 99762	Active	64.507473 -165.440016	400.38.005
3970	Alaska Gold Snake River Property	Port Road, Nome, AK 99762	Active	64.502233 -165.429823	400.38.033
4043	East Nome Harbor Upgrade	East Side of Nome Harbor, Turning Basin, Nome, AK 99762	Active	64.500889 -165.417914	400.38.034
4207	East Front Street Contamination – Nome	623 Front Street, Nome, AK 99762	Active	64.496000 -165.394900	400.38.037
4292	Nome Elementary School	1057 5th Avenue, Corner of 6th Avenue and K Street, Nome, AK 99762	Active	64.498137 -165.384075	400.38.038
25216	Former Alaska Gold Power Plant	North of East 6th Avenue, South of Steadman Street	Active	64.503270 -165.400788	400.38.040, 400.57.002
25380	Evergreen Helicopters / Former MarkAIR	Nome Airport, Block 3, Lot 1, Nome, AK 99762	Active	64.507481 -165.444545	400.38.042
25447	Nome Mini Convention Center	409 River Street, Nome, AK 99762	Active	64.498290 -165.413547	400.38.043

25952	ADOC Anvil Mountain Correctional Center	1810 Center Creek Road, Nome, AK, 99762	Active	64.538158 -165.413661	400.38.049
26104	Port Road Industrial Subdivision Lot 7	Port Road Industrial Subdivision Lot 7, Nome, AK 99762	Active	64.504290 -165.428510	400.38.050
26445	FAA Nome Radio Range	W of Beam Road; NE of Nome Council Road	Active	64.499.239 -165.318675	400.38.051
26446	FAA Nome CTS	W of Beam Road; N of Nome Council Road	Active	64.503592 -165.328369	400.38.052
26825	ADOT & PF* Nome Airport Former Truck Fill Stand	Nome Airport, W of Center Creek Road, and New Center Creek Road	Active	64.523588 -165.421892	400.38.053
26950	Crowley Nome South Tank Farm	Block 24, Lots 1-3, Nome Townsite, Nome, AK	Active	64.500.593 -165.418027	400.38.054
26984	Former Alaska Gold Power Plant Shop	North of East 6th; South of Steadman St, Nome	Active	64.502570 -165.400879	400.38.055
27154	Nome Airport Sitewide PFAS	227 Airport Road, Nome, AK, 99762	Active	64.510641 -165.444655	400.38.056
27201	USPS Nome Annex UST 1	516 Port Road, Nome, AK 99762	Active	64.506208 -165.431382	400.26.015
27232	Nome State Office Building	103 East Front Street, Nome, AK 99762	Active	64.496591 -165.402691	400.38.057
277885	Nome Teller Highway Mine	2871 Nome Teller Highway, Nome, AK	Active	64.539348 -165.395105	400.38.059
27868	ARNG Nome AAOF	Army National Guard Nome Army Aviation Operating Facility	Active	64.516180 -165.425905	400.38.060
27880	FAA Nome Building 200/302 & 303	FAA Building 200/302 & 303, Nome, AK	Active	64.513300 -165.431219	400.38.008
27899	Bonanza Express Tank 4	400 Bering Street, Nome, AK, 99762	Active	64.500404 -165.409465	400.26.016

Notes:
Alaska Department of Environmental Conservation, Contaminated Sites Search – https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/Search
*Alaska Department of Transportation & Public Facilities (ADOT)
*Department of Environmental Restoration Program (DERP)

Table 4. ADEC Completed Cleanup of Contaminated Sites Search: Nome, Alaska

Hazard ID	Site Name	Location	Status	Lat/Lon	File ID
293	Alaska Commercial Prop.	636 Front Street, Nome, AK 99762	Cleanup Complete	64.49.7175 - 165.406600	400.38.009
808	Nome Barrel Dump (Lee's Camp)	Nome – Council Highway, Nome, AK 99762	Cleanup Complete	64.560083 - 164.441796	400.23.006
810	Steadman Field	Steadman St. & 4th Ave, Nome, AK 99762	Cleanup Complete	64.499398 - 165.402519	400.23.005, 400.23.005 A
844	Anvil Mt. White Alice Site	6.5 Miles North of Nome, Nome, AK	Cleanup Complete	64.563611 - 165.371519	400.38.004
1142	Nome Spit/DERP/Nome Area Site 1	West Bank of Snake River, Nome, AK	Cleanup Complete	64.501364 - 165.425950	400.38.001F
1144	Nome Field Site "R"/DERP/Site 3 P	Center Creek Road, Nome, AK	Cleanup Complete	64.501100 - 165.406400	400.38.001I
1147	Nome Prison Site "A"/DERP/Site 4	Adjacent to Nome Prison, Nome, AK	Cleanup Complete	64.538521 - 165.416414	400.38.001J
1149	Nome Airport Site "U"/DERP/Site 7	Nome Airport, Nome, AK	Cleanup Complete	64.501100 - 165.406400	400.38.001 K
2499	Nome Area Site #16, Hospital (DERP)	8 mi N of Nome, N of Nome-Teller Highway	Cleanup Complete	65.545533 - 165.408222	400.38.013
2501	Center Creed Rd/DERP/Area Site 18	Center Creek Road, Nome, AK 99762	Cleanup Complete	64.528122 - 165.417314	400.38.015

2502	Settling Pond, Nome Site #19, DERP	1 mi E of Nome/Teller Hwy, Nome, AK	Cleanup Complete	64.530625 - 165.338713	400.38.017
2503	Dexter Creek, Nome Area Site #21, DERP	Dexter Bypass Road, Nome, AK	Cleanup Complete	64.571736 - 165.336495	400.38.018
2504	Northeast Runway Site	West of Center Creek Road, Nome, AK	Cleanup Complete	64.520621 - 165.420922	400.38.020
2505	Icy View, Nome Area Site #20, DERP	Nome, AK	Cleanup Complete	64.627728 - 165.365019	400.38.019
2506	Hotel Gulch, Nome Area, Site #17, DERP	Dexter Bypass Road, Nome, AK	Cleanup Complete	64.552847 - 165.346215	400.38.016
2660	Nome East End	East 1st Ave and Carsten's Way, Nome, AK	Cleanup Complete	64.495844 - 165.390950	400.38.039
2661	NPS Bering Land Bridge Headquarters	507 W. 4th Ave, Nome, AK	Cleanup Complete	64.498611 - 165.393889	400.38.022
3694	Novagold Barrel Dump	South of Snake River, Nome, AK, 99762	Cleanup Complete	64.514284 - 165.474817	400.38.029
3969	Nome Icy View Subdivision	1 mile north of Nome, Nome, AK	Cleanup Complete	64.521556 - 165.375444	400.38.030
3971	Nome New Power Plant	Port Road, 200' SW of Old NJUS Power Plant	Cleanup Complete	64.505065 - 165.429957	400.38.031
4046	UAF Nome	623 Front Street	Cleanup Complete	64.498056 - 165.402778	400.38.032

4205	KICY Radio	408 W. D Street, Nome, AK	Cleanup Complete	64.501745 - 165.413037	400.38.010
23186	Alaska Airlines – Nome Terminal	Seppala Drive – Airport Access Road, Nome, AK	Cleanup Complete	64.507819 - 165.441963	400.26.012
23879	City of Nome – Public Works Building	61 Hunter Way, Nome, AK 99762	Cleanup Complete	64.500806 - 165.402444	400.26.008
24346	AKARNG Nome Organizational Maintenance Shop	433 Front Street, Nome, AK 99762	Cleanup Complete	64.496766 - 165.399141	400.26.014
24564	The Country Store (Bonanza Fuel)	1275 East Front Street, Nome, AK 99762	Cleanup Complete	64.494225 - 165.382645	400.26.004
24811	Anvil City Station	Bering Street & Seppala Drive, Nome, AK 99762	Cleanup Complete	64.500513 - 165.409641	400.26.009
24932	FAA Nome	Nome, Nome, AK 99762	Cleanup Complete	64.507309 - 165.438540	400.38.008
25025	Federal Bldg Post Office Complex	240 Front Street, Nome, AK 99762	Cleanup Complete	64.498089 - 165.405228	400.26.007
25027	Q Trucking	331 and 367 W Seppala Drive, Nome, AK 99762	Cleanup Complete	64.501960 - 165.415966	400.26.005
25030	AK ANG, Former Aviation Operation Facility, Alaska Army National Guard Armory	Airport Way, Nome, AK 99762	Cleanup Complete	64.495103 - 165.380733	400.26.002
25031	ADOT&PF Nome Maintenance Fueling Station	3 Mile Nome Beltz Hwy., Nome, AK 99762	Cleanup Complete	64.538132 - 165.403432	400.26.003

25032	Nome Native Community Store	1275 East Front Street, Nome, AK 99762	Cleanup Complete	64.494225 - 165.382645	400.26.004
25150	USCG Port Clarence Loran Station	Port Clarence, Nome, AK 99762	Cleanup Complete	65.276821 - 166.848890	475.26.004
25486	UAF Northwest Campus Parking	East Front Street, Between Moore Way and Campbell Way, S of the Main UAF Bldg; West of the UA Library, Nome,	Cleanup Complete	64.496200 - 165.396270	400.38.046

Notes:
Alaska Department of Environmental Conservation, Contaminated Sites Search – https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/Search
*Alaska Department of Transportation & Public Facilities (ADOT)
*Department of Environmental Restoration Program (DERP)

e. Nome & Snake River Watersheds Land Use

Land use within a watershed has a major effect on the water quality, hydrology, and ecology of the waterbodies within it. Healthy watersheds provide people and the environment with economic, physical, and cultural health benefits. Agricultural, residential, industrial, mining, and recreations can have direct and cumulative impacts on water quality, watershed function, wildlife habitat, climate, and human health (EPA 2023). The more a watershed has been altered by human activities through nonpoint and point source pollution, the more negatively impacted the health of watershed. (U.S. EPA 2002). The loss of native habitats and the spread of invasive species also to create health risks, while increasing native habitat through restoration and reclamation can mitigate impacts.

Watershed land use such as regulatory and nonregulatory controls, waste site cleanups, buffer areas, public education, and septic system improvement projects can be crucial in controlling nonpoint sources of water pollution.

Malemiut, Kauweramiut, and Unalikmiut Eskimos are the Indigenous cultural groups that reside in present-day Nome. Nome remains a regional hub for Indigenous communities including Shishmaref, Wales, Diomede, Brevig Mission, Teller, King Island, Mary's Igloo, Council, White Mountain, Solomon, Golovin, Koyuk, Shaktoolik, Unalakleet, Stebbins, and St. Michael. The city is home to the federally recognized tribe - the Nome Eskimo Community (NEC). The King Island Native Community, consisting of former residents of the now abandoned Native village of King Island, is an Inupiaq community

organization also based in Nome. The Native Village of Council, located 60 miles northeast of Nome on the banks of the Niukluk River, is primarily a summer fish camp site for Nome residents. The Inupiaq Village of Council's tribal office is located in Nome (Kawerak, Inc. 2023).

Bering Straits Native Corporation (BSNC), the regional corporation for the Bering Straits and Norton Sound region, was founded during the 1972 Alaska Native Claims Settlement Act (ANCSA). The corporation is headquartered in Nome, with a mission to improve the quality of life through economic development while protecting its land and preserving its culture and heritage. Sitnasuak Native Corporation (SNC) is an Alaska Native village corporation, created under (ANCSA), that is also headquartered in the city. SNC's mission is to promote the economic, social, and personal well-being of its shareholders and the broader community through sustainable economic growth for current and future generations. Kawerak, Inc., (Kawerak), is a tribal consortium and non-profit corporation headquartered in Nome whose mission is to advance the capacity of our people & tribes for the benefit of the region. Kawerak provides services and represents 20 federally recognized Inupiaq and Yup'ik tribes in the Bering Strait Region.

The Nome City Council holds the legislative power of the community, with City Council meetings held bi-monthly. The City has departments in animal control, building inspection, the Carrie M. McLain Memorial Museum, city clerk, city manager, cemetery, disaster and flood plans, finance, Kegoayah Kozga Public Library, landfill, volunteer ambulance, volunteer fire, parks and recreation, personnel, planning and engineering, policy, port of Nome, and public works.

The Nome Airport is a state-owned public-use airport located near the mouth of the Snake River, approximately two miles west of Nome's central business district. During World War II, the Nome Airport shared its runway with the United States Army during a Lend-Lease program with the Soviet Union. At that time, the Nome Airport was briefly renamed the Marks Air Force Base and used for air defense of Alaska's western coast.

Nome is connected to three gravel highways which provide access to numerous sections of the otherwise roadless Seward Peninsula, traversing a wilderness of coastline, tundra, mountains, rivers, and valleys. The Nome-Teller Road, or Teller Highway, is a 73-mile gravel highway that travels northwest and ends at Port Clarence and Grantly Harbor. The roadway is considered locally important for subsistence hunting and harvesting activities such as berry picking and fishing. The Nome-Kougarok Road, also known as the Taylor Road, travels 87 miles north of Nome through the heart of the Kigluaik Mountains. The road parallels the Nome River until mile 28. The Kougarok Road passes Salmon Lake, the headwaters of the Nome River, and stops at the Kougarok River, short of the historic mining town of Taylor. Finally, the Nome-Council Road heads east of Nome, traveling 72 miles and ending at the Niukluk River, across from Council. The Alaska Department of Transportation and Public Facilities maintains roads, highways, and airports of the region.

The Nome Water Treatment System has a classification level of Class 1, with a capacity of 1,000,000 – 5,000,000 gallons per day. The Nome Wastewater Treatment System also has a classification level of Class 1, with 500,000 – 1,000,000 gallons per day of treatment, as well as secondary treatment at an aerated lagoon. The Nome public water systems provide safe, potable drinking water and wastewater is properly treated before being discharged into the local watershed.

Glacier Creek Gravel Pit
Photo taken August 3, 2023

f. Identification of Data Gaps

A lack of data about the current water quality of the Nome and Snake River Watersheds makes it difficult to determine whether the rivers and streams within the Watersheds are impaired or what impacts the issuance of discharge and other permits are having on these water bodies. For example, the permits contained in the Environmental Data Management System (EDMS) Map Explorer and United States Army Corps of Engineers (USACE) mapping links for the Nome Area Rivers (NARs) have varying degrees of discharge information. The EDMS Explorer does provide copies of actual permits, and some include information regarding effluent authorized to be discharged into the NARs.

The remaining permits don't contain actual discharge information. While some do indicate that discharges must meet Clean Water Act standards, or provide conditions on procedural operations, they do not spell out the standards or specify limits on discharge.

Other State of Alaska permitting sites, primarily those pertaining to filling in wetlands, don't provide any documentation, and are likely deferring to USACE for section 401 permitting.

The USACE database provides a brief description of the type of permit, project, acting agency, public notice date, action taken, whether it was issued with special conditions, and the USFWS or NMFS decision on impacts to Endangered Species Act listed species. They provide no link to the actual permit.

The only report we uncovered addressing water quality impacts from non-point source pollution is the 2005 Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative Development and Application of a Salmon Habitat Restoration Framework on the Nome River Watershed, Alaska.

These data gaps make it difficult for state and federal regulatory agencies to determine whether rivers and streams within the Watersheds meet effluent guidelines and how the issuance of non-point source permits should be regulated to meet water quality standards.

Future plans should address these data gaps by proposing peer-reviewed science, regional baseline studies and the collection of data to understand the quantity and type of non-point source pollution within the Watersheds. Government-to-government consultation between Nome area tribes and State and federal agencies will ensure that factors such as depleted flows from water withdrawals for mining projects, construction, and other climate-related and nonpoint source pollution impacts are recognized and mitigated.

g. Monitoring Recommendations

Plans should also seek to improve water quality from impacts of non-point source pollutants by recommending the regulation of the issuance of permits and mitigation measures based on information derived once data gabs are identified and addressed. To this end, future plans should address the following information gaps noted in the Watershed Characterization:

1) Existing water quality data on streams within the Nome and Snake River Watersheds

2) Development of a Nome and Snake River Watershed Quality Assurance Project Plan

3) Land use impacts effecting water quality from historic and current mining, and stormwater runoff from construction projects, fill materials, industry, ATV stream crossing, and transportation and maintenance associated with roads and airstrips.

4) Regulatory recommendations to mitigate impacts to water quality from the above.

5) Management implementation recommendations and measures of success, and

6) Cost estimates for management implementation.

h. Nome & Snake River Watershed Subsistence Salmon & NSF Harvest Concerns

Nome is among the first western Alaska communities to be affected by recent declines in western Alaska Pacific salmon stocks. This has resulted in a gradual decline of subsistence salmon harvesting for the Nome area, including declines reported in 2024. Healthy abundant salmon populations are a fundamental component of healthy watersheds. The decline in subsistence salmon harvests, along with increasingly restrictive management intended to protect these populations, have caused considerable difficulties for Nome families who depend on salmon as an essential, traditional food source. Nome families have reportedly focused their subsistence salmon harvests on less regulated areas outside the Nome Subdistrict, including Anvil, Dry, and Glacier Creeks.

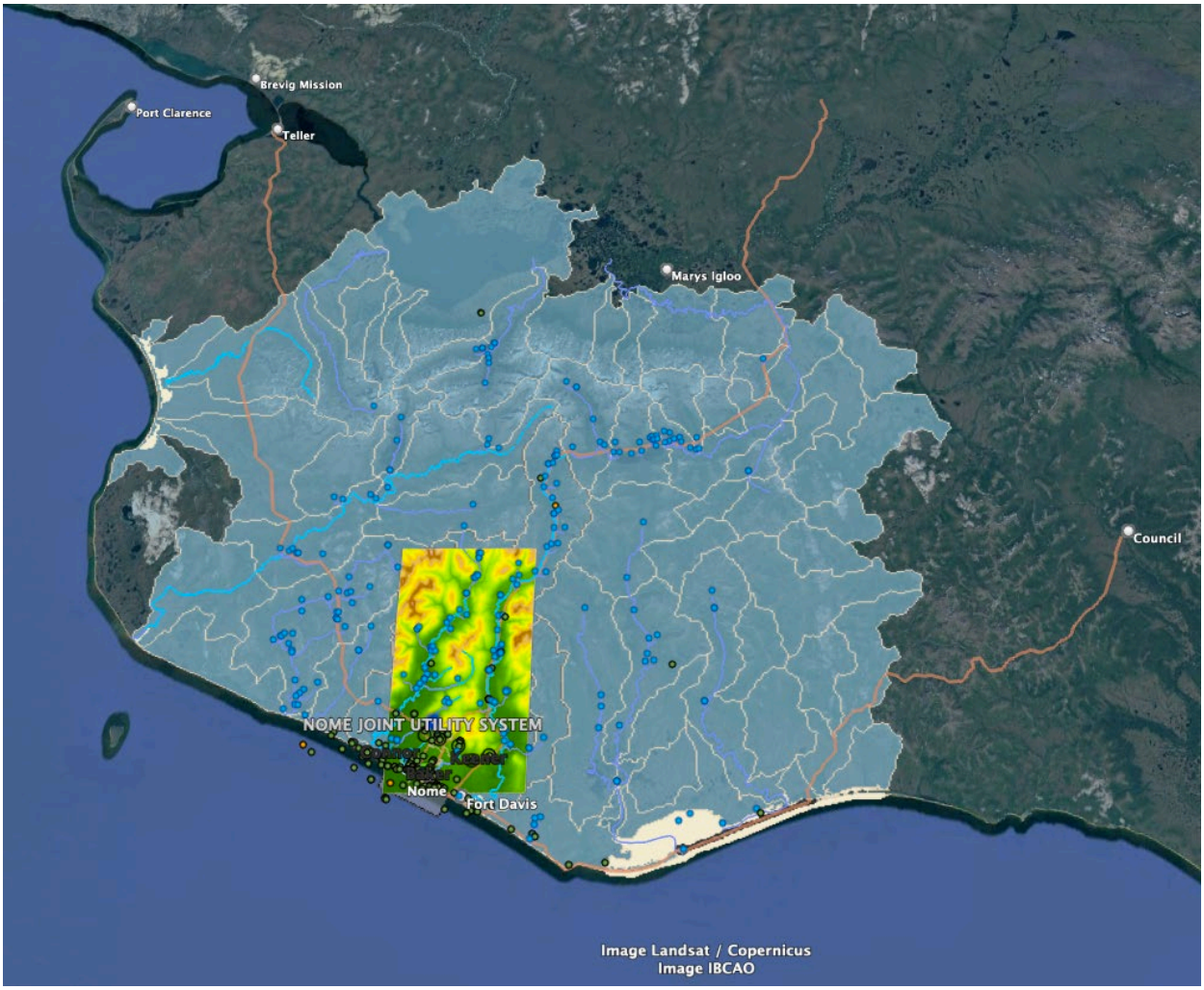
Connection with culture, especially for the Nome Eskimo and King Island Native Communities, means engaging youth and young adults in a subsistence lifestyle. However, later freeze-up, and unstable ice in the winter months has narrowed the window for walrus and seal hunting, while changes in vegetation from lichens and mosses to shrubs has reduced the forage caribou depend on. This rapid decline in key resources reduces the likelihood that village youth will remain in the region once they reach adulthood.

USGS Snake River Stream Gage Site.
Photo taken on August 3, 2023

V. ArcGIS DATABASE AND MAPS

The ArcGIS dataset consists of maps and data points from Nome and Snake River watersheds representing land uses, permitted activities, topographic contours, surface water hydrology, historic water quality data, and potential pollution sources. The link provided below will open the dataset. The attached photos delineate the sites identified in the database.

https://www.arcgis.com/home/item.html?id=4b000faf299c4a7383d1bab91a1bb5c0



GIS data points in the Nome and Snake River Watersheds

VI. CONCLUSIONS

Our vision is to provide strategic guidance for the protection and sustainable management of water and subsistence resources, climate change adaptation, Tribal sovereignty, and environmental human rights on Alaska's Seward Peninsula. Success requires planning and collaboration among a broad spectrum of individuals and agencies.

To that end, the NBWC recommends identifying and working with key stakeholders to use the Watershed Characterization to develop a Nome and Snake Rivers Watersheds Plan at the local, state, and federal level. The Plan will include the following items:

- Develop informational materials and post to website and social media.
- Outreach through newsletters and one-on-one conversations with existing and potential stakeholders.
- Involve stakeholders from Federally recognized Tribal entities, U.S. Bureau of Land Management (BLM), National Park Service (NPS), Alaska villages and regional Native corporations, Kawerak, Inc., Alaska Department of Natural Resources (ADNR), Alaska Department of Fish and Game (ADF&G), the City of Nome, and other tribal, conservation, and non-governmental organizations (NGOs) to complete the Watersheds Plan.

We also recommend drafting a Public Involvement Plan that would build on the Stakeholder Outreach Plan developed under the Nome Area Rivers Characterization plan. The Public Involvement Plan will include a process for engaging in outreach, including the development of informational materials using existing websites and social media networks to reach out to new stakeholders and BOD members, and to collaborate with different groups or partners through partnership activities, public meetings, newsletters, and/or recruitment of new stakeholders.

ANNOTATED BIBLIOGRAPHY

Alaska Department of Commerce, Community, and Economic Development and Regional Affairs, Alaska Community Database, Community Information Summaries. Accessed on November 27, 2023, at: https://dcced.maps.arcgis.com/apps/MapJournal/index.html?appid=b98054a5c46941c4b3921af686dd488a.

Alaska Department of Fish and Game (2013). Nome Roadside Fishing Guide. Accessed November 28, 2023, at: https://www.adfg.alaska.gov/static-sf/Region3/PDFs/nome07.pdf.

Alaska Department of Fish and Game (2023). 2023-2026 Arctic, Yukon, Kuskokwim, Commercial, Subsistence, Personal Use Finfish and Selected Shellfish Fishing Regulations. Accessed online at: https://www.adfg.alaska.gov/index.cfm?adfg=fishregulations.commercial

Alaska Department of Health and Human Services (2013). Investigation into Potential Exposures to Mercury Vapor in Small-Scale and Recreational Mining – 2012: Nome Small Scale Mining Areas – Nome, Alaska.

Alaska Native Tribal Health Consortium (2024). The Unmet Needs of Environmentally Threatened Alaska Native Villages: Assessment and Recommendations. Final Report, January 2024. Accessed online at: https://www.anthc.org/wp-content/uploads/2024/01/Unmet_Needs_Report_22JAN24.pdf

Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative Chinook Salmon Expert Panel (2013). Arctic-Yukon-Kuskokwim Chinook Salmon Research Action Plan – Evidence of Decline of Chinook Salmon Populations and Recommendations for Future Research. Accessed online at: https://www.aykssi.org/wp-content/uploads/AYK-SSI-Chinook-Salmon-Action-Plan.pdf

BLM (2024). Aquatic Habitat Rehabilitation and Restoration -Programmatic Environmental Assessment -DOI-BLM-AK-0000-2024-0001-EA.

Boylan, B. and Speight, J.S. (2021). Alaska's Arctic Security Complex and Evolving Dynamics in Nome. University of Alaska Fairbanks, Center for Arctic Policy Studies, International Arctic Research Center.

Brabets, T.P., Wang, B., and Meade, R. H. (2000). Environmental and Hydrologic Overview of the Yukon River Basin, Alaska and Canada. U.S. Geological Survey – Water Resources Investigations Report 99-4204.

Chickaloon Native Village (2022). Chickaloon Native Village Surface Water Baseline Monitoring 2015-2021 Summary Report. Prepared for Chickaloon Native Village and the U.S. Environmental Protection Agency.

City of Nome (2012). Nome: The Heartbeat of Western Alaska. Nome Comprehensive Plan 2020 – Approved Nome Common Council – May 30, 2012. Accessed November 10, 2023, at: https://www.nomealaska.org/sites/default/files/fileattachments/nome_planning_commission/page/125/ncp-2020.pdf.

Donnellan, S.J., and Munro, A.R., editors (2024). Run forecasts and harvest projections for 2024 Alaska salmon fisheries and review of the 2023 season. Alaska Department of Fish and Game, Special Publication No., 24-09, Anchorage.

Dorava, J. M. (1995). Overview of Environmental and Hydrogeologic Conditions at Nome, Alaska. U.S. Geological Survey Open-File Report, 95-178. Prepared in cooperation with the Federal Aviation Administration.

Dunker, B.R., and S.R. Germain (2022). Seward Peninsula muskox management report and plan, Game Management Unit 22: Report period 1 July 2014-30 June 2019, and plan period 1 July 2019-30 June 2024. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2022-26, Juneau.

Ellis, L. (2024). The Alaska Sustainable Salmon Fund (AKSSF), Project # 53014 - Instream Flow Protection: Nome Area [Data set]. Accessed online at: https://doi.org/10.5281/zenodo.10569662

Gaboury, M.N. and Bocking, R.C. (2005). Development and Application of a Salmon Habitat Restoration Framework on the Nome River Watershed, Alaska. Prepared for: Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative, Bering Sea Fishermen's Association. https://www.aykssi.org/wp-content/uploads/439-Gaboury-FR.pdf

Germain, S.R. (2023). Moose management report and plan, Game Management Unit 22: Report period 1 July 2010-30 June 2015, and plan period 1 July 2015-30 June 2020. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2023-15, Juneau.

Germain, S.R. (2022). Brown bear management report and plan, Game Management Unit 22: Report period 1 July 2014-30 June 2019, and plan period 1 July 2019-30 June 2024. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2022-14, Juneau.

Henry, J., Garron, J., Hall, M., Cozzens, B., Gilliam, N., Griffith, G., Shepherd, H. (2020). Feasibility of Improving Local Decision Making in Alaskan Communities with Unmanned Aircraft Systems and Online Climate Data Tools. Submitted t: Native Village of Unalakleet Tribal Council.

Hovey, Davis (2020). Another Climate Record Broken: May, 2020 was Nome's Warmest May Ever. KNOM Radio Mission. Accessed November 28, 2023, at:

https://knom.org/2020/06/02/another-climate-record-broken-may-2020-was-nomes-warmest-may-ever/

Hughes, L. (2022). Wolf management report and plan, Game Management Unit 22: Report period 1 July 2010-30 June 2015, and plan period 1 July 2015-30 June 2020. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2022-16, Juneau.

Hughes, R.M., Chambers, D.M., DellaSala, D.M., Karr, J.R., Lubetkin, S.C., O'Neal, S., Vadas, R.L., and Woody, C.A. (April 2024). Environmental impact assessments should include rigorous scientific peer review. Water, Biology, and Security. https://doi.org/10.1016/j.watbs.2024.100269

Interagency Working Group (September 2023). Recommendations to Improve Mining on Public Lands - Final Report. Developed by the Biden-Harris Administration's Interagency Working Group on Mining Laws, Regulations, and Permitting.

Kawerak (2019). Bering Straits Comprehensive Economic Development Strategy, 2019-2024. This report was accessed online at: https://kawerak.org/bering-strait-comprehensive-economic-development-strategy-published/

Kawerak, Inc. (2023). Nome. Accessed November 27, 2023, at https://kawerak.org/our-region/nome/.

Kawerak, Inc. (2024). Kawerak-Region Tribal Research Protocols, Guidelines, Expectations & Best Practices – A Tribal vision for research in the Kawerak-Region. Accessed online at: https://kawerak.org/natural-resources/research/

Kent, K. Neff (2008). Salmonoid Escapements at Kwiniuk, Niukluk and Nome Rivers, 2007. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries.

Kettle, N., Martin, J., and Sloan, M. (2017). Nome Tribal Climate Adaption Plan - Nunamquq saiqturaq inuit saiqturuat silagiksruaq mumiqtuk (*Healthy ecosystems, healthy people in a changing climate*. Nome Eskimo Community and the Alaska Center for Climate Assessment and Policy. Fairbanks, Alaska. Accessed online August 21, 2024 at: https://uaf-accap.org/wp-content/uploads/2019/08/Nome-Tribal-Climate-Adaptation-Plan_2017.pdf

Murray, B. (2023). Thawing Interests: The Arctic in U.S. Grand Strategy. Missouri State University Master's Thesis 3907. Accessed online at: https://bearworks.missouristate.edu/theses/3907

National Weather Service (2023). Northern Alaska Climate. Accessed November 22, 2023, at https://www.weather.gov/afg/localClimate.

Oquilluk, W. A. & L. L. Bland (1973). People of Kauwerak: Legends of the Northern Eskimo. Anchorage, AK: Alaska Pacific University Press.

Rosen, Y. (2024). Corps reverses 2022 decision on controversial mine plan in Nome region, approves dredge permit. *Alaska Beacon,* Economy & Environment, March 21, 2024. Accessed online at: https://alaskabeacon.com/briefs/corps-reverses-2022-decision-on-controversial-mine-plan-in-nome-region-approves-dredge-permit/

Sergeant, C.J., Sexton, E.K., Moore, J.W., Westwood, A.R., Nagorski, S.A., Ebersole, J.L., Chambers, D.M., O'Neal, S.L., Malison, R.L., Hauer, F.R., Whited, D.C., Weitz, J., Caldwell, J., Capito, M., Connor, M., Frissell, C.A., Knox, G., Lowery, E.D., Macnair, R., Marlatt, V., McIntyre, J.K., McPhee, M.V., and Skuce, N. (2022). Risks of mining to salmonoid-bearing watersheds. Science Advances, Vol. 8, No. 26. DOI: 10.1126/sciadv.abn0929

Shah Z.H. (2024). Great Power Competition in the Arctic Region and Changing Regional Dynamics. CISS: Journal of Strategic Studies.

Shannon & Wilson, Inc. (2021). Nome Airport Initial PFAS Site Characterization Report. Prepared on behalf of the Alaska Department of Transportation & Public Facilities (DOT&PF). Shannon & Wilson No: 105745-002/003. Fairbanks, Alaska.

Smith, Howard (1997). Nome River Water Control Structures. U.S. Department of the Interior, Bureau of Land Management Open File Report 62.

Swensen, C.R. and Amost, A.L., (2015). Evaluating Instream Flow Programs: Innovative Approaches and Persistent Challenges in the Western United States. University of Oregon School of Law: Eugene, Oregon.

Thoman, R.L., Moon, T.A., and Druckenmiller, M.L., (2023). Arctic Report Card 2023. https://doi.org/10.25923/5vfa-k694.

Till, Alisson, Dumoulin, Julie, Werdon, Melanie, and Bleick, Heather (2011). Bedrock Geologic Map of the Seward Peninsula, Alaska, and Accompanying Conodont Data. U.S Department of the Interior, U.S. Geological Survey.

Toohey, R.C., Neal, E.G., and Solin, G.L. (2014). Guidelines for the Collection of Continuous Stream Water-Temperature Data in Alaska. U.S. Geological Survey Open-File Report 2014-1182. Prepared in cooperation with the U.S. Fish and Wildlife Service. http://dx.doi.org/10.3133/ofr20141182.

U.S. Department of the Interior (2023). Recommendations to Improve Mining on Public Lands – Final Report (2023). Developed by the Biden-Harris Administration's Interagency Working Group on Mining Laws, Regulations, and Permitting.

U.S. Environmental Protection Agency (1991). Technical Support Document for Water Quality-based Toxics Control. Office of Water Enforcement and Permits, Office of Water Regulation and Standards, U.S.

U.S. Environmental Protection Agency (2010). Handbook for Developing and Managing Tribal Nonpoint Source Pollution Programs Under Section 319 of the Clean Water Act. EPA 841-B-10-001.

U.S. Environmental Protection Agency (2016). EPA's Bristol Bay Watershed Assessment: Obtainable Records Show EPA Followed Required Procedures Without Bias or Predetermination, but a Possible Misuse of Position Noted. Protecting America's Waters, Report No. 16-P-0082.

U.S. Environmental Protection Agency (January 2023). Effluent Guidelines Program Plan 15.

U.S. Environmental Protection Agency, Office of Water, EPA-821-R-22-004.

U.S. Environmental Protection Agency (2023). EPA's Recommended Determination for Bristol Bay: Solid Scientific Backing for the Threat of Mining to Bristol Bay's Pristine Waters and Salmon Population. U.S. Environmental Protection Agency, Region 10, Seattle, WA.

U.S. Environmental Protection Agency (2023). Land Use – What are the trends in land use and their effects on human health and the environment? Retrieved November 2023, from: https://www.epa.gov/report-environment/land-use.

US EPA (2024). A Joint Plan Between the Village of Solomon, Nome Eskimo Community, Native Village of Council & King Island Native Community – Prepared for: State and Local Climate and Energy Program, U.S. Environmental Protection Agency, and Tribal Partnerships.

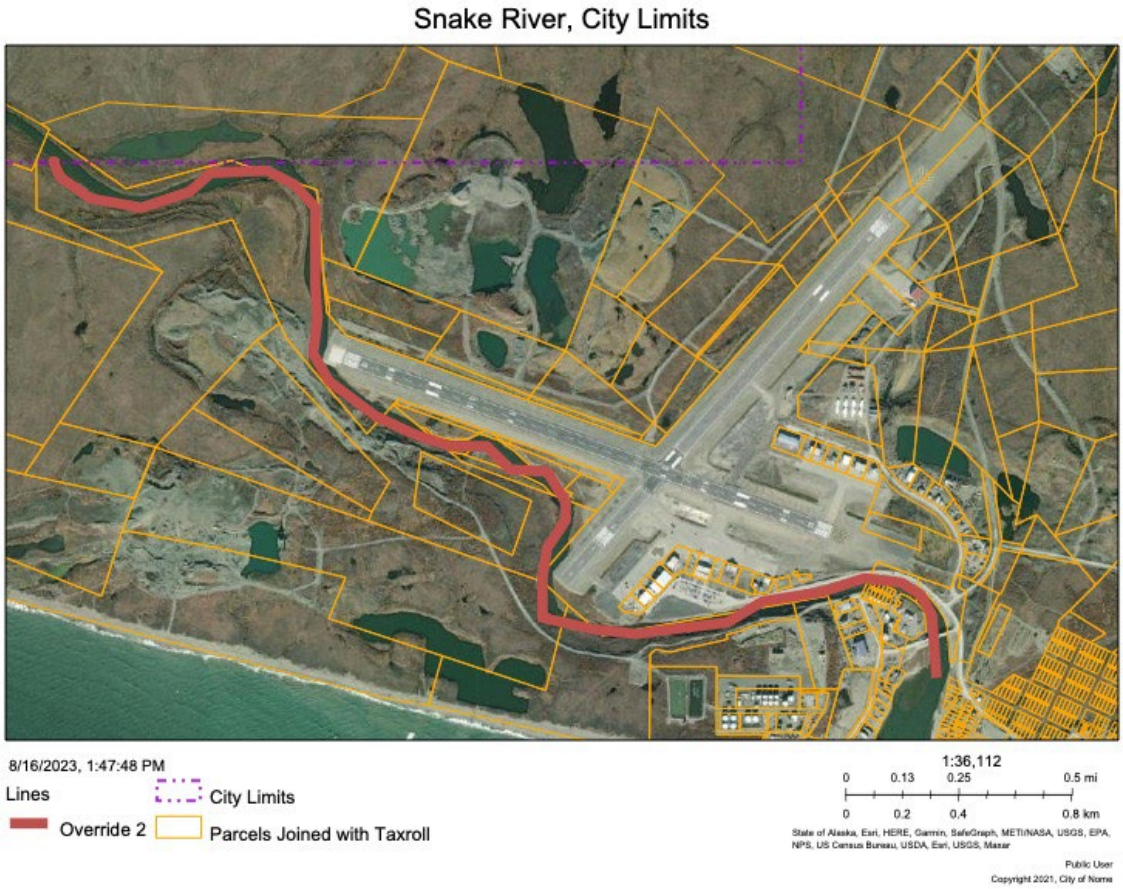
Wolfe, R.J., Fall, J.A., Fay, V., Georgette, S., Magdanz, J., Pedersen, S., Pete, M., and Schichnes, J. (1986). The Role of Fish and Wildlife in the Economies of Barrow, Bethel, Dillingham, Kotzebue, and Nome – Technical Paper No. 154. Paper presented to the Alaska Joint Boards of Fisheries and Game, November 1986. Alaska Department of Fish and Game – Division of Subsistence. Juneau, Alaska.

Young, O.R., Berkman, P.A., and Vylegzhanin A. N. editors (2020). Governing Arctic Seas: Regional Lessons from the Bering Strait and Barents Sea – Volume 1. Science Diplomacy Center – The Fletcher School, Tufts University.

APPENDIX A: PARCEL DATA

Watershed Characterization for the Nome and Snake Area Rivers Alaska Clean Water Actions (ACWA) Grant Number: ACWA 23-03

*Ownership Data Ascertained From: **Nome Primary GIS***
October 2023



Snake River

Account Number: 001.401.50
NOME TOWNSITE, TRACTS A, B, C, D & E; & GOLD AVE EXT; & WEST C, D, & E STREETS
Owner Information
CITY OF NOME
PO BOX 281
NOME, AK 99762

001.401.50

NOME TOWNSITE, TRACTS A, B, C, D & E; & GOLD AVE EXT; & WEST C, D, & E STREETS
Block, Lot Tract A
Owner Information
CITY OF NOME

200.5.001
PORT ROAD INDUSTRIAL PARK SUB
Block , Lot 01
Owner Information
NOME HARBOR HOLDINGS
PO BOX 308
SKULL VALLEY, AZ 86338

200.5.002
PORT ROAD INDUSTRIAL PARK SUB
Block, Lot 02
Owner Information
CITY OF NOME

200.5.003
PORT ROAD INDUSTRIAL PARK SUB
Block, Lot 03
Owner Information
CITY OF NOME

200.5.004
PORT ROAD INDUSTRIAL PARK SUB
Block, Lot 04
Owner Information
TELCO PROPERTIES INC
201 E 56TH AVE #100
ANCHORAGE, AK 99518

200.5.005
Subdivision: PORT ROAD INDUSTRIAL PARK SUB
Block, Lot 05
Owner Information
LEAN F CHARLES
PO BOX 1716
NOME, AK 99762

200.5.006
PORT ROAD INDUSTRIAL PARK SUB, LOTS 6 & 6A
Block , Lot 06

Owner Information
PISCOYA CAROL
PO BOX 94
NOME, AK 99762

200.5.006A
PORT ROAD INDUSTRIAL PARK SUB, LOTS 6 & 6A
Block, Lot 06A
Owner Information
SAMUELSON GARY
11495 N COWBOY TR
PRESCOTT, AZ 86305

200.5.007
GCI LEASE RECORD OF SURVEY
Block, Lot GCI Lease
Owner Information
CITY OF NOME

001.451.03
NOME TOWNSITE, BLOCK 135A, LOT 2A
Block 135A, Lot 02A
Owner Information
NORTON SOUND ECONOMIC DEVELOPMENT CORP
2701 GAMBELL ST
ANCHORAGE, AK 99503

No Tax ID Number
NOME AIRPORT BOUNDARY RECORD OF SURVEY

USMS 1339 ARTHUR, BRONCHO, et al PLACER (rem)

192.1.682
THORN BUSH SUB
Block, Lot Tract D
Owner Information
BERING STRAITS NATIVE CORP
PO BOX 1008
NOME, AK 99762

192.1.677
SMS 1301 FORSELLS ASSOCIATION
Owner Information
ARCTIC GOLD MINING LLC
PO BOX 1590
NOME AK 99762

Notes: Right Bank, from mouth of river

Account Number: 001.421.09
Subdivision: BELMONT POINT REPLAT
Block 57, Lot 59A
Owner Information
CITY OF NOME

001.421.08
BELMONT POINT REPLAT
Block 57, Lot 61A
CITY OF NOME

001.421.07
BELMONT POINT REPLAT
Block 57, Lot 62A
CITY OF NOME

001.421.06
BELMONT POINT REPLAT
Block 57, Lot 63A
CITY OF NOME

001.421.05
BELMONT POINT REPLAT
Block 57, Lot 64A
CITY OF NOME
AIRPORT.35
NOME AIRPORT
Block VII, Lot B
STATE OF ALASKA: DOT&PF
PO BOX 110210
JUNEAU, AK 99811-0210

190.1.095
NOME AIRPORT
Block, Lot
STATE OF ALASKA: DOT&PF

No Tax ID Number
NOME AIRPORT BOUNDARY RECORD OF SURVEY

AIRPORT.75
NOME AIRPORT
Block XI, Lot P3
STATE OF ALASKA: DOT&PF

AIRPORT.74
NOME AIRPORT
Block XI, Lot R3
STATE OF ALASKA: DOT&PF

192.1.674
USMS 674 MOONLIGHT PLACER (S REMAINDER)
ARCTIC GOLD MINING LLC
PO BOX 1590
NOME, AK 99762

AIRPORT.74
NOME AIRPORT
Block XI, Lot R1
STATE OF ALASKA: DOT&PF

No Tax ID Number
NOME AIRPORT BOUNDARY RECORD OF SURVEY

192.1.515
USMS 1284 DOVER ASSOCIATION PLACER (REMAINDER)
ARCTIC GOLD MINING LLC
PO BOX 1590
NOME, AK 99762

Dry Creek

001.371.07
NOME TOWNSITE (USS 451)
Block 60, Lot 12
Plat Number: 1904 Mar 9
Owner Information
READER J CHARLES
PO BOX 991
NOME, AK 99762

001.371.01
NOME TOWNSITE (USS 451)
Block 60, Lot 03
Plat Number: 1904 Mar 9
Owner Information
READER J CHARLES
PO BOX 991
NOME, AK 99762

001.311.15
NOME TOWNSITE (USS 451)
Block 96, Lot 12
Plat Number: 1904 May 9
Owner Information
FORD K MELISSA
PO BOX 1052
NOME, AK 99762

001.311.16
NOME TOWNSITE (USS 451)
Block 96, Lot 10
Plat Number: 1904 Mar 9
Owner Information
MILLER L JOEY
PO BOX 1087
NOME, AK 99762

001.311.17

NOME TOWNSITE (USS 451)
Block 96, Lot 08
Plat Number: 1904 Mar 9
Owner Information
GREER L MATTHEW
3324 KOBA WAY
FAIRBANKS, AK 99709

001.311.13
NOME TOWNSITE (USS 451)
Block 96, Lot 05
Plat Number: 1904 Mar 9
Owner Information
NAGARUK NATHAN
PO BOX 1286
NOME, AK 99762

001.201.05
NOME TOWNSITE, BLOCK 127 LOTS 3A & 7A
Block 127, Lot 7A
Plat Number 96-02
Owner Information
NORTON SOUND HEALTH CORP
PO BOX 966
NOME, AK 99762

001.201.08
NOME TOWNSITE, BLOCK 127 LOTS 3A & 7A
Block 127, Lot 03A
Plat Number: 96-02
BERING STRAITS NATIVE CORP
PO BOX 1008
NOME, AK 99762

190.1.060
COMMERCE BENCH SUB
Block, Lot 01
Plat Number: 2013-04
No Owner Information

190.1.051
NOME-TELLER HIGHWAY
STATE OF ALASKA: DOT&PF
PO BOX 110210
JUNEAU, AK 998811-0210

190.1.270

USMS 1122 NO. 15 BELOW DISCOVERY ON DRY CREEK PLACER
Plat Number: 1914 July 30
AGC RESOURCES INC
201 S MAIN ST STE 400
SALT LAKE CITY UT 84111

190.1.250
USMS 454, NO. 14 BELOW DISCOVERY PLACER CLAIM
Plat Number: 1911 June 26
BERING STRAITS NATIVE CORPORATION
PO BOX 1008
NOME, AK 99762

Upriver from Greg Kruschek Ave

190.1.250
USMS 454, NO. 14 BELOW DISCOVERY PLACER CLAIM
Plat Number: 1911 June 26
BERING STRAITS NATIVE CORPORATION
PO BOX 1008
NOME, AK 99762

192.1.070
USMS 1104 NO. 13 BELOW DISCOVERY DRY CREEK PLACER CLAIM
ARCTIC GOLD MINING LLC

192.1.060
USMS 455 NO. 12 BELOW DISCOVERY PLACER CLAIM
ARCTIC GOLD MINING LLC

192.1.065
USMS 709 NO. 11 BELOW DISCOVERY PLACER
ARCTIC GOLD MINING LLC

192.1.035
USMS 457 NO. 10 BELOW DISCOVERY PLACER
ARCTIC GOLD MINING LLC

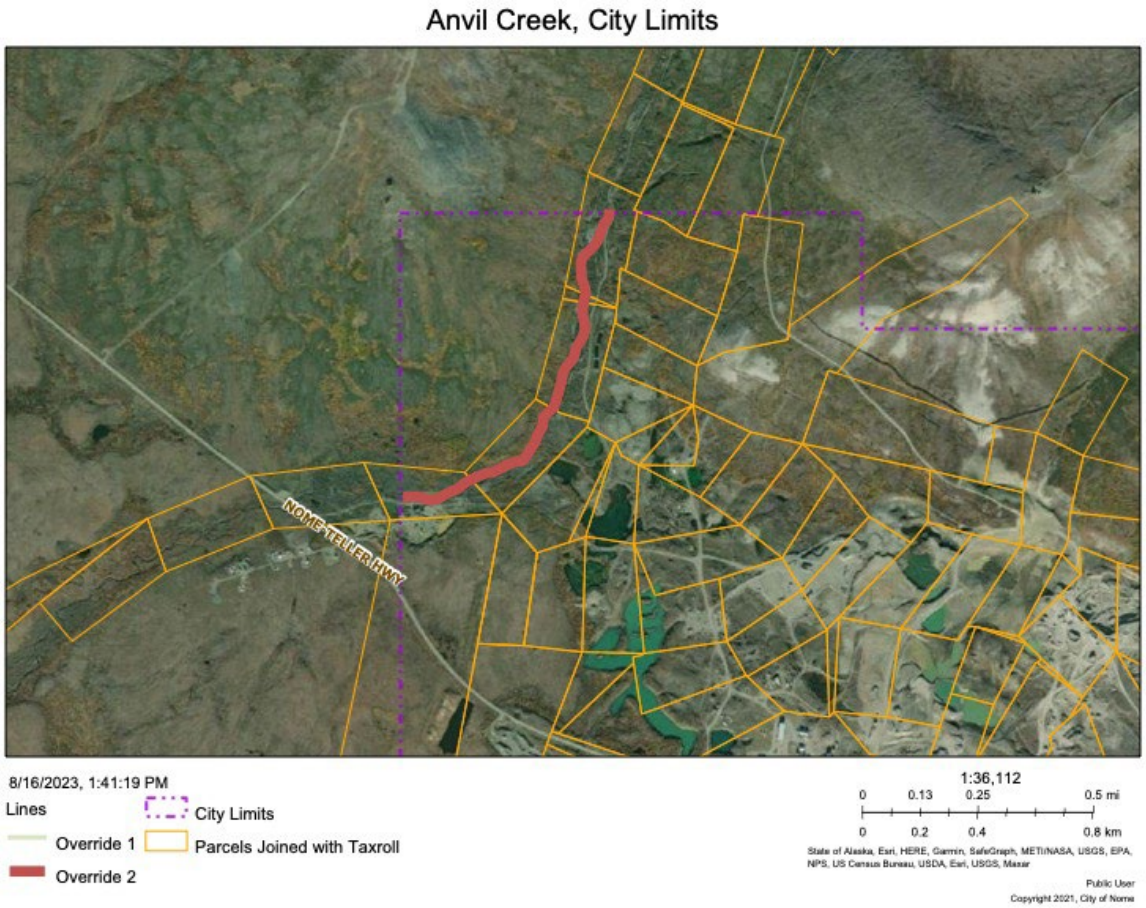
192.1.030
USMS 457 NO. 9 BELOW DISCOVERY PLACER
ARCTIC GOLD MINING LLC

192.1.025
USMS 457 NO. 8 BELOW DISCOVERY PLACER
ARCTIC GOLD MINING LLC
192.1.503

USMS 1812 NO. 7 BELOW ON DRY CREEK PLACER
ARCTIC GOLD MINING LLC
PO BOX 1590
NOME, AK 99762

192.1.488
USMS 456 NO. 6 BELOW PLACER CLAIM
ARCTIC GOLD MINING LLC

192.1.689
USMS 1358 VIOLA ASSOCIATION
Owner Information
ARCTIC GOLD MINING LLC
PO BOX 1590
NOME, AK 99762



Anvil Creek

192.1.320
USMS 505 VIKING'S ASSOCIATION PLACER

Plat Number: 1913 March 27
ARTIC GOLD MINING LLC
PO BOX 1590
NOME, AK 99762

192.1.284
USMS 466 NO. 3 BELOW DISCOVERY PLACER
ARCTIC GOLD MINING LLC
PO BOX 1590
NOME, AK 99672

192.1.323
USMS 1153 NO. 2 BELOW DISCOVERY ON ANVIL CREEK PLACER
Plat Number: 1915 June 2
ARCTIC GOLD MINING LLC

192.1.254
USMS 722 NO. 1 BELOW PLACER
Plat Number: 1906 Oct 24
ARCTIC GOLD MINING LLC

192.1.263
USMS 722 ZIP COON FRACTION
PLAT NUMBER: 1906 OCT 24
ARCTIC GOLD MINING LLC

192.1.260
USMS 722 DISCOVERY PLACER
BLOCK, LOT
Plat Number: 1906 Oct 24
ARCTIC GOLD MINING LLC

Nome River

SITNASUAK NATIVE CORPORATION

Nome River Watershed – Google Earth Maps