US Army Corps of Engineers
Alaska District

ANCHORAGE
Regulatory Division (1145)
CEPOA-RD
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JBER, Alaska 99506-0898

Public Notice of Application for Permit

PUBLIC NOTICE DATE:	**July 11, 2025**
EXPIRATION DATE:	**August 11, 2025**
REFERENCE NUMBER:	**POA-2014-00055-M2**
LOCATION:	**State of Alaska**

Interested parties are hereby notified that the United States (U.S.) Army Corps of Engineers (USACE), Alaska District, in accordance with regulations pursuant to Section 404 of the Clean Water Act (Public Law 95-217, 33 U.S.C. 1344 et. Seq.) is proposing to re-issue and modify Regional General Permit (RGP) POA-2014-00055-M1 (RGP-08-01), Statewide Mechanical Placer Mining Activities, for an additional five (5) years.

All comments regarding this public notice should be sent to the address noted above. If you desire to submit your comments by email, you should send it to the branch chief's email as listed below or to regpagemaster@usace.army.mil. All comments should include the public notice reference number listed above.

All comments should reach this office no later than the expiration date of this public notice to become part of the record and be considered in the decision. Please contact Ms. Amanda Locken at (907) 347-6148, toll free from within Alaska at (800) 478-2712, or by email at Amanda.N.Locken@usace.army.mil if further information is desired concerning this public notice.

LOCATION: The project site includes all non-navigable waters of the U.S. (WOUTS) within the Alaska District boundary, which is the entire State of Alaska.

PURPOSE: The purpose of RGP-08 is to streamline the permitting process for mechanical placer mining activities within the state of Alaska in non-navigable WOTUS.

CHANGES FROM PREVIOUS RGP-08 (POA-2014-00055-M1):

- USACE will include all relevant agencies on final mechanical placer mining verification letter distribution lists.

- The previously issued RGP allowed for five (5) acres of wetland/water disturbance at any time, commonly known as a "rolling footprint." This RGP no longer allows for the 5-acre "rolling footprint" of WOTUS disturbance at any time.
  - **NOTE:** A rolling footprint is a common reclamation term in placer mining. It is still applicable for USACE reclamation, but a rolling footprint is no longer used to authorize WOTUS impacts for this RGP.
- The total acreage limit for this RGP reissuance is ten (10) acres to WOTUS, including wetlands, within the 5-year term of the RGP (see Section 4(c)).
  - This RGP reissuance allows USACE to issue a single, one-time waiver for each single and complete project within the 5-year term of this RGP, that would allow for up to an additional five (5) acres of WOTUS impacts. To qualify, the Permittee must submit sufficient information found within the annual report form demonstrating successful reclamation of at least five (5) acres on the previously disturbed areas authorized under this RGP. See the terms and conditions of this RGP for reclamation criteria.
  - **With the single, one-time waiver for an additional five (5) acres, the total acreage of disturbance to WOTUS authorized under this RGP shall not exceed 15 acres for each single and complete project before the RGP expires on October 31, 2030.**
- All mechanical placer mining operations must maintain a minimum 25-foot undisturbed, vegetated buffer from flowing WOTUS. Certain mining activities are exempt from this. See Section IV "Terms and Conditions for the RGP" for more information on excluded activities.
- Changes and additions were made to portions of the General Conditions of this RGP.
- **Reclamation, at a minimum, must meet the criteria for successful reclamation and any special conditions included with the verification letter.**

AUTHORIZED ACTIVTIES: Mechanical placer mining activities that involve placement of dredged and/or fill material into WOTUS include, but are not limited to:

- Mechanized land clearing; construction of berms or dams; stockpiles
- Stream relocations (permanent); Stream diversions (temporary)
- New mine features constructed in wetlands, such as airstrips, camps, and roads within the mining operation, and culverted crossings of streams or wetland areas.
- Permanent access roads and road extensions outside the mining operation.
- Reclamation activities.
- Exploration activities for placer mining, such as side cast or discharge of dredged and/or fill material for exploratory drill pads, trenches, holes, and bulk samples.
- Ancillary processes associated with placer mining, such as settling ponds, staging mining equipment, etc.
- Deep ripping, for the purpose of thawing permafrost.
  - **NOTE:** All activities involving discharges of fill and/or dredged materials that impact WOTUS contribute to the 10-acre total WOTUS limit (or 15-acre total if a waiver is granted).

ADDITIONAL INFORMATION: Regional permits are a type of general permit as defined in 33 CFR 322.2(f) and 33 CFR 323.2(n). They may be issued by a division or district engineer after compliance with the other procedures of this regulation. After a regional permit has been issued, individual activities falling within those categories that are authorized by such regional permits do not have to be further authorized by the procedures of this regulation. The issuing authority will determine and add appropriate conditions to protect the public interest. When the issuing authority determines on a case-by-case basis that the concerns for the aquatic environment so indicate, he may exercise discretionary authority to override the regional permit and require an individual application and review. A regional permit may be revoked by the issuing authority if it is determined that it is contrary to the public interest provided the procedures of § 325.7 of this part are followed. Following revocation, applications for future activities in areas covered by the regional permit shall be processed as applications for individual permits. No regional permit shall be issued for a period of more than five years (33 CFR 325.2(e)(2)).

BACKGROUND: RGP-08 was originally issued on August 12, 1988, under file number POA-1988-00002, in order to expedite authorizations for the general public to place fill material into waters of the United States, including wetlands, for the purpose of placer mining activities located on Federal and State lands in Alaska. This permit authorized the cumulative disturbance of five (5) acres of total impacts including streams, wetlands, and uplands. Suction dredging was acceptable as long as the operation was located within a navigable water (Section 10 waters) and the intake nozzle diameter did not exceed four (4) inches with a power source of no greater than 16 horsepower. The placement of dredged and/or fill material into waters of the United States, including wetlands, was authorized in association of land clearing; construction of sediment basins, stream diversions, foundation pads, access roads and reclamation work; the stockpiling of overburden and placer bearing materials; and similar work. The permit did not apply to any marine or estuarine waters, anadromous streams, or spawning areas of resident game fish. This permit expired on September 1, 1991.

On May 29, 1992, the RGP was reissued for an additional five (5) years and expired on September 1, 1997. The reissued permit was known as POA-1988-00002-M1.

On June 14, 1995, USACE modified and reissued the RGP under file number POA-1988-00002-M2 to allow the impact size to increase from five (5) acres to 10 acres and diversion ditches to increase from 1,000 linear feet to 2,000 linear feet. The permit was expanded to include private lands, anadromous fish streams, and suction dredging. Additionally, the RGP defined more situations in which it can be applied, such as placing dredged or fill material in association with suction dredging, excavation of mine cuts, and the stockpiling of overburden and placer bearing materials. The permit expired in June 2000.

On August 16, 2001, USACE reissued the RGP under file number POA-1988-00002-M3 with an expiration date of August 16, 2006. The RGP stated the cumulative surface disturbance of one (1) project shall not exceed 10 acres including streams, un-reclaimed ground, wetlands, and uplands at any time. This RGP authorized fills for exploratory drill pads, trenches, side casting from trenches, bulk samples, and other test methods in regulated waters of the United States for the purpose of exploration of placer ground in advance of mining. The RGP clearly

defined the difference between placer mining, hardrock mining, recreational mining, and suction dredging. In the authorized activity section, the RGP expanded its use to include the stockpiling of overburden and pay gravel in addition to the previously mentioned activities. A condition requiring the submittal of an annual report form was added to this RGP.

On May 11, 2007, POA-2006-01944 was issued to expedite authorizations for the placement of fill material into waters of the United States, including wetlands, for the purpose of placer mining in the State of Alaska. POA-2006-01944 superseded POA-1988-00002 and all of its modifications. The RGP authorized exploration activities; placement of dredged and/or fill material into waters of the United States, including wetlands, in association with mechanized land clearing, permanent access roads less than five (5) years old or those built just to provide access to the mine site, required reclamation work, stockpiling of tailings, camp facilities if co-located with the mine site, and the previously mentioned activities. Under this RGP, disturbed areas could not exceed 10 acres, and disturbed areas may include streams and diversions, un-reclaimed ground, wetlands, uplands, camps, and access roads; reclamation including mine cuts, settling ponds, stream diversions, berms, work and camp pads, stockpiles, etc. Suction dredging is not authorized by this RGP. This RGP expired on May 11, 2012.

On April 18, 2012, USACE reissued POA-2006-01944-M1 to extend the expiration date from May 12, 2012, to October 31, 2014, to align the renewal cycle of the USACE permit with the renewal cycle of the Alaska Department of Environmental Conservation Alaska Pollutant Discharge Elimination System Permit for Mechanical Placer Mining Operations.

On October 29, 2014, USACE reissued POA-2006-01944-M1 to extent the expiration date from October 31, 2014, to October 31, 2015, to maintain continuity of authorization for persons operating under that RGP while USACE worked to develop a new RGP, POA-2014-00055.

On November 1, 2015, POA-2014-00055 for Placer Mining Activities within the State of Alaska went into effect. POA-2014-00055 superseded POA-2006-01944 and its modification. This RGP: authorized up to five (5) acres of wetland disturbance and/or up to 1,500 linear feet of stream channel diversion or relocation, at any time and excluded uplands; stated operations solely on Federal lands, that meet the terms and conditions of the RGP, would be non-notifying to USACE and would not receive a hard copy of a USACE permit; and created two (2) supplemental forms (“Jurisdictional Determination” and “Mitigation Statement”) that were required with the submission of an application. The RGP expired on October 31, 2020.

On November 2, 2020, USACE reissued and modified the RGP under file number POA-2014-00055-M1. This modification: added a waiver process for 1,500-foot limit on stream diversions/relocations; excluded work in/or affecting anadromous streams and Alaska Department of Environmental Conservation Impaired Waters (Categories 4a, 4b, and 5); excluded the previous provision for a default permit authorization; and added a third supplemental form regarding stream channels. This RGP is set to expire on October 31, 2025.

Since the 2020 reissuance of RGP-08, the permit has been utilized 233 times and authorized the discharge of dredged and/or fill material into approximately 5,000 acres of waters of the United States, including wetlands, across the state.

PERMITTEE PROPOSED MITIGATION: The Permittee is responsible to provide mitigation measures to avoid, minimize, and compensate for impacts to waters of the United States from activities involving discharges of dredged and/or fill material. Mitigation requirements will be decided on a case-by-case basis during the application evaluation process.

a. Avoidance: Avoidance may not be practicable based on mineral location. During project planning avoidance should be considered first, and then minimization only if avoidance is not practicable.

b. Minimization: Minimization measures could include site selection through carefully curated exploration or literature supporting findings that viable minerals would be located within a regulated water. Minimization efforts also include the use of best management practices (BMPs), adaptive management, and progressive reclamation.

c. Compensatory Mitigation: Requirements for mitigation shall be made on a case-by-case basis. No project authorized by this RGP shall create more than minimal adverse functional loss to the aquatic environment. Compensatory mitigation may be required for permanent adverse effects to WOTUS.

WATER QUALITY CERTIFICATION: The RGP will not be issued until a certification or waiver of certification, as required under Section 401 of the Clean Water Act (Public Law 95-217), has been received from the Alaska Department of Environmental Conservation.

CULTURAL RESOURCES: USACE has conditioned the RGP to protect cultural resources. Consultation under Section 106 of the National Historic Preservation Act would occur on an individual basis as needed prior to verifying a project under the RGP. This RGP is being coordinated with the State Historic Preservation Office. Any comments or recommendations they may have will be considered in our final assessment of the described work.

ENDANGERED SPECIES: The reissuance of RGP-08 will have no effect to Federally listed endangered and threatened species, or their critical habitat. Following receipt of a complete application USACE will determine if the specific activity proposed for authorization under RGP-08 would affect Federally-listed endangered, threatened species, or their critical habitat, and will initiate consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service, pursuant to Section 7 of the Endangered Species Act, as appropriate.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the National Marine Fisheries Service (NMFS) on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH).

Preliminarily, the reissuance of the RGP would not affect EFH. EFH consultation would occur on an individual project basis as needed prior to verifying a project under the RGP. This RGP is being coordinated with the NMFS. Any comments or recommendations they may have concerning EFH will be considered in our final assessment of the described work.

TRIBAL CONSULTATION: USACE fully supports tribal self-governance and government to-government relations between Federally recognized Tribes and the Federal government. Tribes with protected rights or resources that could be significantly affected by a proposed Federal action (e.g., a permit decision) have the right to consult with the USACE, Alaska District on a government-to-government basis. Views of each Tribe regarding protected rights and resources will be accorded due consideration in this process. Tribal consultation would occur on an individual project basis as appropriate prior to verifying a project under the RGP. Tribes within the area potentially affected by an individual project will be invited to participate in the Federal decision-making process regarding the protected Tribal right or resource. Consultation may be initiated by the affected Tribe upon written request to the District Commander.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, reasons for holding a public hearing.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts, which the proposed activity may have on the public interest, requires a careful weighing of all the factors that become relevant in each particular case. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. The outcome of the general balancing process would determine whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur. The decision should reflect the national concern for both protection and utilization of important resources. All factors, which may be relevant to the proposal, must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria (see Sections 320.2 and 320.3), a permit will be granted unless the District Commander determines that it would be contrary to the public interest.

USACE is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by USACE to determine whether

to issue, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

AUTHORITY: This permit will be issued or denied under the following authority:

(X) Discharge dredged or fill material into waters of the United States – Section 404 Clean Water Act (33 U.S.C. 1344). Therefore, our public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

Project drawings are enclosed with this public notice.

District Commander
U.S. Army, Corps of Engineers

Enclosures

GENERAL PERMIT (GP) POA-2014-00055-M2
Mechanical Placer Mining Activities within the State of Alaska

AUTHORITY: The District Engineer (DE), Alaska District, U.S. Army Corps of Engineers (USACE), proposes to reauthorize the Regional General Permit (RGP) POA-2014-00055 as RGP-08, for *Mechanical Placer Mining Activities* in the State of Alaska, under Section 404 of the Clean Water Act (CWA) (Public Law 95-217, 33 USC 1344 et seq.).

SUBJECT: This RGP authorizes miners to place *dredged and/or fill material* into *waters of the United States (WOTUS)*, including *wetlands* and streams, for the purpose of *mechanical placer mining* within the State of Alaska, under the terms and conditions of this RGP.

- **NOTE:** In this document Miner, Operator, Applicant, and Permittee are used interchangeably.

- **NOTE**: In this document impacts and disturbances are used interchangeably.

- **NOTE:** Words in *italics* are defined in Appendix A: Definitions, Acronyms, and Abbreviations.

CHANGES FROM PREVIOUS RGP (POA-2014-00055-M1):

- USACE will include all relevant agencies on final *mechanical placer mining* verification letter distribution lists.
- The previously issued RGP allowed for five (5) acres of *wetland*/water *disturbance* at any time, commonly known as a "*rolling footprint*." This RGP no longer allows for the 5-acre "*rolling footprint*" of *WOTUS* disturbance at any time.
    - **NOTE:** A *rolling footprint* is a common *reclamation* term in placer mining. It is still applicable for USACE reclamation, but a *rolling footprint* is no longer used to authorize *WOTUS* impacts for this RGP.
- The total acreage limit for this RGP reissuance is ten (10) acres to *WOTUS*, including *wetlands*, within the 5-year term of the RGP (see Section 4(c)).
    - This RGP reissuance allows USACE to issue a single, one-time waiver for each *single and complete* project within the 5-year term of this RGP (see Section 4(c)), that would allow for up to an additional five (5) acres of *WOTUS* impacts. To qualify, the Permittee must submit sufficient information found within the annual report form demonstrating *successful reclamation* of at least five (5) acres on the previously disturbed areas authorized under this RGP. See the terms and conditions of this RGP for *reclamation* criteria.
    - **With the single, one-time waiver for an additional five (5) acres, the total acreage of disturbance to *WOTUS* authorized under this RGP shall not exceed 15 acres for each *single and complete* project before the RGP expires on October 31, 2030.**

- All *mechanical placer mining operations* must maintain a minimum 25-foot undisturbed, vegetated buffer from flowing *WOTUS*. Certain mining activities are exempt from this. See Section IV "Terms and Conditions for the RGP" for more information on excluded activities.
- Changes and additions were made to portions of the General Conditions of this RGP.
- ***Reclamation*, at a minimum, must meet the criteria for *successful reclamation* and any special conditions included with the verification letter.**

I. ACTIVITIES THAT MAY BE VERIFIED BY THE RGP: *Mechanical placer mining* activities that involve placement of *dredged and/or fill material* into *WOTUS* include:

- Mechanized land clearing; construction of berms or dams; stockpiles.
- Stream *relocations* (permanent); Stream *diversions* (temporary).
- New mine features constructed in *wetlands*, such as airstrips, camps, and roads within the mining operation, and stream crossings (i.e., culvert, bridge, low-water crossings) of *WOTUS* areas when there is a discharge of *dredged or fill material*.
- Permanent access roads and road extensions outside the mining operation.
- *Reclamation* activities.
- Exploration activities for *placer mining*, such as side cast or discharge of *dredged and/or fill material* for exploratory drill pads, trenches, holes, and bulk samples. Exploration activities are strongly encouraged prior to the beginning of *placer mining*.
- Other processes associated with *placer mining*, such as settling ponds, staging mining equipment, etc.
- Deep ripping, for the purpose of thawing permafrost.

    - **NOTE:** All activities involving discharges of *fill and/or dredged materials* that impact *WOTUS* contribute to the 10-acre total *WOTUS* limit (or 15-acre total if a waiver is granted).

II. LIMITS OF THE RGP: If operations exceed the limits of the RGP, or if USACE review indicates that the operation may have a greater than minimal impact on the environment regardless of size, operators may be required to obtain an Individual Permit (33 CFR 325.2(e)(2)).

- This RGP authorizes up to ten (10) acres of disturbance to *WOTUS* for the 5-year term of this RGP (see Section 4(c)) for each *single and complete* project, unless USACE issues a single one-time waiver allowing up to an additional five (5) acres of impact to *WOTUS* for a total of no more than 15 acres. See "Changes from Previous RGP (POA-2014-00055-M1)" section for more information concerning the waiver.
- This RGP authorizes up to 1,500 linear feet of stream impacts for *diversions/relocations* within the 5-year term of the RGP (see Section 4(c)). Once the 1,500 linear feet of stream *diversion/relocation* impacts have been reached by *each single and complete* project, the operator cannot impact

additional linear feet of streams for the remainder of the 5-year term of this RGP (see Section 4(c)). An individual permit would need to be applied for any additional stream impacts needed. Impacts for stream *diversions/relocations* will be included in the acreage footprints described above. All stream *diversion* impacts must be *reclaimed* before the expiration of this RGP.

- **NOTE:** A stream *diversion* and its subsequent *reclamation* are counted once in stream impact calculations. If two (2) separate *diversions* are completed, those impacts are combined to determine the cumulative stream *diversion*/*relocation* impacts. For example, a 750-foot *diversion* at the north end of the mining area and another 750-foot *diversion* at the south end would result in a cumulative total of 1,500 linear feet of stream impacts. This would reach the 1,500-foot stream impact limit of this RGP, and no further stream *diversion* or *relocation* work could be authorized under this RGP.

- Miners cannot commence activities until written confirmation from USACE is received.
- Operations solely on federal lands that fit under the terms and conditions of this RGP do not require notification to the USACE prior to the start of mining activities or the submittal of the USACE Annual Report.
- If an operation on federal lands requires a waiver for an additional five (5) acres of impacts to *WOTUS*, the operator must notify USACE and follow the waiver procedures found in the annual report form.

III. ACTIVITIES NOT COVERED BY THIS RGP: Some of these activities may require a different type of Department of the Army permit issued by USACE other than this RGP. Contact USACE to determine whether a different permit is required.

- Activities in or *affecting anadromous* fish streams or Alaska Department of Environmental Conservation's (ADEC) Impaired Waters.
    - To avoid *affecting anadromous* fish streams or ADEC's Impaired Waters, mine operations and associated activities shall be separated from these areas via an undisturbed, vegetated buffer. The undisturbed, vegetated buffer areas must extend a minimum distance of 25 feet from the *ordinary high water mark* (OHWM) of listed *anadromous* or impaired waters. There are no exemptions for these waters.
- Temporary mining roads.
    - Roads, for the sole purpose of moving mining equipment, where such roads are constructed and maintained in strict accordance with *best management practices (BMPs)*, are exempt from the CWA (33 CFR 323.4 (a)(6)). A temporary road has a limit of **three years**, by which time it must be completely restored to pre-construction conditions.
- Recreational Mining.
    - Use of certain hand tools such as a pick, shovel, pan, and/or rocker box, do not require DA authorization, as addressed in Special Public Notice 94-10, September 13, 1994.
- Commercial Gravel Operations.

    - Sale of overburden/gravel from a *mine site* is not authorized by this RGP.
- Suction dredge mining.
    - Use of a suction device to remove bottom substrate from a water body and then discharge the material from a sluice box for the purpose of extracting gold or other precious metals is not authorized by this RGP.
- Mining/working in or *affecting Navigable WOTUS*.
- Hard Rock or Coal Mining.
    - The process of removing metals or elements within rock is not authorized by this RGP.

IV. TERMS AND CONDITIONS FOR THE RGP (33 CFR Part 325.4)

Due to the substantial variety of geographic and environmental conditions within Alaska, the Terms and Conditions are intentionally less prescriptive. The intent is to allow flexibility in how operations ultimately comply with the terms and conditions of this RGP and the 404(b)(1) Guidelines of the Clean Water Act, including timely *reclamation* of *mine sites*, by inclusion of project-specific special conditions as needed. It is ultimately the responsibility of operators to ensure compliance with the permit Terms and Conditions. Failure to meet the Terms and Conditions may result in corrective compliance measures or enforcement action.

A. GENERAL CONDITIONS (GCs):

The following general conditions must be met in order to be in compliance with this RGP.

In this RGP, the general conditions are organized into three (3) sequential sections that must be followed throughout the placer mining process. The first section outlines requirements for overall *mine site* management and operations, ensuring proper planning and environmental safeguards during active mining. The second section focuses specifically on the management of stream *diversions* and *relocations*, detailing how to minimize impacts to aquatic resources during in-stream work. The final section addresses post-mining *reclamation*, setting standards for reclaiming *wetlands, floodplains*, and *riparian* areas to promote long-term aquatic functions and compliance with the CWA.

During mining operations all USACE authorized activities must not have excessive signs of *erosion* such as, sluffing, slumping, mudflows, or erosional gullies or rills. Specifically:

1. *Mine Site* Management:
    a. Mine operations must be managed to avoid *erosion* of *dredged and/or fill material* from the operation into adjacent and downstream *WOTUS,* including *diversions and relocations*.
        i. Water management features must be designed to slow, collect, direct, filter, and/or retain water at the *mine site* and prevent sedimentation in adjacent and downstream *WOTUS.* These include, but are not limited to, settling ponds, sediment traps, check dams, ditches, filters, natural

vegetation buffers, or other features to manage water on the *mine site*. Appendix B provides additional guidance, tools, and examples operators may use to meet these terms and conditions of this RGP given the uniqueness of each *mine site*.

b. Active *mine site* operations must be separated from active *floodplains* to the maximum extent practicable, via berms, vegetated buffers, diversion ditches, etc.
c. For end of season shut down procedures, ponds, open areas, and any other authorized, ongoing mining activities must be stabilized and have *BMPs* implemented (Appendix B) to prevent degradation and *erosion* into adjacent areas.

2. Management of stockpiles:
   a. Vegetation, woody materials, organic overburden, peat, and other organics must be stockpiled separately from overburden (non-pay and mineral) for use in *reclamation*. *Reclamation* stockpiles should be left in *stable* piles and protected from *erosion* caused by high water events, snow melt, and precipitation.

3. The Permittee must maintain an undisturbed vegetated buffer area around the edge of any flowing *WOTUS* that are located within or immediately adjacent to the *mine site* (i.e., camps, outhouses, staging areas, etc.) in accordance with the following:
   a. Exemptions are allowed for certain stream related mining activities, such as stream crossings, *diversions*, and *relocations* to mine these areas.
   b. The undisturbed vegetated buffer areas must extend a minimum distance of 25 feet from the *OHWM*.
   c. If the undisturbed vegetated buffer zone between the *mine site* and the *OHWM* of the flowing water cannot be maintained, an adequately protective BMP must be employed, such as berms or other BMPs found with Appendix B.

4. Management of *diversions*:
   a. *Diversions* during mining operations must be *stable*, be able to handle periods of high flow, and not display excessive signs of *erosion*.
      i. Channel armoring and flow/grade control structures shall be used to ensure the stability of *diversion* channels. Please see Appendix B for example structures.
   b. GPS points are required for beginning and ending points of *diversions* and *relocations*. This information shall be included in the application and annual report.

Reclaiming stream *diversions* and construction of stream *relocations*:

5. Channel *relocations*:
   a. Must be constructed to approximate natural channel dimensions with *stable* slopes and channel bottoms and blend with the upstream and downstream

connections. If the natural dimensions are unknown or the channel would be shortened, it must include approved additional instream structures that effectively slow the rate of water flow and prevent excessive *erosion.*

i. The channel banks and bottoms must be stabilized and may need to be reinforced with approved structures along sections subject to *erosion*, scouring, or head cutting due to changes in water velocity (e.g., outside curves, narrow reaches).
ii. The channels must be constructed to restore *floodplain* connectivity so the stream may access its *floodplains* during high seasonal water events.
iii. Unless otherwise approved by USACE on case-by-case circumstance, no final stream *relocation* shall be deeply entrenched and resemble a Rosgen F or G stream type.

6. Stream *Diversions*: all stream *diversion* impacts must be *reclaimed* before the expiration of this RGP.

◆ **NOTE:** See Appendix D for stream channel *reclamation* BMPs.

***Wetland and Floodplain reclamation*:**

7. *Reclamation* is required for **ALL** operations. Reclamation at a minimum must meet the below terms and conditions to be considered *successfully reclaimed*. Appendices C and D provide guidance, tools, and examples operators may use to meet these terms and conditions of this RGP given the uniqueness of each *mine site*.
   a. Recontouring and backfilling:
      i. All stockpiled materials must be used in *reclamation*.
      ii. Recontouring and backfilling materials should be layered from bottom to top in the following order: tailings mixed with non-organic overburden, organic overburden, followed by woody debris. Remixing tailings and non-organic overburden will assist in meeting *successful reclamation* criteria.
      iii. Organic overburden should be redistributed for *reclamation* as soon as possible to limit *erosion* and improve the speed and succession of *revegetation*. Typically, four (4) inches of organics (or more if available) is recommended.
      iv. Pits, exploration drill holes, trenches, ditches, and *diversions* must be backfilled and stabilized.
          - When ponds and pits cannot be backfilled and recontoured to mimic natural *WOTUS* areas in the watershed due to the lack of remaining material, shallow ponds shall be created to reclaim aquatic *functions* with irregularly shaped bottoms and complex irregular banks (shorelines) that gently slope and mimic natural shallow ponds and *wetlands* found within the region. If multiple ponds are created, they should be

connected to facilitate the exchange and movement of nutrients and aquatic life. At a minimum, shallow ponds, shall be constructed in a manner to continuously hold surface water during most of the growing season of a typical year. The constructed banks must be *stable* without excessive sluffing/slumping or erosional gullies.

- Other mined *WOTUS* areas must be backfilled and recontoured in such ways to allow for surface water retention or intercept the ground water table and thus enables persistent soil saturation and shallow inundation to promote *revegetation* and encourage reclamation of *wetlands* and other aquatic resources. Please see Appendix C for example aquatic features.
- Ditches and trenches must be backfilled and may be contoured to become swales or other similar channels that manage and disperse water flow to reduce *erosion* and promote *wetland* hydrology to *reclaimed* areas.

v. Compacted areas must be ripped, tilled, or broken up.

8. As mentioned above, *reclamation* must reestablish *floodplain* connectivity to allow streams to overflow and disperse water, energy, nutrients, and sediments onto the land next to the stream during flood events and assist with the *reclamation* of *wetlands* and aquatic *functions*.
   a. As stated above, mined areas shall be backfilled and recontoured to promote water retention and not be backfilled in ways to drain a *WOTUS,* i.e. creation of French drains.
   b. A Permittee must *reclaim* the foundational groundwork to ensure a vegetated *riparian area* can establish around the edge of any flowing (streams) or standing (ponds) *WOTUS* that are located within or immediately adjacent to the *mine site*.
      i. Foundational groundwork includes, but is not limited to:
         - Ensuring enough organics are properly distributed throughout the *Floodplains* and *riparian* areas to allow vegetative growth and are *stable*.
         - Woody debris/slash piles to roughen *floodplains* and slow water velocities.
         - Transplant wings and/or brush bars to assist with *stability* and encourage deposition.
         - The use of transplants, vegetative mats, and/or live stakes is strongly encouraged.
         - Please see Appendix C for more information and additional techniques.

9. *Reclamation* shall be completed within the 5-year terms of this RGP. All reclamation shall be completed no later than October 31, 2030.

- **NOTE:** Operations that have a USACE authorization and are ongoing by the expiration date of the RGP, have an additional 12 months to operate under the terms and conditions of this RGP. The Permittee must notify USACE of the intent to continue mining.

10. *Reclamation* efforts shall be commensurate with the impacts to *WOTUS* to the fullest extent practicable. For example, five (5) acres of *WOTUS* impacts should have the end goal to *reclaim* five (5) acres of *WOTUS* whenever possible.

11. Adaptive management: Operators may have to make adjustments or implement corrective measures to their operations and/or *reclamation* in order to satisfy the terms and conditions of this RGP and/or to address a compliance issue with the CWA. These measures could include, but is not limited to *revegetation*, reuse of settling pond fines to provide growth material in areas targeted for *revegetation*, re-shaping an area, or adjustments to the slope or structures to hold or maintain grade or other activities deemed appropriate and reasonable to satisfy *reclamation* objectives.

12. Operators must follow all conditions listed in the Section 401 Water Quality Certification dated [Date of WQC] and, if needed, their Fish Habitat and/or Fish Passage Permit(s) from the Alaska Department of Fish and Game. For the Permittee's convenience, a copy of the 401 certification is attached.

13. Each year operators must submit the USACE annual report directly to our office (regpagemaster@usace.army.mil) by December 31, regardless of whether or not work was conducted. See additional contact information below. Incomplete reports or unsuccessful *reclamation* may result in non-compliance actions.

    - **NOTE:** If an operation on federal lands requires a waiver for an additional five (5) acres of impacts to *WOTUS*, the Operator must notify USACE and follow the waiver procedures found in the annual report form.

14. RGP authorizations may be transferred from one responsible party to another by submitting a letter of request, or email, to the appropriate USACE office or by sending transfer documentation to the Alaska Department of Natural Resources (ADNR) for posting to their website. Note, the terms and conditions of this RGP, including any special conditions, will continue to be binding on the new responsible party.

15. Should any other agency require and/or approve changes to the work authorized or obligated by this permit, or the Permittee makes changes to their mining plan, the Permittee is advised a reverification of this permit may be required prior to initiation of those changes. It is the Permittee's responsibility to request a reverification of this permit. USACE reserves the right to fully evaluate and approve or deny any request for reverification of work previously authorized

by this RGP.

16. The Permittee named in the verification letter must inform USACE in writing if additional operators are present at the *mine site*, so that they can be added to the permit.

17. Trenches may not be constructed or backfilled in such a manner as to drain *WOTUS* (e.g., backfilling with extensive gravel layers, creating a French drain effect). Ditch plugs or other methods shall be used to prevent this situation.

18. The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete blocks with reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

19. Each Permittee who receives an RGP verification letter from USACE must provide a signed certification documenting completion of the authorized activity and implementation of required *reclamation.* The success of required *reclamation*, including the achievement of ecological performance standards, will be addressed separately by the district engineer. USACE will provide the Permittee the certification document with the RGP verification letter. The certification document attached must be completely filled out and returned to our office within 30 days of completion of the authorized activity or the implementation of required *reclamation*, whichever occurs later.

20. Reliance on Applicant's Data: The determination of this office that use of this permit would not be contrary to the public interest would be made in reliance on the information provided by the applicant, on a case-by-case basis.

21. Reevaluation of Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a revaluation include, but are not limited to, the following:
    a. The Permittee fails to comply with the terms and conditions of this permit.
    b. The information provided by the applicant in support of the permit application proves to have been false, incomplete, or inaccurate (See General Condition 13).
    c. New information surfaces which this office did not consider in reaching the original public interest decision.
    d. Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring the Permittee to comply with the terms and conditions of the permit and for the initiation of legal action where appropriate.

22. Discovery of Previously Unknown Remains and Artifacts: Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this RGP, must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

23. Activities Affecting Structures or Works Built by the United States: If an activity also requires review by, or permission from, USACE pursuant to 33 U.S.C. 408 because it would alter or temporarily or permanently occupy or use a USACE federally authorized Civil Works project (a ‘‘USACE project’’). An activity that requires section 408 permission and/or review is not authorized by this RGP until the appropriate USACE office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written RGP verification.

24. Removal of Temporary Structures and Fills: Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas must be revegetated, as appropriate. Following completion of the activity, temporary structures and/or fills must be removed in their entirety.

25. Tribal Rights: No *mechanical placer mining* activities or operations may impair reserved Tribal rights, resources, or land.

26. Endangered Species: No activity is authorized under this RGP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under this RGP which ‘‘may affect’’ a listed species or critical habitat, unless ESA Section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of ‘‘effects of the action’’ for the purposes of ESA Section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA Section 7 regarding “activities that are reasonably certain to occur” and “consequences caused by the proposed action.”

    For activities that might affect Federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the application must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or

critical habitat proposed for such designation) that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the applicant of USACE determination within 45 days of receipt of a complete application. For activities where the applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in the vicinity of the activity, and has so notified USACE, the applicant shall not begin work until USACE has provided notification that the proposed activity will have “no effect” on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA Section 7 consultation or conference has been completed. If the applicant has not heard back from USACE within 45 days, the applicant must still wait for notification from USACE.

27. No activity is authorized under this RGP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

28. Applicants must submit an application to the district engineer if the *mechanical placer mining* activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the application must state which historic properties might have the potential to be affected by the proposed *mechanical placer mining* activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing applications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the application and these identification efforts, the district engineer shall determine whether the proposed *mechanical placer mining* activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect

determinations for the purposes of Section 106 of the NHPA: No historic properties affected, no adverse effect, or adverse effect.

Where the applicant has identified historic properties on which the proposed *mechanical placer mining* activity might have the potential to cause effects and has so notified USACE, the applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA Section 106 consultation has been completed. For non- federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete application whether NHPA Section 106 consultation is required. If NHPA Section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until Section 106 consultation is completed. If the non-Federal applicant has not heard back from USACE within 45 days, the applicant must still wait for notification from USACE.

B. *MINE SITE* INSPECTIONS, COMPLIANCE, AND ENFORCEMENT: (33 CFR Part 326)

1. The Permittee must keep a copy of the permit at the *mine site* for review. The Notice of Authorization must be visibly posted at the *mine site*.

2. The Permittee must allow the DE to inspect the activity to ensure work is being or has been conducted in accordance with the terms and conditions of this RGP. Refusing access for inspection of the authorized activities is considered permit non-compliance with the terms and conditions of this RGP.

3. Failure to obtain a permit, or to comply with the terms of this RGP, which includes *successful reclamation*, may result in an enforcement or non-compliance action, such as a suspension of work or revocation of the permit. USACE and the Permittee will first work to reach a voluntary mutually satisfactory solution such as obtaining an after-the-fact permit, removal of *dredged and/or fill material,* or other structures, or directed restoration. However, USACE may issue an administrative order requiring compliance if an agreed upon resolution cannot be made. In certain cases, imposition of penalties is provided for under Section 301 of the CWA (33 USC 1319).

C. EXPIRATION (33 CFR 325.2):

1. This permit expires October 31, 2030.

   Operations that have a USACE authorization and are ongoing by the expiration date of the RGP, have an additional 12 months to operate under the terms and conditions of this RGP. The Permittee must also notify USACE of the intent to continue mining.

V. RE-EVALUATION, MODIFICATION, SUSPENSION, AND REVOCATION (33 CFR

325.7):

1. The DE may re-evaluate the RGP and/or any individual authorization verified under the RGP at any time or as circumstances warrant.

2. This RGP may be modified, suspended, or revoked at any time by issuing a Public Notice if the DE finds that the individual or cumulative effects of the authorized activities have an unacceptable adverse impact on the aquatic environment or on the Public Interest.

VI. LIMITS OF THIS AUTHORIZATION AND TO FEDERAL LIABILITY (33 CFR Part 325, Appendix A):

A. LIMITS OF THE AUTHORIZATION: This permit does not grant any property rights or exclusive privileges, does not authorize any injury to the property or rights of others, and does not authorize interference with any existing or proposed Federal Project.

B. LIMITS TO FEDERAL LIABILITY: The Government does not assume liability for:

- Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- Design or construction deficiencies associated with the permitted work.
- Damage claims associated with any future modification, suspension, or revocation of this permit.

VII. HOW TO APPLY:

The Corps of Engineers, Alaska District will accept the Application for Permits to Mine in Alaska (APMA) with the USACE required supplement(s), as a Pre-Construction Notification, pursuant to 33 CFR 320.1 (c). USACE will download APMAs from the ADNR website for review. Applicants also have the option to submit their APMA directly to USACE by sending a complete application to regpagemaster@usace.army.mil.

A. COMPLETE APPLICATION (33 CFR 325.1 (d)): an application is complete and can only be processed when all the following information is submitted:

- **NOTE:** Operations solely on federal lands that fit the terms and conditions of this RGP are *non-notifying.*

1. Provide a 5-year mine plan that includes a description, timeline, location of the operation, and *reclamation* standards for each year of the operation.

2. Current and legible drawings, sketches, or figures with plan views, cross-sections, dimensions (length, width, and depth), and GPS coordinates (latitude/longitude in

decimal degrees) for the outer limits of disturbance for the following mine features:
   a. Cuts, settling ponds, processing plants, and berms
   b. Stream *diversions* and *relocations* (including time period used)
   c. Stockpiles: pay material, overburden, and organic material
   d. Access roads: identify new and pre-existing roads
   e. Camps and airstrips

3. Final plans showing how the *reclamation* would meet *successful reclamation* criteria.

- **NOTE:** Providing the Permittee's mine plan on aerial imagery can simplify the USACE review process.
- **NOTE:** Including the USACE Supplement(s) in an APMA submittal can simplify the USACE review process.

B. USACE REVIEW PROCESS

1. Continue using the ADNR Mining website to submit an APMA and consider submitting the USACE supplement(s) with the APMA. Important considerations: filling out the APMA with current, detailed information can result in more timely permitting actions. It is useful to provide pictures of planned *mining sites* with the APMA.
   a. We will contact an operator for additional information or to inform them if a permit is not required. If a *mine site* operator has not been contacted, please reach out to USACE. Work within *WOTUS* cannot commence without USACE authorization. Operators are always welcome to apply directly to USACE by sending an application to regpagemaster@usace.army.mil or calling USACE for more information. For more information, please see the USACE Alaska District Regulatory website: https://www.poa.usace.army.mil/Missions/Regulatory/.

2. There is no application deadline; however, to ensure that an operator receives a permit in time to begin operations, submittal of a complete application by January is encouraged.

- **NOTE: The APMA is not a USACE permit. To be certain that an operator obtains a USACE permit, contact one of our offices directly at least 60 days prior to starting any mining activity.**

3. No fee will be collected for applying for this RGP.

FOR THE DISTRICT COMMANDER

30 October 2025

Janet Post
Chief, North Branch
Regulatory Division
Alaska District Corps of Engineers

Corps of Engineers Regulatory Division
Alaska District Office & Southeast Field Office

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2204 3rd St. Suite #201E
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Toll free: 800-478-2712
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Insert WQC

APPENDIX A: DEFINITIONS, ACRONYMS, AND ABBREVIATIONS

Definitions

1987 Corps of Engineers Wetland Delineation Manual: The federal delineation manual, dated January 1987, used in the CWA, Section 404 Regulatory Program for the identification and delineation of *wetlands*. The manual requires evidence of *wetland* vegetation, soils, and hydrology in order to determine that an area is a *wetland* (https://www.nwp.usace.army.mil/Portals/24/docs/regulatory/jurisdiction/Wetland_Delineation_Manual.pdf). There are different procedures for conducting onsite delineations, by collecting field data, and offsite determinations, from aerial and *mine site* photos.
2007 Alaska Regional Supplement to the Corps Wetland Delineation Manual: The federal regional guidebook to identifying *wetlands* in Alaska (http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/erdc-el_tr- 07-24.pdf).
Affecting: Any impact that reduces the quality and/or quantity of *anadromous* or impaired waters. Effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components.
Anadromous: Referring to a fish or fish species that spends portions of its life cycle in both fresh and salt waters, entering fresh water from the sea to spawn. In Alaska, examples of *anadromous* fish species include *anadromous* forms of Pacific trout and salmon of the genus *Oncorhynchus*, Arctic char, Dolly Varden, smelts, and sturgeon.
At any time: Areas of *wetland disturbance* and/or length of *stream diversion or relocation* can never exceed the limits (unless waived) of the RGP during any point (this includes during a single day), until such time as they are *successfully reclaimed*.
Best Management Practices (BMPs): techniques and strategies designed to prevent or *minimize* pollution, protect natural resources, and promote sustainable practices.
Diversion: A stream channel *diversion* is considered a temporary feature for the purposes of this RGP, with the intent of moving the stream back to its approximate original location. A *diversion* may only be in place for the 5-year term of this RGP and must be reclaimed before the RGP expires on October 31, 2030.
Dredge and fill material: The term *dredged material* means material that is excavated or *dredged* from *waters of the United States*. Any addition, including redeposit other than incidental fallback, of material, including excavated material, into *waters of the United States* which is incidental to any activity, including mechanized land clearing, ditching, channelization, or other excavation. The term *fill* material means material placed into *waters of the U.S.* that has the effect of either replacing any portion of a *water of the U.S.* with dry land or changing the bottom

elevation of any portion of a waterbody. Examples of "*fill material*" include rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mining or other excavation activities, and materials used to create any structure or infrastructure in *waters of the U.S.* The placement of overburden, slurry, tailings, or similar mining-related materials is included in the definition of "discharge of *fill material*" regulated under Section 404 of the CWA (Final Definition of Fill, 2002).
Erosion: Dispersal of soil particles, sediment, or gravel by wind or water. For the purpose of this RGP, *dredge and fill material* must not show signs of *erosion*, beyond the *mine site* and into *waters of the U.S.* Indicators of excess *erosion* include rills, gullying, head cutting, caving, block slippage, material sloughing, mudflows etc.
Floodplain: The lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year. For the purposes of this RGP, *floodplains* and *riparian areas* are used interchangeably.
Functions: The physical, chemical, and biological processes that occur in ecosystems. *Wetland functions* include water quality improvement, floodwater storage, fish and wildlife habitat, aesthetics, pollution attenuation, and biological productivity. Stream *functions* include moderating stream temperatures, filtering sediment and pollutants from surface runoff, slowing flood waters, buffering storm runoff, and reducing peak flows during rain events. Healthy rivers provide aid in natural flood control by absorbing excess rainwater and reducing flood risks downstream, *erosion* reduction, improved water quality by pollution reduction and maintaining healthier environments downstream. Streams play a critical role in nutrient cycling and supporting diverse ecosystems and fish and wildlife habitat.
High flow: Refers to periods when a river or stream carries more water than usual, often due to heavy rainfall or snowmelt.
Mechanical placer mining: The removal of gold or other precious materials from alluvial gravels using mechanized equipment.
Mine Site: All features of a mining operation authorized under "Section I. Activities Covered by the Permit."
Minimization: Measures to reduce impacts to *waters of the U.S.*, including *wetlands*. Examples include but are not limited to constructing a drainage ditch around the mine operation to collect and redirect overland flow away from the mine operation; stockpiling organic overburden separately from inorganic overburden for use in *reclamation*; constructing settling ponds to collect sediment laden water within the *mine site*; and using an old creek channel for a stream *relocation*.

Minimization Plan: 33 CFR 325.1 (d)(7) A descriptive statement that explains how an applicant plans to avoid and *minimize* impacts to *waters of the U.S.*
Navigable Waters: Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) *Navigable waters of the U.S.* are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity (33 CFR Part 329.4).
Non-notifying: A *non-notifying* RGP 8 is an activity that does not require a pre-construction notification (PCN) to the U.S. Army Corps of Engineers (USACE). To proceed with a *non-notifying* RGP 8, the project proponent/applicant must operate solely on federally managed lands and *affect* no more than 10 acres of *WOTUS* during the life of this RGP.
Ordinary high water mark (OHWM): The line on the shore established by the fluctuations of water, and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR 328.3(e) and RGL 05-05).
Reclamation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of mimicking natural/historic aquatic *functions* of a natural/undisturbed site found within the same watershed.
Relocation: A stream channel *relocation* is a permanent (i.e., more than 5 years) realignment including creation of a *stable* bank, stream bed, and *floodplain* connectivity that is similar with respect to upstream and downstream conditions.
Revegetation: Activities that include, but are not limited to, natural *revegetation*, and use of locally available materials, including native seeds, dormant woody cuttings, transplanting, or other methods.
Riparian Areas: *Riparian areas* are the areas bordering rivers and other bodies of surface water. They include the *floodplain* as well as the *riparian* buffers adjacent to the *floodplain*. For the purposes of this RGP, *floodplains* and *riparian areas* are used interchangeably.
Rolling Footprint: Also known as concurrent or phased *reclamation*, involves *reclaiming* parts of a *mine site* while mining operations are still ongoing.
Single and Complete: For non-linear projects, the term "*single and complete project*" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one

owner/developer or partnership or other association of owners/developers. A *single and complete* non-linear project must have independent utility (see definition of "independent utility"). *Single and complete* non-linear projects may not be "piecemealed" to avoid the limits in a general permit authorization.

Stable: Not likely to give way or overturn; firmly fixed.

Successfully reclaimed: When an operator has *reclaimed* an area so that all of the terms and conditions of this RGP are meet, and the following steps have been accomplished:

- *Reclamation* must be approved, in writing, by USACE to be considered complete.
- Backfill of pits, recontouring, and respreading organics to initiate *revegetation*, ensure stability, and promote the reestablishment of aquatic resources, and *minimize erosion*.
- *Successfully reclaimed* areas are no longer a part of the active mining operation.
- Stream channel *diversions* have been *reclaimed*.
- Stream channel *relocations* are constructed to satisfy *floodplain* connectivity, be of appropriate length and other dimensions to manage water movement without excessive *erosion* of bed or banks, and *revegetation* has been initiated.
- All components of the *mine site* are *stable*.
- *Floodplain*/*Riparian areas* must have sufficient organic material distributed across the areas promote the regrowth of *riparian* vegetation.

Uplands: There is no regulatory definition of *uplands*, except that they do not satisfy *wetland* criteria. An *upland* is missing at least one of these criteria: hydrophytic vegetation, hydric soils, or *wetland* hydrology during the growing season of a typical year.

On *mine sites*, *uplands* may include old tailings, camps, roads or airstrips. These areas may have been *wetlands* that were filled under a prior GP or before the CWA. *Mine sites* may also include naturally occurring *upland* areas that do not satisfy *wetland* criteria.

Waters of the United States (WOTUS): Include all waters listed at 33 CFR Part 328.3. For the purposes of this RGP, this includes *wetlands* and perennial (year-round) and intermittent (seasonal) streams that have a downstream connection to *navigable waters*.

Wetland: An area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3(b)).

Wetland disturbance: Area of disturbance in *wetlands*, measured dimensionally, for example: "x" cubic yards into "x" acres of *WOTUS*. The *wetland disturbance* includes all activities and mine features constructed by placing/redistributing *fill* into *wetlands*. See Section I, "Activities covered by the permit."

APPENDIX B: BEST MANAGEMENT PRACTICES (BMPs) DURING MINE SITE PLANNING AND OPERATION

The BMPs presented in this document are intended to provide general guidance for effective planning and operation of disturbed areas, including wetlands and aquatic resources. However, not all BMPs will be appropriate or effective for every mine site or operational context. Site-specific conditions, such as hydrology, soil type, topography, vegetation, climate, and equipment limitations, must be carefully considered during project planning. Successful planning and operation require site-specific design of structures and features, and thoughtful placement of materials. An adaptive management approach, where outcomes are regularly monitored and practices are adjusted as needed, is critical to address evolving conditions and ensure long-term reclamation success. Compliance with all applicable federal, state, and local regulations remains the responsibility of the operator.

The purpose of these BMPs is to assist and guide miners in identifying and implementing ways to minimize adverse environmental impacts, particularly to water quality, aquatic resources, and downstream habitats, by promoting site-specific, practicable techniques for controlling runoff, stabilizing disturbed areas, and managing sediment discharges during and after mining operations in order to support compliance with the terms and conditions of this RGP. The information below is not an exhaustive list of available techniques. BMPs referenced in this document may be known by different common names depending on regional practices, agency guidance, or local industry terminology. While the basic functions and principles of these BMPs remain consistent, users should be aware that alternative names may be used in different contexts or guidance materials.

Mine Site Planning: Having a solid mine plan before starting the permitting process is critical to the financial, regulatory, and environmental success of any placer mining operation.

- Winter trails or traveling when the ground is frozen can minimize impacts to wetlands and other aquatic resources, especially when moving heavy machinery.
- Wash all machinery prior to transport to the site to control the spread of invasive species.
- Utilize proper wildlife timing for all mining related activities so that wildlife, such as migratory birds and fish are not harmed by mining activities.
    - For migratory bird windows, please see the United States Fish and Wildlife Service Information for Planning and Consultation (IPaC) tool (https://ipac.ecosphere.fws.gov/).
- For construction of roads or airstrips borrow material should be taken from upland sources whenever feasible. Please see General Condition 18 above.
- If roads must be placed within waters of the United States (WOTUS), create conditions to maintain hydrology and avoid road washout, such as properly sized culverts or properly designed low-water stream crossings.
- Exploration should be conducted to provide valuable information on the lateral and vertical extent of a deposit; gold grades within that deposit; and how much overburden must be removed to reach the pay. This information can be used to

avoid and minimize impacts to WOTUS for areas that are not economically viable to be mined.

- When creating a site plan place mine camps, staging areas, and stockpiles, etc., in adjacent uplands, whenever possible.
    - However, the overburden stripped off before mining and the tailings produced during operations should be stockpiled and staged at or near where they would be needed during reclamation, making it easier and less expensive to level, shape, and contour the rock and gravel ahead of covering with organic material that would encourage native vegetation regrowth.
- Early in the planning and exploration process, assess the mine areas for features that could aid in reclamation actions. This includes features such as vegetation borrow sites to assist with revegetating areas or for bioengineered bank stabilization; vegetative mats that can be stripped from areas to be mined to reclaim wetlands, streambanks, and riparian areas; historic upland tailings stockpiles that could provide materials to aid in reclamation; mine site geometry; etc.
    - Ensure borrow sites, vegetative mats, etc., are located in authorized areas and are approved for use by the land managing agency.
    - Use bioengineering to the maximum extent practicable. Bioengineering may include willow layering and transplanting for erosion control. Use what is available on site. Salvage, stabilize, and revegetate with timeliness in mind using phases and seasonal development strategies.
        - Collect cuttings in winter and early spring to use in reclamation activities.
        - Plan to stabilize and revegetate disturbed areas with local, native plants within the same season, as practicable.
- Consider conducting reclamation concurrently with active mining activities (rolling footprint or phased reclamation).
- Plan to create benches and terraces on steep slopes to minimize potential impacts from erosion into adjacent WOTUS.
- Design the mine plan to capture and control sheet flow to minimize erosion and capture sediments.
    - For example: ditches and berms around the mine site leading to settling ponds.
- A series of multiple settling ponds allowing sediment (dirt) to settle out of the water prior to reuse would help lower the quantity and improve the quality of water leaving the mine site. These ponds should be designed to slow the flow of water; the longer the water stays within the pond system, the more opportunity the sediment would have to settle out. The length of the pond system determines the travel and settling time, and the pond depth determines how much sediment the pond can hold.
- Berms, including any pond walls, dikes, dams, and similar water retention structures should be constructed in a manner such that water is not reasonably expected to overtop and/or compromise the structures.

Construction Sequence: Good site planning and preservation of mature vegetation are imperative for reclamation and controlling runoff water both during and after mining activities. Properly planning and staging major earth disturbing activities can also dramatically decrease the costs of control measures. In addition, the details about the control measures used during construction would provide Permittees with a written record to support these decisions in terms of the placement and design of the on-site control measures, and it would give potential inspectors a way of verifying that the control measures were attempted should failure occur.

Mine Site Operation and Management: Once a robust mine plan has been established, the mine site should be constructed to manage the water and overburden and tailings in a manner that satisfies the terms and conditions of this RGP.

- To help stabilize and control erosion and runoff in the disturbed areas, many features planned for above can be used to control, direct, and guide water at the mine site.
    - Mine site conditions may vary from an operator's plans so adaptive management (see General Condition 11 above) may be needed as the operation progresses (i.e., changes to grading, berms and ditches, location of trenches, etc.).
- Slash piles, i.e., accumulations of natural woody debris (limbs, tops, and smaller pieces) left behind after mechanized land clearing/ stripping of site, may be quickly placed in locations where changes are needed to address immediate runoff/erosion concerns.
- Stockpiled and any other disturbed material should have erosion and sediment BMPs around them to preclude reentry into any WOTUS, which includes wetlands.
    - Approved siltation control measures include, but are not limited to, silt fences, fiber rolls, waddles, coir logs, sediment traps, ditches, berms and settling ponds.
- Steep slopes are especially susceptible to erosion and, where steep slopes would be disturbed on the mining site, applicable practices to minimize erosion from steep slopes include, but are not limited to, reducing continuous length of slope with terracing and benching, reducing slope steepness, roughening slope surfaces (e.g., track walking), and temporary or permanent stabilization.
    - Additionally, operators can use interceptor dikes and swales, grass-lined channels, pipe slope drains, subsurface drains, and/or check dams (See Figure 1. Rock check dams) to divert concentrated flows of runoff water away from disturbed portions of the slope. These measures would minimize the amount of runoff flowing across the face of the slope and decrease the erosion of that slope.

Figure 1: Rock check dams in a roadside ditch.
From Mile High Flood District (2024).

- Locate fuel storage areas on state mining claims at least 100 feet from natural occurring water bodies. BLM strongly recommends storing fuel outside of the 100-year floodplain on federal claims.
- Equipment should be inspected regularly for leaks. If leaks are found, the equipment should be repaired immediately to prevent fuel, oil, hydraulic fluid, or any other hazardous material from entering an aquatic resource.
- Refuel equipment away from aquatic resources.
- Increasing the vegetated buffer width, especially on steeper slopes or near sensitive water bodies, can significantly improve the effectiveness of the vegetated buffer.
- Design vegetated buffers to be wider in erosion-prone or hydrologically sensitive areas.

To minimize the impacts of erosion around aquatic resources, these tools may be used:

- Control water volume and velocity to minimize soil erosion and material discharges.
- Control water discharges, including both peak flowrates and total water volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.
- Minimize the amount of soil exposed during construction activity.
- Minimize the disturbance of steep slopes outside the mining area.
- Minimize sediment discharges from the site. The design, installation, and maintenance of erosion and sediment controls should address factors such as the amount, frequency, intensity, duration of precipitation; the nature of resulting water runoff; and soil characteristics, including the range of soil particle sizes expected to be present on the site.
- Dissipate water runoff into open vegetated swales and natural depressions to reduce in stream impacts of erosive flows.
- Stabilize all disturbed areas of the site to minimize erosion and sedimentation and the resulting discharge of material. A Permittee should ensure that existing vegetation is preserved, and a natural buffer is maintained wherever possible, and

disturbed portions of the site are stabilized. A Permittee should avoid using impervious surfaces for stabilization. Applicable stabilization control measures include, but are not limited to:
    - Temporary and permanent seeding;
    - Sodding;
    - Mulching;
    - Rolled erosion control product;
    - Compost blanket;
    - Soil application of Polyacrylamide (PAM).
- Include the following control measures to handle water and total water volume discharges as they apply to the site:
    - Divert water around the site so that it does not flow onto the project site and cause erosion of exposed soils (diverting water around the site can be an effective measure as long as it does not cause flooding and/or erosion offsite);
    - Slow down or contain water that may collect and concentrate within a site and cause erosion of exposed soils;
    - Avoid placement of structural control measures in active floodplains to the degree technologically and economically practicable and achievable;
    - Place velocity dissipation devices (e.g., check dams, sediment traps, or riprap) along the length of any conveyance channel (of erodible materials) to provide a non-erosive flow velocity. Also place velocity dissipation devices where discharges from the conveyance channel or structure join a water course to prevent erosion and to protect the channel embankment, outlet, adjacent stream bank slopes, and downstream waters; and
    - Install permanent water management controls, where practical, so that they are functional prior to construction of site improvements (e.g., impervious surfaces).
- Install appropriate protection measures (e.g. filter berms, perimeter controls, temporary diversion dikes, etc.) to minimize the discharge of sediment prior to entry into inlets located on site or immediately downstream of the site.
- Install appropriate protection measures (e.g. velocity dissipation devices) to minimize the discharge of sediment prior to entry into the water body for water bodies located on site or immediately downstream of the site.

Vegetated Buffers

- Areas of natural or established vegetation that help protect water quality during construction.
- Slow runoff, filter sediment, reduce erosion, and prevent streambank collapse.
- Design vegetated buffers to be broader in erosion-prone or hydrologically sensitive areas.
- Most effective along floodplains, wetlands, streambanks, and unstable slopes.
- May be required by local regulations or permits near sensitive waters (e.g., impaired or exceptional waters).

Soil Stabilization and Erosion Control

- Use biodegradable netting (e.g., jute, sisal, coir) in erosion control products.
- Avoid plastic-based netting; if used, ensure it is wildlife-safe with loose-weave designs.
- Promptly remove temporary erosion controls like silt fences when no longer needed.
- Clearly mark areas of disturbance and no-disturbance to protect surrounding vegetation and sensitive features.
- Preserve existing vegetation and stabilize disturbed soils as soon as practicable.
- Stabilization methods include seeding (temporary/permanent), mulching, geotextiles, and sod.

Phasing and Exposure Minimization

- Minimize the duration of soil exposure by phasing construction activities.
- Limit the area disturbed at one time (e.g., clear/mine 5 acres of a 10-acre site, then reclaim before clearing the remainder of the site).

Sediment Control Measures

- Install sediment controls on all down-slope and side-slope perimeters of disturbed areas.
- Design and maintain controls appropriate to the site (e.g., buffer strips, silt fences).

Interception Berms and Ditches

- Construct berms or swales across slopes to intercept and divert runoff.
- Route water to stable outlets or basins; include check dams on steep slopes.
- Ensure positive drainage to prevent ponding.

Check Dams

- Used in diversions and site ditches to reduce water velocity and channel erosion.
- Remove trapped sediment before dam removal.

Sediment Traps

- Small basins that allow sediment to settle from runoff before it exits the site.
- Located at site discharge points or in drainageways.

Spring Thaw and Site Stabilization

- Stabilize disturbed soils, slopes, ditches, and stockpiles before spring thaw.
- Implement erosion controls in advance where runoff is expected.

General Erosion and Runoff Management

- Control water volume and velocity to minimize erosion and discharges.
- Minimize exposure and disturbance of steep slopes.
- Design erosion controls based on site conditions (soil, rainfall, runoff patterns).
- Divert offsite water around construction areas (without causing offsite impacts).
- Slow or contain onsite water to prevent erosion.
- Avoid structural controls in floodplains where feasible.
- Install velocity dissipation devices (e.g., check dams, riprap) in channels.
- Install permanent controls early when possible.

- Divert concentrated flows away from slopes using dikes, drains, swales, etc.

Stabilization Methods

- Use seeding, sodding, mulching, compost blankets, erosion control products.
- Apply gravel base early in areas to be paved.
- Avoid impervious materials for stabilization.

Inlet and Waterbody Protection

- Install sediment controls (e.g., filter berms, diversion dikes) near inlets and waterbodies.
- Use velocity dissipation at discharge points into nearby waters.

APPENDIX C: WETLAND RECLAMATION BEST MANAGEMENT PRACTICES (BMPs)

The BMPs presented in this document are intended to provide general guidance for effective reclamation of disturbed areas, including wetlands and aquatic features. However, not all BMPs will be appropriate or effective for every mine site or operational context. Site-specific conditions, such as hydrology, soil type, topography, vegetation, climate, and equipment limitations, must be carefully considered during project planning. Successful reclamation requires proper planning, site-specific design of structures and features, and thoughtful placement of materials. An adaptive management approach, where outcomes are regularly monitored and practices are adjusted as needed, is critical to address evolving conditions and ensure long-term reclamation success. Compliance with all applicable federal, state, and local regulations remains the responsibility of the operator.

As with during operations, water management is crucial for the wetland reclamation success of a project. Wetlands need to be kept wet, and water managed to reduce erosion. In other words, water needs to be managed to maintain desired water levels and flow regimes in reclaimed wetland areas. Many BMPs/structures mentioned above may be used or left in place to help manage water in reclaimed areas.

Using Media Lunas in Wetland Reclamation at Placer Mine Sites

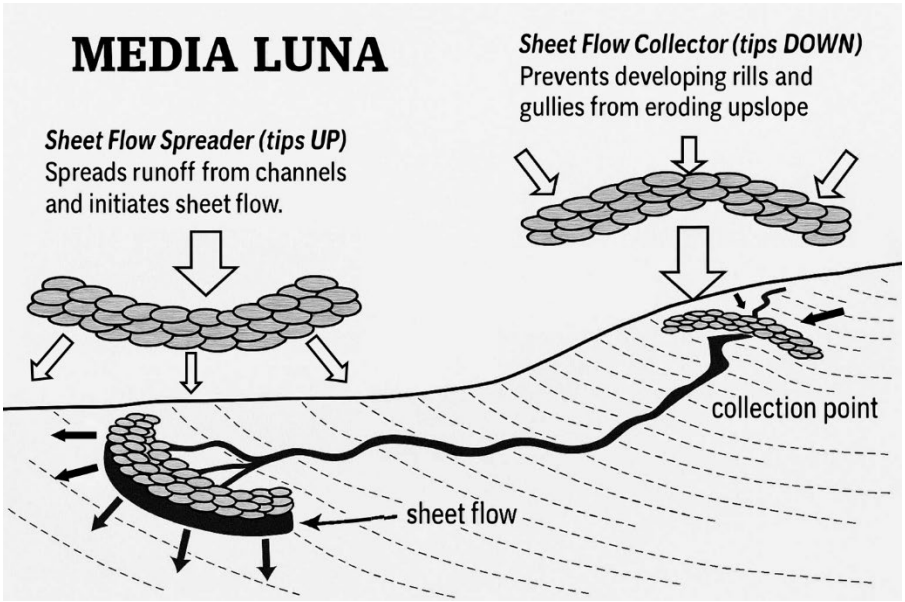

Figure 2: Media Luna Diagram. From USACE (2025)

- Media Lunas: Crescent-shaped rock structures designed to slow down water flow, spread runoff, and encourage sediment deposition.
    - Tips up media luna is a sheet flow spreader used on relatively flat ground to disperse erosive channelized flow and reestablish sheet flow to spread water across a site.

    - Tips down media luna prevent erosion (i.e. rills/gullies) by collecting sheet flow and creating a transition from sheet flow to channel flow.
- Slow and Spread Water: Install *tips-up* media lunas on gentle slopes to spread runoff and encourage surface saturation, which is ideal for wetland regeneration.
- Retain Moisture in Depressions: Place around recontoured pits or swales to help hold seasonal water and promote wetland vegetation.
- Support Sediment Deposition: Slow flow allows fine sediments to settle, creating better soil conditions for native plant growth.
- Protect Vegetation: Use with vegetative plugs or mats behind the structure to retain moisture and reduce erosion.
- Stabilize Drainage Paths: Helps prevent new rills or gullies from forming on reclaimed floodplains or benches.

Uses of Log Spreaders in Wetland Reclamation:

- Water Dispersion and Flow Spreading
    - Help distribute water more evenly across recontoured floodplains and wetlands.
    - Reduce concentrated flow paths that can cause erosion or gully formation.
    - By spreading flow, they encourage sheet flow across vegetated areas, promoting wetland hydrology.
- Sediment and Nutrient Retention
    - Logs slow water velocity, which allows sediments and organic material to settle behind the structure. This supports soil development, nutrient cycling, and vegetation establishment.
- Habitat Enhancement
    - Logs create microhabitats, such as pools and riffles, which benefit amphibians, invertebrates, and fish (where appropriate).
    - Promote diverse vegetation by holding moisture and fostering different hydrologic zones.
- Support for Vegetative Establishment
    - The slowed, spread-out water helps maintain saturated soil conditions, essential for the reestablishment of hydrophytic plants in wetlands.
- Design Considerations:
    - Proper anchoring is critical to prevent flotation or washout during high flows (e.g., buried logs, cross bracing).
    - Spacing should reflect slope and hydrology: closer spacing on steeper slopes or where erosion is a concern.
    - Use native or untreated wood to avoid chemical leaching and maintain ecological compatibility.
    - Logs can be placed perpendicular or angled to flow depending on the desired effect (e.g., spreading vs. deflecting).
- Other options:
    - Rock Mulch Rundowns: Channels lined with rocks to safely convey water down slopes, reducing gully formation.
    - Brush Weirs: Structures made from branches and vegetation placed across gullies to slow water flow and trap sediment.

Use of organic overburden is another crucial factor in successful wetland reclamation. Proper stripping and stockpiling techniques would help ensure healthy organics to reclaim a site with, proper stockpiling is required by the RGP. Organic soils are rich in nutrients and microbial communities essential for re-establishing wetland vegetation. They help retain moisture and improve soil structure in reclaimed areas.

- If surrounding reclamation site conditions lack good topsoil supplies (possibly the result of historically mined sites), settling pond fines can be used to supplement soil to help promote revegetation.

Properly designed shallow ponds have been a major focus for placer mining reclamation activities and have shown success, but diversity of wetlands is important and the RGP requires all material to be used for reclamation to minimize impacts and reclaim the site to a similar state as before mining operations.

However, ponds, pits, and other disturbed areas do not always need to be completely backfilled. In certain locations these areas may be recontoured below grade to form low-lying floodplains, pockets, depressions, catchment basins**,** and/or swales that can help capture/collect and retain water, encouraging wetland reclamation. Likewise, to help these areas collect water, adjacent areas should be graded to slope towards these aquatic features.

<u>Key points for pit/pond reclamation:</u>

- Backfill and recontour pit and pond edges into gentle, low-relief landforms (e.g., swales, pockets, and depressions) that blend into the surrounding terrain.
- Design the reclaimed surface to mimic a natural floodplain, especially near stream channels. Broad, flat, and slightly undulating surfaces are ideal.
- Grade surrounding disturbed ground to slope slightly toward the pockets or swales (about 1-2% slope), so runoff or seepage would collect naturally in low areas.
- Avoid steep slopes or sharp berms around depressions. Keep transitions soft and natural-looking to help vegetation establish and reduce erosion.
- Place woody debris or root wads in low spots to create habitat increase roughness and retain moisture longer.
- Leave some small, excavated features partially intact if they are already holding water or staying moist. These features can develop into marshes or sedge meadows (i.e., wetlands) over time.
- Monitor water retention and vegetation. Adjust grading as needed if water is not collecting as planned or if surfaces are drying out too fast.
- Ensure pond bottoms are below the low water table.
- Ensure marsh areas are below the high-water table and, generally, near the low water table.

Forebays are often found near runoff water ponds, dams, or mining reclamation sites to help manage water quality and prevent erosion. They often consist of a smaller ponded area that is designed to catch sediment. Then it drains/flows into or over a shallow, partially vegetated, stabilized area before then draining into another larger ponded location before return water enters a stream. See example diagrams below.

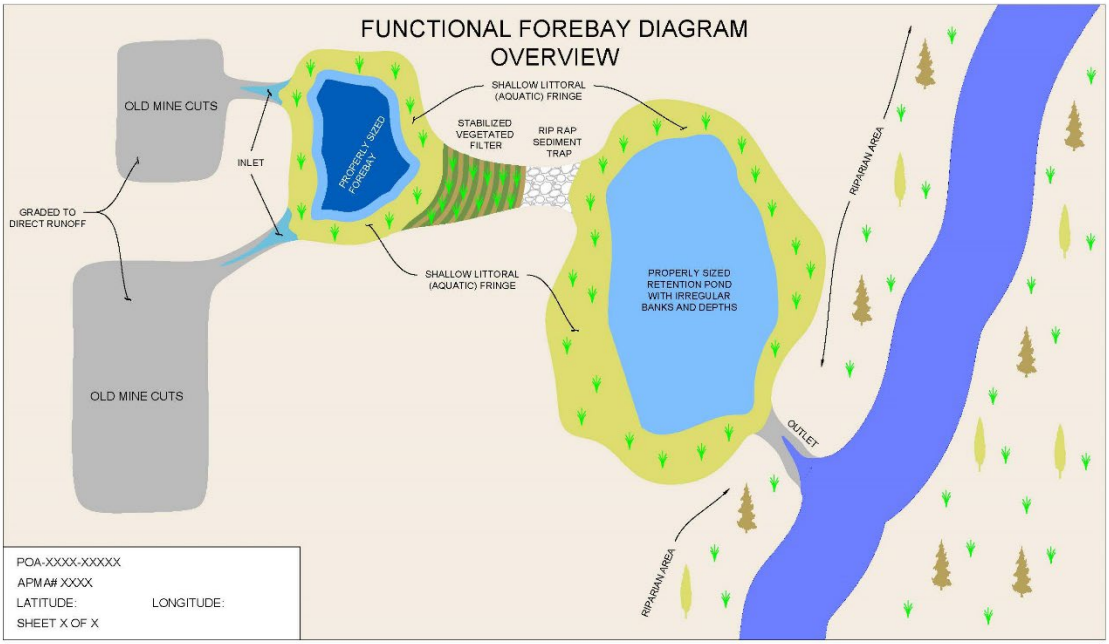

Figure 3: An example of a functional forebay diagram overview plan. From USACE (2025).

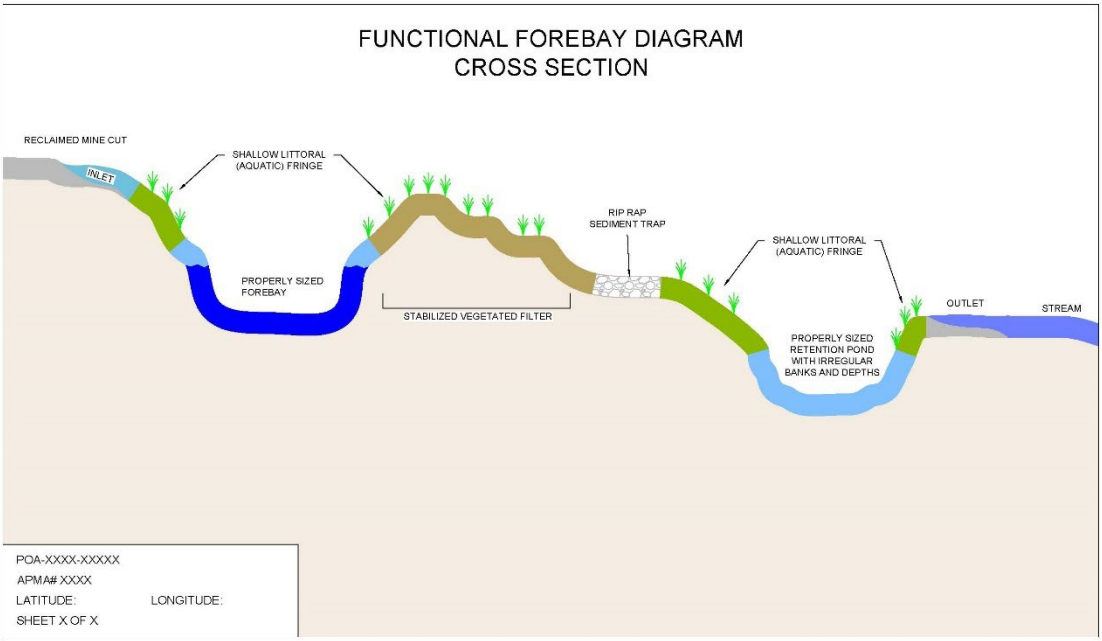

Figure 4: An example of a functional forebay diagram cross section plan. From USACE (2025).

Transplant wings should be positioned perpendicular to the stream flow to reduce flow velocities and encourage deposition. Transplant wings extend from the toe of the streambank and tie into the adjacent hillslope in order to encourage reestablishment of riparian zones. The width of transplant wings and brush bars is typically around 10 to 20 feet.

- For more information, please see the BLM's March 2023 Stream Design and Reclamation Guide for Interior Alaska: Technical Report #65, page 92.

Brush bars are a mix of live and dead cuttings placed on the edge of the streambank perpendicular to the flood flow. Their purpose is the same as transplant wings, to slow flood velocities and encourage deposition. Brush bars are not as robust as transplant wings but are a good substitute on sites where transplants are not plentiful or as a way to augment transplant wings. Another benefit is that brush bars can be installed by hand and do not require the use of heavy equipment. Over time, the brush bars will grow and expand, providing a method for revegetating the riparian zones.

- For more information, please see the Bureau of Land Management's (BLM) March 2023 Stream Design and Reclamation Guide for Interior Alaska: Technical Report #65, page 93.

Vegetative mats are typically a section of sod composed of native wetland plants (like sedges, mosses, grasses, and rushes), containing intact roots, shoots, and often organic-rich soil, harvested from a healthy donor area (before disturbance or next areas to be

disturbed) and reapplied to a reclamation site. It is essentially a living piece of wetland or riparian vegetation moved and replanted to quickly reclaim ecological function.

Key points for vegetative mats:

- Scout the area first to identify healthy, undisturbed wetland or riparian vegetation (sedge meadows, mossy areas, grassy mats). Look for spots with thick root mats and organic-rich soil, ideally before disturbance.
- Use a flat or smooth-edged bucket and avoid sharp teeth, if possible, as they can tear the vegetation. If only a toothed bucket is available, modify the digging technique to minimize root shredding (e.g., shallow skimming instead of deep digging).
- Start by cutting small sections. Lower the bucket and tilt slightly forward, then gently push to slice just beneath the root zone (about four (4) to six (6) inches deep). Aim for chunks about two (2) to three (3) feet wide and as long as manageable (approximately four (4) to six (6) feet). This makes them easier to transport and replant.
- Lift slowly and carefully. Curl the bucket back gently to lift the mat without breaking it apart. Keep the mat horizontal to avoid losing soil or breaking up root mass.
- Stack vegetation-side up. If storing, place the mat in a shaded, moist location, stacked no more than two (2) to three (3) mats deep. Lightly spray with water if needed to keep roots moist, especially during hot/dry periods.
- Label or flag mats if harvesting from different vegetation types (e.g., sedge-dominant vs moss-dominant) to match site conditions during replanting.
- Replant as soon as possible. Place the vegetative mat directly on reclaimed surfaces, press in with bucket or by hand, and tuck soil around edges to ensure good contact and prevent drying out.

Vegetative plugs are smaller than vegetative mats and often contain only one plant species. Plugs should be harvested from a healthy donor community before disturbance with hand tools and/ or excavators. Plugs are particularly well suited for planting in wetlands, constructing grass rolls or being divided into sprigs. Sprigs are the smallest transplant unit, consisting of a single shoot with roots.

Key Point for Plugs:

- Dig a plug with a shovel. A plug may range from two (2) to ten (10) inches in diameter. It is important to include as many roots and as much soil as possible with each plug. Plant plugs so that the new soil level matches the soil level of the donor site. If the planting site is dry, the plug should be planted in the center of a small depression that will catch and retain water. The soil around the plug should be pressed firmly into place.

APPENDIX D: STREAM CHANNEL MANAGEMENT

The BMPs presented in this document are intended to provide general guidance for effective reclamation of disturbed areas, including wetlands and aquatic features. However, not all BMPs will be appropriate or effective for every mine site or operational context. Site-specific conditions, such as hydrology, soil type, topography, vegetation, climate, and equipment limitations, must be carefully considered during project planning. Successful reclamation requires proper planning, site-specific design of structures and features, and thoughtful placement of materials. An adaptive management approach, where outcomes are regularly monitored and practices are adjusted as needed, is critical to address evolving conditions and ensure long-term reclamation success. Compliance with all applicable federal, state, and local regulations remains the responsibility of the operator.

Slope is one of the most important factors in stream reclamation because it directly influences flow energy. Higher slopes increase water velocity and erosion potential, making energy management a critical design goal. Energy can be dissipated by increasing friction and roughness within the channel. Using natural materials and features that slow flow and reduce scour. Stream reclamation designs should prioritize simplicity and be tailored to the specific characteristics of the stream; understanding the river's seasonal flow stages is essential, especially during the construction period. Structural treatments can be either permeable or impermeable. Permeable structures, such as logs, rot wads, or brush bundles, allow water to pass through while reducing velocity and encouraging sediment deposition. In contrast, impermeable structures like rock vanes redirect flow away from vulnerable banks. Where a stream exhibits vertical instability or headcutting, grade control measures should be implemented first, as stabilizing these features is fundamental to the overall success and sustainability of the reclamation effort.

Prevent Entrenchment and Avoid Rosgen F/G Stream Types: Where floodplains are connected to a river and periodically inundated, interactions of land, water, and biology support natural functions that benefit river ecosystems and people. Unless otherwise approved by USACE on case-by-case circumstances, no final stream reclamation should resemble Rosgen F or G stream types.

- Entrenchment refers to the degree to which a river channel is vertically confined within its valley. It is a measure of how easily a river can access its floodplain during high flows.
    - F and G stream types are associated with gorge or canyon valley types and are typically not associated with placer mine sites located in valleys. G and F stream types often lead to prolonged instability and unsuccessful reclamation.
- Avoid deep, narrow, incised channels that lack floodplain connectivity.
    - Construct inset floodplains within confined valleys to allow overbank flow during high water.
    - Incorporate media lunas and log spreaders on adjacent floodplain areas to diffuse and spread high flows, promoting floodplain connectivity.
    - Avoid steep valley walls and entrenched alignments typical of Rosgen F or G types unless natural site conditions require it and USACE has approved it.

- Toe slope stabilization involves reinforcing the base (toe) of an eroded or steep streambank to prevent further vertical and lateral incision. It can use rock or other natural materials (e.g., logs, root wads, rock toes, vegetated lifts) placed along the lower portion of the bank. This technique integrates well with other methods like live stakes, vegetative mats, and boulder cross vanes.

Figure 5: An example of toe slope stabilization. From ERDC's Streambank Erosion and Protection course (2022).

- Promotes Bank Layback:
    - Stabilizing the toe may help provide a firm foundation to reshape the upper banks at a gentler slope, reducing their angle (e.g., from 1:1 to 3:1 or flatter) as water erodes portions above the stabilized toe.
    - This gradual grading mimics natural floodplain profiles and creates benches or terraces.
- Encourage Overbank Flow:
    - As banks become shallower, high flows can more easily overtop the channel, reactivating the floodplain during peak events.
    - Overbank flow supports wetland regeneration, sediment deposition, and energy dissipation.

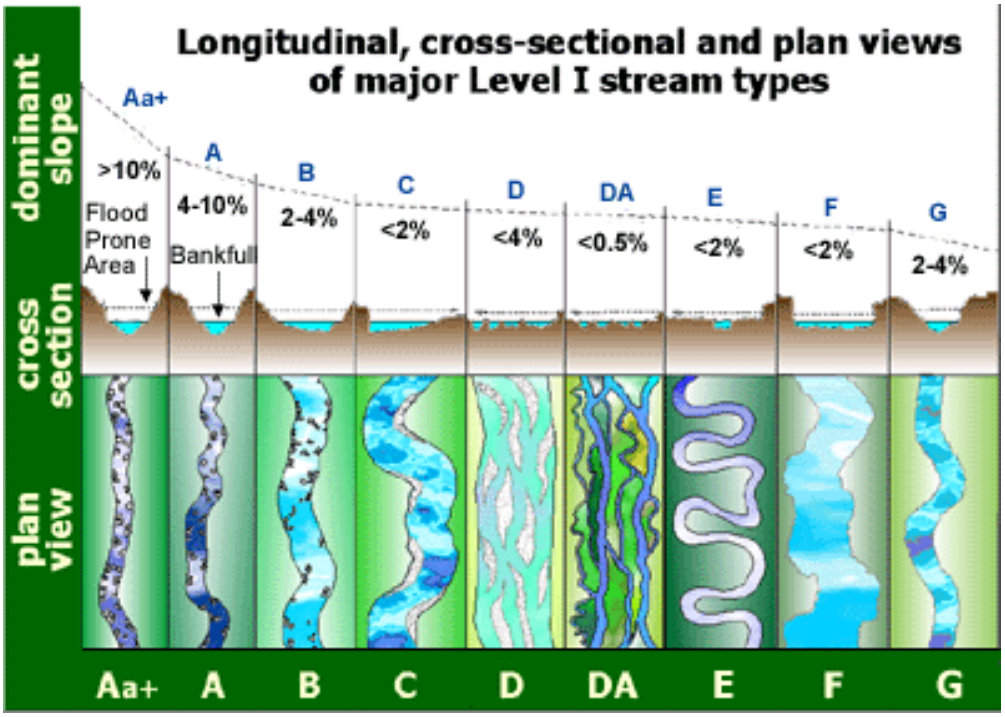

Figure 6: This diagram compares the longitudinal (as seen from the side), cross-sectional (bank to bank), and plan (as seen from above) views of each of the nine major stream types in the Level I classification of Rosgen stream types. From Rosgen, D.L. (1998).

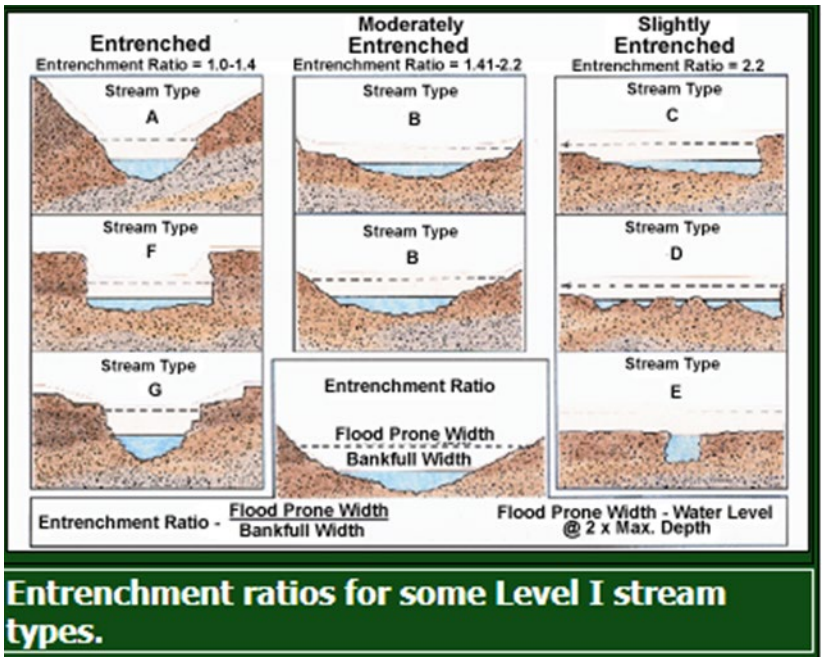

Figure 7: The entrenchment ratio measures how flood-prone the stream is based on how high the channel is. A

high ratio (>2.2) indicates slightly entrenched rivers, or rivers that easily flood. A low ratio (1-1.4) indicates highly entrenched streams, or streams that would have trouble escaping their banks. From Rosgen (1994).

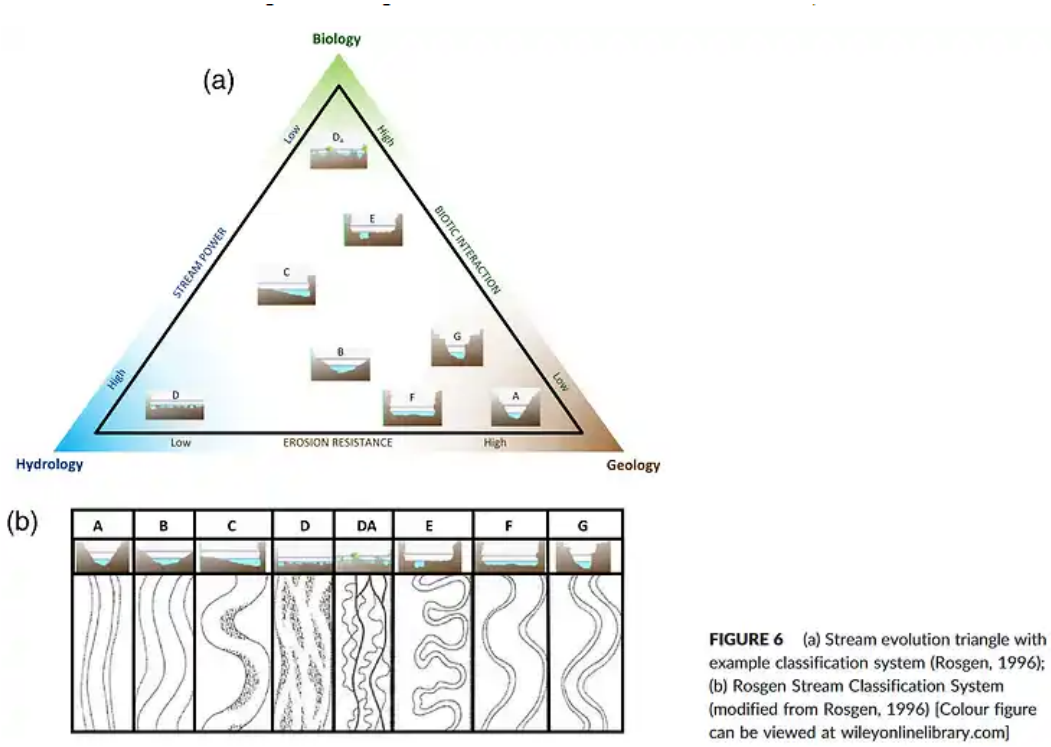

FIGURE 6 (a) Stream evolution triangle with example classification system (Rosgen, 1996); (b) Rosgen Stream Classification System (modified from Rosgen, 1996) [Colour figure can be viewed at wileyonlinelibrary.com]

Figure 8: The Stream Evolution Triangle (SET) represents the relative influences of geology (erosion resistance), hydrology (stream power), and biology (biotic interaction). From Castro and Thorne (2019).

Bedform Diversity: Diverse stream beds dissipate stream energy, contribute to channel stability, and provide a suite of habitats needed by many fish species.

- Promote hydraulic complexity and aquatic habitat.
    - Construct riffle-pool or step-pool sequences using a mix of gravels, cobbles, boulders, and logs placed irregularly to break up uniformity.
    - Use root wads, woody debris, and boulder clusters to create microhabitats and flow variation.
    - Mimic natural stream substrate heterogeneity. Do not grade streambeds smooth or uniform.
    - Where feasible, install log weirs or cross-vanes to concentrate flow in riffles and maintain pool depth.
- To remain in compliance with this permit the stream bed should contain variations in bed materials, such as gravel, sand, rocks, logs, root balls/wads and boulders, as well as different patterns and shapes of sediment deposition. Substrate may not

appear uniform or organized while creating riffle/step-pool sequences or other in-stream structures.

Stream Sinuosity (K ≥ 1): Sinuosity serves as a key indicator of river health, behavior, and the interactions between water and landforms, with implications for ecology, hydrology, and human activities. Stream channel sinuosity (K) is calculated by dividing the length of the selected stream channel (Ls) by the straight-line distance between the end points of the selected channel reach (Lv). Unless otherwise approved by USACE on case-by-case circumstances, no stream relocation or diversion will result in channelization.

- Prevent channelization and ensure natural meander development.
    - Design reclaimed channels with sinuosity greater than (≥) 1.0.
    - Layout channels using topographic maps and pre-disturbance alignments to guide natural meanders.
    - Use woody debris or flow deflectors to promote channel curvature and reduce straight-line flows.

Figure 9: Sinuosity of a stream. From Rosgen (1998).

Riparian Vegetation Establishment: Riparian vegetation improves functions for water quality and channel stability of streams. The requirement is the re-establishment of a 25-foot wide, vegetated riparian area above the ordinary high water mark (OHWM), adjacent to the stream channel, unless otherwise approved by USACE on case-by-case circumstances.

- **NOTE:** OHWM is the USACE's jurisdictional limit under Section 404 of the CWA. See the Wetlands Regulatory Assistance Program (WRAP) National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams Final Version (January 2025), https://erdc-library.erdc.dren.mil/items/76c61f8f-

6d75-4a35-aaf3-39aa64918afb.

- Stabilize banks and support channel functions.
    - Harvest vegetative mats before mining and transplant post-mining along the OHWM to jumpstart revegetation.
    - Apply native seed mixes and dormant woody cuttings (e.g., willow stakes) on streambanks and riparian zones.
    - Use biodegradable erosion control blankets to retain moisture and promote seedling growth.
    - Plant in rows perpendicular to the flow to reduce shear stress and trap sediments.
        - Make sure to leave small paths/tracks to allow for adaptive management need be.
    - Establish a minimum 25-foot vegetated buffer above OHWM and monitor plant coverage over three (3) to five (5) seasons:
        - By the end of three (3) growing seasons, riparian areas should have 30% live native plant cover.
        - By the end of five (5) growing seasons, riparian areas should have 70% live native plant cover.
- As in Appendix B, transplant wings and brush bars are tools that should be considered for in-stream reclamation as well.
- Transplant wings should be positioned perpendicular to the stream flow to reduce flow velocities and encourage deposition. Transplant wings extend from the toe of the streambank and tie into the adjacent hillslope in order to encourage reestablishment of riparian zones. The width of transplant wings and brush bars is typically around 10 to 20 feet.
    - For more information, please see the BLM's March 2023 Stream Design and Reclamation Guide for Interior Alaska: Technical Report #65, page 92.
- Brush bars are a mix of live and dead cuttings placed on the edge of the streambank perpendicular to the flood flow. Their purpose is the same as transplant wings, to slow flood velocities and encourage deposition. Brush bars are not as robust as transplant wings but are a good substitute on sites where transplants are not plentiful or as a way to augment transplant wings. Another benefit is that brush bars can be installed by hand and do not require the use of heavy equipment. Over time, the brush bars will grow and expand, providing a method for revegetating the riparian zones.
    - For more information, please see the Bureau of Land Management's (BLM) March 2023 Stream Design and Reclamation Guide for Interior Alaska: Technical Report #65, page 93.

Velocity Dissipation and Grade Control: Place velocity dissipation devices (e.g., check dams, boulder cross veins, riffle pool complexes, or other grade control structures) along the length of any conveyance channel to provide a non-erosive flow velocity dissipator. Also place velocity dissipation devices where flows from the conveyance channel join a water course to prevent erosion and to protect the channel embankment, outlet, adjacent stream bank, and downstream waters.

- Prevent erosion and reduce channel incision.

- Install rock check dams, media lunas, or natural log grade controls at intervals based on slope and flow rate.
- Build boulder cross-vanes or constructed riffles to create energy dissipation zones and mimic natural steps.
- Use step-pool sequences in steeper reaches to prevent headcutting and maintain grade.
- Place spreader logs or rock aprons at channel junctions and outfalls to dissipate flow and protect embankments.
- Ensure grade control structures are embedded below the streambed to prevent undercutting.

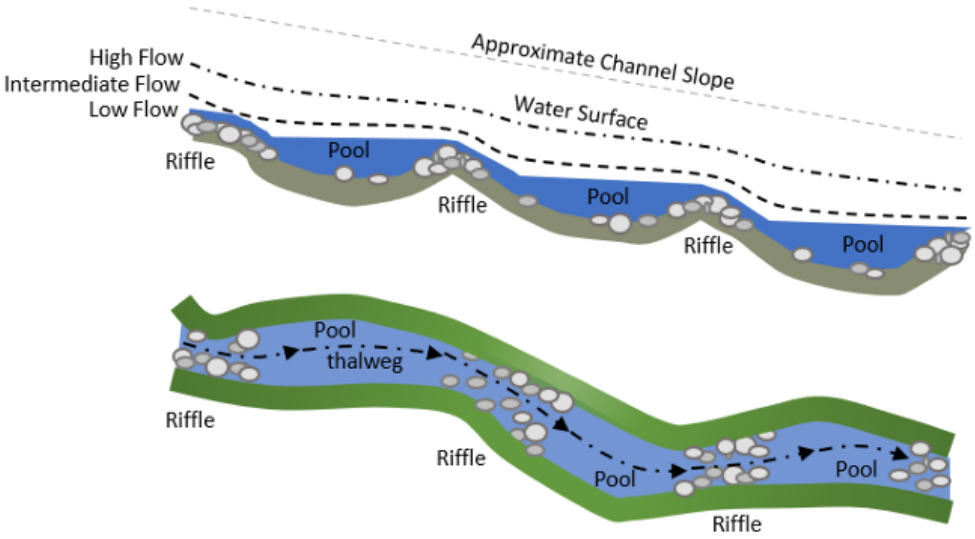

Figure 10: Diagram of a riffle-pool sequence. Adapted from Dunne & Leopold (1978).

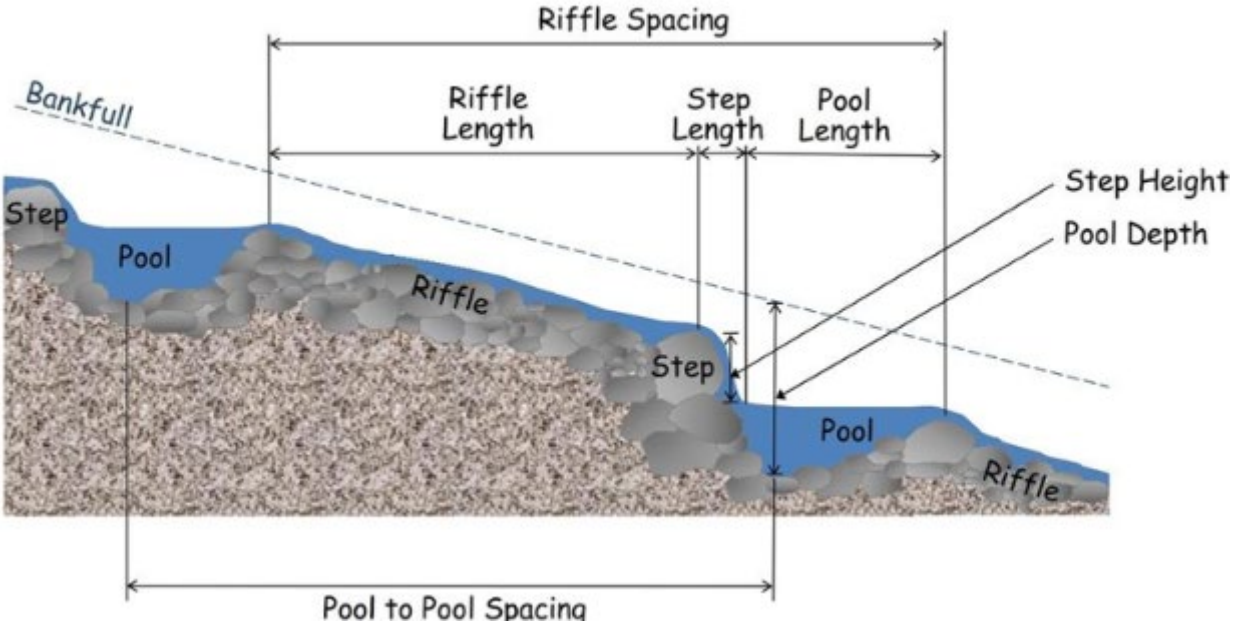

Figure 11: Additional diagram of a riffle-pool sequence. Adapted from Thompson, D.M. (2018).

Monitoring & Adaptive Management

- Track plant survival with annual monitoring reports and supplement if vegetation fails to meet standards.
- Inspect grade controls during spring melt and after storm events; repair or adjust structures as needed.
- **Submit the annual report to USACE by December 31 of each calendar year!**

<u>Key points for stream management:</u>

- Prevent vertical incision and entrenchment.
- Reconnect floodplains and restore overbank flow.
- Promote channel stability and bedform diversity.
- Maintain stream sinuosity and reduce erosion.
- Reestablish native riparian vegetation.