
Operating, Closure and Reclamation Guidelines for DMTS Material Sites

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1 Introduction

The DeLong Mountain Regional Transportation System (DMTS) was established in 1986 to support the Red Dog Mine and surrounding mining district. The 52 mile long road connects the Red Dog Mine to the DMTS Port facility on the Chukchi Sea. To facilitate construction of the DMTS road and port, 16 materials sites were opened during construction to provide roadbed fill. Many of these materials site remain in operation today as sources for road construction and maintenance materials and secondarily as water withdrawal sources for dust control.

The DMTS materials sites lie on lands owned by the NANA Regional Corporation (NANA), Cape Krusenstern National Monument, administrated by the National Park Service (NPS), and the State of Alaska, administrated by the Alaska Department of Natural Resources (ADNR). Four of the materials sites also lie within the Cape Krusenstern National Historic Landmark Archeological District.

AIDEA owns the DMTS and has invested \$267 million for its construction. Teck Alaska Incorporated has contracted with AIDEA for a priority non-exclusive right to use the DMTS system until 2040 to ship ore concentrates over the road, store concentrates in the storage buildings, and load concentrate onto ore ships. Teck pays a toll for use of the facilities and is obligated to operate and maintain the system at a commercially reasonable rate of compensation.

Operation of the DMTS materials sites is subject to agreements between AIDEA, NANA, TAK and the NPS. The Operating, Closure and Reclamation Guidelines for DMTS Material Sites has been prepared to satisfy those agreements.

Locations of the DMTS materials sites within are shown on Figures 3-1 through 3-17.

1.1 Plan Objectives

The objectives of this guideline are to describe how TAK, on behalf of AIDEA, intends to operate, maintain, reclaim and close the DMTS material sites not in use with respect to its governing agreements. This plan will address the following:

- A summary of the governing agreements
- Facility descriptions
- Operating procedures
- Maintenance procedures
- Environmental protection and mitigative measures
- Environmental monitoring
- Reporting

This document is **not** intended to be a site specific closure and reclamation plan. TAK intends to use the information contained within this document in writing specific reclamation and closure plans as they are warranted for individual material sites.

1.2 Agreements Governing this Plan

The following agreement and clauses reference the operation, maintenance, and reclamation of the DMTS materials sites:

Terms and Conditions Governing Legislative Land Consolidation and Exchange between NANA Regional Corporation, Inc. And The United States Of America, June 1986 (“NANA/NPS Agreement”).

Exhibit B, (A) Development and Operations Planning

For any surface disturbance activity resulting in more than \$10,000 1984 dollars (\$18,797 2005 dollars)... measures will be taken by NANA to meet the following standards:

1. Prevention or mitigation of significant visual impacts...
2. Protection of fish and wildlife...
3. Protection of cultural and paleontological resources...
4. Reclamation of all material sites and construction sites
5. Protection of threatened or endangered fish, wildlife and plants
6. Protection of water quality...

Exhibit B, (B) Red Dog Mine Transportation System

Plans and applications for the System to be reviewed under the provisions of this section (B) will address, at a minimum, the following:

5. General and Miscellaneous.
 - p. Rehabilitation
 - (1) Removal of all temporary facilities, including storage facilities, equipment, unused materials and supplies from the land, and restoration of the disturbed areas remaining.
 - (2) Revegetation of all disturbed ground with indigenous species, if available, feasible, and practicable.
 - (3) Reclamation of materials sites and access roads, when closed.
 - (4) Reasonable measures to reduce visual impact from the surrounding area.
 - r. Material Site Development...
 - (1) Development of any material site and the extraction of materials shall be in accordance with all of the provisions of Exhibit B as supplemented by this subparagraph r.
 - (2) No activities shall take place easterly or southerly of or within 0.2 miles of the stream draining from the southeast side of the lake in the SW1/4 sec. 12, T. 27 N., R. 22 W., Kateel River Meridian, and descending to the Ornikviorok River through sections 12, 13, 14, 15, 21 and 22, T. 27 N., R. 22 W., Kateel River Meridian.

- (3) The access road to any material site shall avoid wetlands to the greatest extent possible, shall minimize visual intrusions and shall be as short as practical.
- (4) Any vehicle access to a material site, prior to construction of the System to the immediate proximity of the material site, must take place within the road corridor as defined in subparagraph (B)3 b.
- (5) No, blasting shall take place during the period May through August if such blasting adversely impacts on nesting raptors and nesting or molting waterfowl at adjacent lakes, wetlands, or along the stream described in subparagraph r(2).
- (6) Material sites will be shut down as soon as no longer needed in the construction or maintenance of the System and its related facilities. Shut down material sites will be rehabilitated. When a site is permanently closed, the access road thereto shall also be rehabilitated and blocked from further vehicle use.
- (7) No vehicular use of the access road shall be allowed except in conjunction with extraction of materials. Use of the access road may be restricted by the National Park Service if such use adversely impacts on nesting raptors and nesting or molting waterfowl at adjacent lakes, wetlands, or along the stream described in subparagraph r(2).
- (8) Use of the surface of these lands is limited to that necessary for the extraction, processing, storage and transportation of materials and rehabilitation of the site. No permanent structures shall be constructed on these lands.

DeLong Mountain Transportation System Amended And Restated Agreement For Financing, Construction, Use Operation And Maintenance Between Cominco Alaska Incorporated And The Alaska Industrial Development And Export Authority.

Article 13.4 Remediation. Cominco shall consult with AIDEA prior to proposing any final plan for remediation of any portion of the DMTS required to be filed with any governmental agency with authority to conduct, monitor or oversee and Enforcement or Remedial Action.

Development and Operating Agreement between NANA Regional Corporation, Inc. And Cominco American Incorporated.

Further, Operator must obtain NANA's approval of its mining and restoration plans for extraction of sand, gravel and similar substances before such extraction is commenced. NANA's approval shall not be unreasonably withheld.

2 Description of the DMTS Materials Sites

During construction of the DMTS from the Chukchi Sea sixteen materials site were opened to provide material for the road bed, bridge approaches, turnouts and facility

pads. The materials sites are 1 to 7 miles apart and are numbered in sequence as they were opened during road construction from the Chukchi Sea to the Red Dog Mine. One additional material site was constructed after the road was completed for material that was used at the mine site.

Four of the materials sites are currently active as crushed aggregate sources as embankment fill, surface coarse, rip rap, and road “sand”. Six of the sites are permitted for water withdrawal for DMTS road dust control. The sites are summarized in Table 1.

Operating, Closure and Reclamation Procedures for DMTS Material Sites
Teck Alaska Incorporated

Table-1								
Site	Miles (from Port)	Land Ownership & Rights	Area of Site (acres)	Material Use	Other Authorized Uses	Rock Type	Reclamation Plan or Use Status	Notes
1 - 1E	0	NANA-owned	46.0	Embankment fill, surface coarse	N/A	Beach Sand and gravel	Closed, naturally reclaimed.	Sand dune borrow areas during construction of Port
2A	0.75	NANA-owned	16.2	Offshore cell fill, surface coarse		Hunt Fork Shale	Active, graded and reseeded in 1997. Additional material placed in 2000 reseeded in 2004.	Adjacent to Port CSBs; operated during DMTS construction. AKA Mt Hood
2	1.9	NANA-owned (A-2 land conveyed by NPS)	41.7	Embankment fill, surface coarse, rip rap, road "sand"	Water withdrawal and sanitary landfill	Hunt Fork Shale	Active	ADNR Temporary Water Use Permit F2002-10; withdrawal not to exceed 200,000 gallons per day, year-round usage. ADEC Solid Waste Disposal Permit #0312-BA003.
3	8.1	Easement on Nat'l Mon	19.2	Embankment fill, surface coarse, rip rap	Water withdrawal	Kayak shale	Inactive, reclaim as accessible wetland	ADNR Temporary Water Use Permit F2002-10; withdrawal not to exceed 200,000 gallons per day, year-round usage.
4	11.7	Easement on Nat'l Mon	11.6	Embankment fill		Kayak shale	Closed, planed for reclamation and closure .	
5	17	Easement on Nat'l Mon	21.5	'Embankment fill, surface coarse, rip rap, road "sand"	Water withdrawal	Kayak shale	Inactive, potential for future use	ADNR Temporary Water Use Permit F2002-10; withdrawal not to exceed 200,000 gallons per day, year-round usage.
6	18.3	Minerals only easement on Nat'l Mon	26.6	'Embankment fill, surface coarse, rip rap	Water withdrawal	Kanayut sandstone and maroon shale	Inactive, reclaim as accessible wetland	ADNR Temporary Water Use Permit F2002-10; withdrawal not to exceed 200,000 gallons per day, year-round usage.

Operating, Closure and Reclamation Procedures for DMTS Material Sites
Teck Alaska Incorporated

Table-1								
Site	Miles (from Port)	Land Ownership & Rights	Area of Site (acres)	Material Use	Other Authorized Uses	Rock Type	Reclamation Plan or Use Status	Notes
7	25.5	Easement on ADNR land	8.9	Embankment fill		Ikalukrok chert and shale	Inactive, 1500 feet of access road partially reclaimed in 1988	
8	29.3	Easement on ADNR land	34.9	Embankment fill		Siksikpuk shale	Closed, pit area reseeded in 1988, access road needs to be pulled.	Reclamation unsuccessful on elevated portion of roadway.
8A	30.6	Easement on ADNR land	18.6	Embankment fill, rip rap		Kogruk, dolomitic limestone	Closed, access road reclaimed in 1988	
9	33.5	Easement on ADNR land	25.3	Embankment fill, high float test material, surface coarse	Water withdrawal	Kogruk, dolomitic limestone	Active	
10	38.3	Easement on ADNR land	14.9	Embankment fill and rip rap	Water withdrawal	Kanayut conglomerate and sandstone	Active, reclaim as accessible wetland	ADNR Temporary Water Use Permit F2002-10; withdrawal not to exceed 200,000 gallons per day, year-round usage.
11	40.5	Easement on ADNR land	40.7	Embankment fill and surface coarse	Water withdrawal	Perched river gravel	Inactive, reclaim as accessible wetland	ADNR Temporary Water Use Permit F2002-10; withdrawal not to exceed 200,000 gallons per day, year-round usage. ADNR State Land Use Permit ADL416299; limit 25,000 cubic yards/year. 6.04 acre original disturbance
12	42.8	Easement on ADNR land	30.7	Embankment fill, surface coarse, rip rap		Kanayut conglomerate and sandstone	Inactive	
13	46.2	NANA-owned	40.2	Embankment fill and rip rap		Siksikpuk, lower member, shale	Inactive as material site.	Rock cut that was incorporated into DMTS Road design.
14 Buddy	47.5	NANA-owned	15.9	Embankment fill		Kogruk,	Inactive as	Rock cut that was

Table-1								
Site	Miles (from Port)	Land Ownership & Rights	Area of Site (acres)	Material Use	Other Authorized Uses	Rock Type	Reclamation Plan or Use Status	Notes
Ck Cut						dolomitic limestone	material site.	incorporated into DMTS Road design.
Limestone	Off road near 46	NANA-owned	3.0	ARD mitigation		Kogruk, dolomitic limestone	Inactive, the access road has naturally revegetated.	Accessed in winter via ice road.

Table 1

2.1 Material Site 1 -1E

Chukchi Sea beach sand was removed from the back beach area of five contiguous sites north from the DMTS Port dock for a distance of 2.1 miles covering approximately 46 acres. The sand was used to construct the initial two miles of the DTMS Road and pads for Port facilities. The sites were operated for two years and have since been reclaimed naturally by storm surges and wind.

Long shore currents deposit sand in the vicinity of the DMTS dock and loading facilities. Maintenance dredging is conducted on an annual basis to maintain adequate water depths around the dock and loading facilities. Additionally, TAK relocates a minimum of 15,000 cubic yards of sand annually to mitigate the accumulation of sand on the north side of the shallow water dock. A portion of sand from these activities may be stockpiled on the beach and purchased from the Alaska Department of Natural Resources under State Land Use contract -ADL417193. Typically, the sand may be used for road sanding and construction purposes at the Mine and DMTS Port.



View of MS-1a-f looking northwest.

2.2 Material Site 2A

This material site consists of material removed during the construction of the foundations of CSB 1 and later CSB 2. The site was referenced in the NANA- NPS agreement as Material Site 1. The most recently extracted material has been stockpiled on the south east side of the DMTS Road and is used intermittently for coarse construction fill material. The older material at the site was graded and reseeded with native graminoids in 2001. The 16 acre site is located on NANA land. Both the Hunt Fork Formation shale and the Kanayut Formation conglomerate and sandstone have been excavated at this site.



View of the materials extracted from MS-2a looking east.

2.3 Material Site 2 (MS-2)

Material site 2 was formally part of the Cape Krusenstern National Monument and was conveyed to NANA as part of the A-2 lands. The 42 acre site is actively used as a materials site, a water withdrawal source (The water source is precipitation that accumulates within the site) and a sanitary landfill for the DMTS Port Site (ADEC Solid Waste Disposal Permit #0312-BA003). The bedrock of the site is Hunt Fork Formation shale.



View of MS-2 looking east.

2.4 Material Site 3 (MS-3)

This material site is currently used predominately as a water withdrawal site for dust control activities on the DMTS Road. The water source is precipitation that accumulates within a 4.6 acre portion of the excavation. The capacity is approximately 37 acre-feet of water. The 19 acre site is located on an easement within the Cape Krusenstern National Monument. The northwest portion of the site which was used as a materials storage pad during construction of the road was reseeded in 1988. Bedrock at this site is Okpikruak Formation sandstone and shale.



View of MS-3 looking northwest.

2.5 Material Site 4 (MS-4)

The 12 acre material site 4 was closed in 1988. Access to the site was blocked by removal of the culvert at the junction of the access road with the DMTS Road. Most of the highwall of this quarry was rounded off and the slopes and base were reseeded in 1988. Good vegetative growth only exists on the stockpile and northwest margin. The site is located on an easement within the Cape Krusenstern National Monument. Bedrock is Kayak Formation shale with minor limestone.



Aerial view of MS-4, looking west with Straight Creek in the foreground.

2.6 Material Site 5 (MS-5)

Material site 5 is presently inactive and periodic interest has been shown in reactivating it. The highwall of this site has been the site of nesting raptors and quarry activities were restricted to prevent harassment of the nesting birds. The 21 acre site is 600 feet northeast of the Omikviorok River on an easement within the Cape Krusenstern National Monument. An overburden storage area to the northwest of the pit was reseeded in 1988 and supports a diverse plant community. Bedrock at the site is Okpikruak Formation shale and sandstone.



View of MS-5 looking northwest. DMTS Road in foreground.

2.7 Material Site 6 (MS-6)

Material site 6 is used occasionally both as a materials site and a water withdrawal location. The water source is a depression of approximately 0.8 acres. It is located 1.7 miles southeast of the DMTS Road, farther from the road than any of the other sites. It is approximately 0.5 mile south of Mud Lake on a 27 acre easement within the Cape Krusenstern National Monument. The easement is on A-5 lands of the NANA-NPS Agreement. Only the subsurface estate was transferred to NANA on A-5 lands. The eastern portion of the site was reseeded in 1988 and supports a vigorous plant community. Bedrock at MS-6 is the Kanayut conglomerate, sandstone and maroon shale.



Panorama of MS-6 looking northwest.

2.8 Material Site 7 (MS-7)

Material site 7 has been inactive since 1988. The 200 foot portion of the access road connected to the DMTS Road is used for temporary maintenance vehicle parking. The next 1,300 feet of road was removed and has been reclaimed and revegetated. The portion of the access road running up the hillside has not recovered as well as the flatter reclaimed areas. The overburden piles were recontoured and quarry was seeded in 1988. The 9 acre site is located on an easement from the Alaska Department of Natural Resources. Bedrock in this quarry is Ikalukrok Formation chert and siliceous shale.



View of MS-7 looking northeast.

2.9 Material Site 8 (MS-8)

The 35 acre materials site 8 was also closed in 1988. The roadway shoulders were rounded off and the site and road were reseeded. Because the roadway is elevated above the Tundra and dries out readily, the revegetation effort has not succeeded. The pit itself contains a wetland sustained by snow melt and the spoils piles have a healthy growth of graminoids and forbs. The site is located on an easement from the Alaska Department of Natural Resources. Bedrock in the quarry is Siksikpuk Formation shale.



View of MS-8 looking northeast.

2.10 Material Site 8A (MS-8a)

Material site 8A was closed in 1988. The access roadway was removed and revegetated and currently supports a vigorous plant community. A pad at the base of the hill was also reseeded in 1988 and supports a dynamic plant community and several small ponds developed in thermal karsts. At this site a “Z” road was built up the hill but no quarry was developed. The “Z” road has a healthy population of forbs and minor grasses. The 19 acre site is located on an easement from the Alaska Department of Natural Resources. The quarry is developed in Kogruk Formation cherty, dolomitic limestone.



View of MS-8a “Z” road looking south.

2.11 Material Site 9 (MS-9)

Material site 9 is the most active DMTS material site. It was the source of aggregate for the High Float Project at the DMTS Port Site and material from this source is used as surface coarse for the haul road. The site is also a water withdrawal source from a small depression used to collect precipitation, and is a storm-water sediment management structure. The 25 acre site is located on an easement from the Alaska Department of Natural Resources. The bedrock is Kogruk Formation cherty, dolomitic limestone.



View of MS-9 looking south.

2.12 Material Site 10 (MS-10)

The 15 acre material site 10 is used predominately as a water withdrawal site for dust control activities on the DMTS Road. The water source is about 4.5 acres in size and holds about 30 acre feet of accumulated precipitation. The site is located on an easement from the Alaska Department of Natural Resources. Spoils piles on the northeast side were graded and reseeded in 1988. The bedrock is Kanayut conglomerate and sandstone.



View looking northwest at MS-10.

2.13 Material Site 11 (MS-11)

Material site 11 is little used as an aggregate source or a water source. In fact the site no longer contains ponded water. Although the site is 40 acres in size only about 6 acres has been excavated. The ADNIR land use permit limits material withdrawal from this site to 25,000 cubic yards per year. The material extracted is unconsolidated sand and gravel from a perched-paleo stream channel. The site is located on an easement from the Alaska Department of Natural Resources.



View looking southwest at MS-11. Note the sand and gravel material.

2.14 Material Site 12 (MS-12)

Material Site 12 produces aggregate from Kanayut conglomerate and sandstone. A portion of the material in this pit is friable and breaks down easily into sand and therefore it is not currently used as a material source. The quarry has a prominent highwall on the east side and would require much development work to reactivate the site. At the time of this report the site was also used by nesting raptors. The 31 acre site is located on an easement from the Alaska Department of Natural Resources.



View looking east at MS-12.

2.15 Material Site 13 (MS-13)

Material site 13 is not an active material site. The DMTS roadway passed through a side hill cut of Siksikpuk Formation within the site. Material from the cut was used in the construction of the DMTS road bed. A stockpile of run of pit material from the Limestone Quarry is stored on the site. The 40 acre site is located on NANA land.



View looking north at MS-13 with the DMTS Road at the right and the Limestone Quarry material stockpile in the center of the photo.

2.16 Material Site 14 (Buddy Creek Cut)

Material site 14 is similar to 13 in that it was also excavated as part of a DMTS roadway realignment. Material site 14 is 16 acres in size and is located on NANA land. Bedrock is Kogruk, dolomitic limestone.



View looking northeast at MS-14.

2.17 Limestone Quarry

The limestone quarry was developed in the winter of 1990-1991 via an ice road constructed westward off of the DMTS at MS-13. Material was extracted from Kogruk Formation cherty dolomitic limestone and 50,000 tons was stockpiled at MS-13 some of which remains there today. About 17,000 tons of material was used to blend into ore stockpiles to reduce the ARD generation in the tailings pond. The material from this site was not used on the DMTS. The road and the pit were not revegetated but abundant forbs have populated the access road. The site is located on NANA lands.



View of the Limestone Quarry, looking northeast.

3 Operation of the DMTS Materials Sites

3.1 Safety

Safe operating procedures for the DMTS Materials Sites are subject to conditions imposed by TAK and its contractors, as well as the laws and regulations of the Mine Safety and Health Administration (MSHA).

TAK's personnel policy prohibits use and possession of alcohol and controlled substances for all employees, contractors, and visitors to any Red Dog facility. Persons in violation of this policy are immediately dismissed from employment and evicted from the property.

The following safety precautions apply to general DMTS operations including those in Materials Sites, and are detailed in TAK's *Road Procedure - Port Road Traffic* and the *Red Dog Operations Employee & Contractor Safety Handbook*:

- Prior to operation of any vehicle or mobile equipment, employees shall be task-trained.

- Each operator, prior to operating any vehicle or piece of mobile equipment, completes a written walk-around inspection (per shift).
- Following the walk-around inspection, and prior to normal operation, the operator shall perform a brake check on the vehicle.
- Personnel shall carry sufficient cold weather gear when traveling the DMTS Road.
- All equipment operators shall carry, at a minimum, a portable radio when traveling the DMTS Road.
- Equipment and its operators can and will be inspected for compliance.

3.2 Fire Prevention, Response & Reporting

It is the responsibility of all employees and contractors of the operation to take precautionary measures to prevent man-made fires. Fire prevention and control measures presented in the *Red Dog Operations Employee & Contractor Safety Handbook* shall be followed by every employee and contractor. These measures include the following:

- Strict observation of designated non-smoking areas.
- Prohibition of smoking during fueling operations.
- Prohibition of fuels or flammables storage in vehicles or equipment, unless within an approved container.
- Prohibition of fuel as cleaning agent (only approved cleaning solvents may be used).
- Storage of flammable liquids in safety containers and/or approved flammables storage cabinets.
- Disposal of oily rags and other combustible materials in approved metal containers.
- Requirements for hot work permits prior to initiation of work.
- Maintenance of appropriate firefighting equipment in accessible locations, especially in the vicinity of hot work.

Actions taken to suppress fires will be in accordance with the *Emergency Incident Management Guidelines*, the *Red Dog Mine Fire Department Policies & Procedures Manual*, and, when applicable, the Bureau of Land Management's (BLM's) *Alaska Interagency Wildland Fire Management Plan (BLM 1998)*. The TAK Response Chief on duty oversees all fire response and reporting activities. Response shall be carried out by TAK's Fire Department.

If a fire starts within the DMTS corridor as a result of road operations or maintenance activities, steps to be taken shall include:

- Immediately respond to the fire in accordance with applicable plans.
- Notify NANA, AIDEA, and NPS according to procedures set forth in the Fire Department Operations Manual.

TAK will not fight fires caused by natural occurrences unless human life or operations are threatened.

3.3 Wildlife Incident Response & Reporting

If a person is injured by an animal, TAK's Fire Department will respond according to tactical procedures detailed in the *Red Dog Mine Fire Department Policies & Procedures Manual*.

Any free-ranging carnivorous wild animal that bites a person must be euthanized immediately and submitted to the Alaska Department of Health & Social Services, or to a laboratory designated by the Department for rabies testing (Chapter 27 Part 020, Title 7 Alaska Administrative Code [7 AAC 27.020]).

The Red Dog Environment Department will notify the appropriate the NANA Subsistence Committee, NPS and Alaska Department of Fish & Game (ADF&G) representatives in the event of a wildlife road kill or injury involving caribou, bear, fox, wolf, wolverine, musk ox, moose, or raptors. If a federally-listed threatened or endangered species (see Section 6) is injured or killed, the Environment Department will also immediately notify the U.S. Fish & Wildlife Service (USFWS). For an incident involving a marine mammal, the Environment Department will notify National Marine Fisheries Service. All wildlife incidents, including contact information, are recorded in the Red Dog Environmental Management Information System (SiteLine) database.

3.4 Accident Response & Reporting

TAK's Fire Department and Trauma Team will respond to accidents according to tactical procedures detailed in the *Red Dog Mine Fire Department Policies & Procedures Manual* and the *Emergency Incident Management Guidelines*. Accident reporting is detailed in the *Emergency Incident Management Guidelines*, which applies to the entire operation, including the DMTS Materials Sites. TAK senior management has access to the *Emergency Incident Management Guidelines*, and is responsible for communicating response and reporting procedures to employees.

An accident that does not result in lost time is considered minor, and immediately reportable to the involved individual's direct supervisor. The supervisor shall complete an incident report in SiteLine explaining the circumstances of the incident and the extent of injuries (if any) within 24 hours.

A major accident (an incident involving a lost-time or hospitalization) is immediately reportable to TAK's General Manager or designated representative. In the event of a fatality, TAK's General Manager shall notify AIDEA, the Alaska Division of Labor Standards and Safety, the Occupational Safety and Health Administration (OSHA), and the Alaska State Troopers by telephone, telegram, radio, or in person, immediately and no later than 24 hours after learning the incident has occurred; and no equipment, material, or product may be moved or altered until clearance is given by the Troopers and Division of Labor Standards and Safety, except when compliance with this requirement

would interfere for an unreasonable length of time with work or create additional hazards (Chapter 18.60, Title 18 Alaska Statutes, Section 058).

3.5 Spill Prevention

Prevention of spills is TAK's primary concern in the transportation, storage, and handling of fuels, chemicals, and concentrates. TAK's Environmental Management System ensures employee awareness, training, and proper safety and operational practices, in order to prevent spills and minimize the impact of those that occur.

The potential spills at the DMTS material sites include diesel fuel and chemicals (explosives, dust control agents, etc.) used in quarrying and reclamation operations. Spills to land or water could occur during the transport of these items to the materials site, during fueling of trucks and equipment, or the operation of equipment at the materials sites.

3.6 Spill Response & Reporting

Because this guidance document does not undergo annual review by all agencies with jurisdiction over the spill response and reporting aspects of the DMTS, TAK's spill response and reporting methods are set forth in other documents and incorporated here by reference. In the event of a spill, response personnel shall implement the following:

- Red Dog Operations Oil Discharge Prevention & Contingency Plan
- Red Dog Hazardous Material Operations Manual
- Concentrate to Water Response Plan
- Port Road Concentrate Spill Cleanup Standard Operating Procedure (SOP)

Regardless of quantity, all spills are reported in SiteLine by the end of shift.

In the event of a reportable spill on National Monument lands, NPS shall be notified according to reporting procedures in these plans. TAK must request permission from NPS to operate equipment off road surfaces within the Monument for spill response purposes.

3.7 Employee Training and Orientation

TAK provides its employees and contractors with orientation training on safe work practices, familiarization with mining and milling processes as required by MSHA, chemical reagent handling, waste management, arctic conditions, environmental policy, and the Red Dog Operations Environmental Management System (EMS).

Specifically, each employee or contractor of TAK is provided with environmental orientation training covering the following general environmental policy items:

- All spills are to be reported to the supervisor immediately.
- Immediate attention must be given to all spills, and response actions must be guided by the appropriate spill response plan.

- Waste handling and disposal must comply with Red Dog's Waste Management Program.
- No wetland may be disturbed without obtaining the appropriate permit.
- No water, waste, or other substance may be discharged to a wetland or body of water without obtaining the appropriate permit.
- No streambed may be disturbed by crossing or with construction activity without obtaining the appropriate permit.
- No water may be withdrawn from any water body, natural or manmade, until a water use permit has been obtained.
- No hunting or fishing.
- Wildlife may not be harassed in any way.
- Cultural resource sites are protected and may not be disturbed.
- Any activity that has the potential to adversely affect their environment should be reported to the Environmental Department through the supervisor.

These general environmental policy items are also available to each employee and contractor in the *Red Dog Operations Employee & Contractor Safety Handbook* and Red Dog's *Environmental Pocket Reference*.

The physical, biological, and cultural values of the area, including Cape Krusenstern National Monument, are communicated to all employees during their environmental training. NPS personnel may attend trainings and give presentations to Red Dog Operations personnel regarding the surrounding park units upon making arrangements with TAK. NPS may also provide Red Dog Operations personnel with pamphlets and literature regarding NPS policy.

Mine operations and safety training are provided to new employees and contractors during a separate MSHA training program.

3.8 Standard Operating Procedures / Extraction

Material sites are currently mined according to design specifications approved by the appropriate permitting agency. In general, working benches or rock faces at material sites are kept to an approximate maximum height of 25 feet. All sheer quarry walls or benches are blasted or excavated producing a slope of not less than ½ to 1 (angle of repose), or as otherwise required by specific permits to mine.

Blasting is performed as described in Section 3.9. Broken rock is stockpiled in pre-designated areas using 966 or 988-type front-end loaders, and processed (crushed and sorted) using a portable crusher powered by a diesel generator, as needed. The portable crusher operation is permitted by the ADEC under Air Quality Permit to Operate - No. 289GP902

Prior to mining in a new area, organic material is stripped and stockpiled in a pre-designated location within the material site boundaries. An appropriate buffer is maintained between material sites and nearby surface water bodies.

To protect the quality of nearby water bodies during the life of a material site, erosion and drainage control methods are employed. Storm water runoff from the sites are managed according to the requirements of the *Red Dog Port Site Best Management Practices Plan* and Alaska Pollution Discharge Elimination System (APDES) Permit No. AK-004064-9. Erosion and drainage control methods at material sites are specific to each site's topographic and geologic characteristics, and techniques may vary over the life of the material site. Material sites may be designed to natural contours, or with an approximate slope of 2 percent on the quarry floor, with the aspect oriented toward a drainage trench with a series of dikes, filter cloths, or silt fences to control sediment in runoff. Another approach to controlling drainage and erosion at material sites is to mine such that a depression is left on site to serve as a collection basin (pond).

Mining at material sites must be performed such that wildlife is protected. No heavy equipment shall be operated in the vicinity of an actively nesting raptor [NANA/NPS Agreement, Exhibit B Section (C) part 5.r.(1)].

Equipment fueling at material sites, as stipulated by land use permits, must be conducted with secondary containment (drip pans or catch buckets) placed under outlets, valves, hose connections, and hose ends. Fueling operations must not take place within the 100-year floodway or tidelands, and fuel containers may not be stored within 100 feet of a water body. Spill response equipment is kept on hand during fuel transfers at material sites.

3.9 Blasting Procedures

Explosives transportation, handling, storage, and use will comply with the agreements governing the operation of the DMTS (see Section 1.2) and the following federal and state regulations:

- U.S. Department of Labor MSHA Standards – 30 CFR 56 & 57, Safety Standards for Explosives at Metal and Nonmetal Mines. These standards govern on-site transportation, safe storage, inspection, safe use, and notification requirements.
- U.S. Department of Labor OSHA Standards – 29 CFR 1910.109, Safety Standards for Explosives and blasting agents. These standards govern safe transportation, storage and of explosives on the DMTS road.
- U.S. Department of Transportation Standards – 49 CFR 1572, Credentialing and Background Checks For Land Transportation Security. These standards deal with the licensing of persons who transport explosives on the DMTS road.
- Alaska Department of Labor/Occupational Safety and Health, Explosives Compliance Division Requirements – 8 AAC 61.1020, Additional Explosive and Blasting Standards. These standards govern safe blasting practices and department notification requirements.
- ADNR Requirements – 11 AAC 95.335, Blasting Standards. These requirements prohibit blasting in certain riparian or stream areas unless a variance is obtained.

In mining of material sites, placement of explosives is generally in series at approximately 18-foot intervals with 15.5 feet of overburden; however, the number, pattern, and depth of explosives vary according to bench height, rock type, hardness, and structure of the material. The ratio of explosives to rock is generally 0.8 pounds per cubic yard, and may be adjusted to achieve the desired fragmentation. Production blast holes range from 10 to 30 feet deep. Blasts are produced using a Class 1.4 detonator and Class 1.1 boosters. The blast is initiated with a “nonel” shock tube initiator.

When blasting is to be performed, the designated blaster is responsible for insuring that all tie-ins are complete, placing guards at safe designated distances, giving the required blast signals, initiating the blast, inspecting the blast, and giving the “all clear” signal.

Blasting at material sites must be performed such that wildlife is protected. No explosive shall be detonated within ½ mile of any caribou or musk ox herd, or known denning bear [NANA/NPS Agreement, Exhibit B Section (C) part 5.a]. No explosive shall be detonated within 1 mile of any actively nesting raptor.

3.10 Water Withdrawal

The TAK Surface Crew pumps water from permitted withdrawal sources, primarily material sites, according to permit stipulations (see Table 1) using trailer-mounted 6-inch pumps, and applied using a water truck equipped with a spray bar.

In general, water is withdrawn from material sites from May through September, with peak withdrawals totaling an average of about 3 million gallons in June. The volume of water withdrawn and applied to the DMTS Road surface is weather dependent. Less water application is typically required in September, when average withdrawals total about 700,000 gallons (all figures averaged over the period of 2001 through 2003).

Palliative agents used for dust control may be added to the water tankers with an eductor at each permitted water withdrawal material site. The agents (typically dry calcium chloride) are delivered to the mixing site in 1 ton super sacks in quantities that are expected to be consumed within several days. No long term storage of palliative agents is performed at the material sites.

4 Maintenance procedures

4.1 Active Material Sites

The active DMTS material sites are maintained by TAK’s Surface Crew to ensure adequate supplies of materials for proper maintenance of the DMTS Road. Material site maintenance generally consists of maintaining coarse stockpile, regular surface grading to control runoff, snow control and dust control.

Table 4-1 lists equipment used to maintain the DMTS material sites.

Qty.	Equipment	Use(s)
2	¾ or 1-Ton 4WD crew cab pickups	Surface Crew DMTS Road transportation
1	300-gallon pickup bed-mounted fuel tank	Hauling equipment fuel
1	500-gallon fuel tank trailer (pickup pull)	Hauling equipment fuel
3	10-ton tractors with 9,000-gallon water tankers	Hauling water / applying dust suppressant
1	Plow truck with sander	Plowing/sanding
1	Plow truck with 8-12 yd dump box	Plowing/hauling sand or gravel
5	Belly dump trailers (hailed by NANA-Lynden trucks)	Haul/apply gravel
1	966-type front-end loader (4.5 yd)	Move snow or gravel
1	966 snow blower attachment	Move snow
1	966 hammer attachment	Install delineators
1	988 front-end loader (7 yd)	Crush/load/move gravel
2	14H graders	Grading/scarifying road & ice – all seasons
1	Eductor unit	Mix water & dust suppressant
1	Portable crusher & generator	Crush gravel at material sites
3	Trailer mounted 6-inch "trash" pumps	Water withdrawal for dust suppression
1	40-horsepower steam generator or a modified welder	Culvert ice clearing
1	2.4 - 4.0 yd backhoe (track hoe)	Clearing culverts and bridges of snow/debris
1	D-5 GLGP CAT Dozer (low ground pressure)	Build snow berms (to function as snow fences), clear culverts and bridges
1	D-9 Dozer	Primarily serves Mine Department, available to push snow
1	DML ATLAS COPCO Drill	Drilling blast holes
1	Blasting truck	Loading blast holes
1	Self propelled snow blower	Clearing snow
1	Telescoping forklift	Loading calcium chloride
2	25 cu yd end dump trailers	Haul rock

5 Environmental protection and mitigative measures

The section describes measures TAK is taking or has taken to address the six environmental protection & mitigation criteria against which NPS is required to review this Plan [Exhibit B, Section (A) of the NANA/NPS Agreement]:

5.1 Prevention or Mitigation of Visual Effects

Material sites and their associated access roads have been sited, to the extent possible; to minimize adverse visual affects on Cape Krusenstern National Monument lands.

5.2 Protection of Fish & Wildlife and Their Habitat

The following general fish and wildlife protective policy is observed by all TAK employees and contractors and actively enforced by TAK:

- Personnel will not harass wildlife in any manner. Harassment means to pursue, hunt, take, capture, molest, collect, harm, shoot or kill, or attempt to engage in any of the preceding by an either intentional or negligent act or omission. Access for hunting, fishing, or trapping on all transportation easement lands is prohibited for employees and contractors during operation and maintenance of the DMTS. (This does not apply to the subsistence activities of local residents as provided for under Section 201(3) and Title VIII of the Alaska National Interest Lands Conservation Act [ANILCA] and shall not apply to activities authorized by ADF&G under a permit to import, export, take or possess live game for scientific, educational or other purposes.)
- Bringing pets to Red Dog is prohibited.
- Feeding wildlife is prohibited.
- Possession of firearms by employees and contractors for personal use is prohibited (possession of a firearm by a trained bear guard may be warranted during the summer season).
- Wildlife is given right-of-way by all vehicles.

Blasting is prohibited when wildlife is present. See section 3.9

5.3 Fish Passage & Habitat Protection

Access roads to material sites cross several unnamed drainages using culverts to prevent ponding and wash-outs to ensure the protection of downstream fish habitat.

Excavation and maintenance activities that lie in close proximity to fish-bearing streams sites are conducted using stormwater best management measures. Four material sites and their access roads lie in close proximity to fish-bearing streams.

<u>Material Site</u>	<u>Fish-bearing Steam</u>
1. MS-4	Straight Creek
2. MS-5	Omikviorok River
3. MS-6	Mud Lake
4. MS-11	Evainiknuk Creek

5.3.1 Protection of Migratory Birds

The Migratory Bird Treaty Act of 1918 prohibits activities that directly or indirectly result in the mortality of birds or eggs or the abandonment of nests. DMTS operations and maintenance activities that could affect migratory birds and their nesting behavior include blasting and operating heavy equipment at material sites during nesting season.

Peregrine falcons (*Falco peregrinus*) and rough-legged hawks (*Buteo lagopus*), both protected under the Migratory Bird Treaty Act; occasionally establish nests on or near the high-walls of DMTS material sites. Both species initiate nesting during the first part of May, and average fledge dates occur between August 1 and August 15 (Taylor 1999).

To prevent abandonment and mortality of raptor eggs and nestlings due to material site operations, blasting within 1 mile, and operation of heavy equipment in the vicinity of active nests, is prohibited. Additionally, blasting and operation of heavy equipment at material sites is prohibited when nesting or molting waterfowl are present at adjacent lakes, wetlands, or streams [NANA/NPS Agreement, Exhibit B Section (C) part 5.r.(1)]. Prior to any planned activity at a material site, mine personnel shall inspect the area for raptor nests and waterfowl.

5.4 Protection of Cultural & Archaeological Resources

TAK's *Integrated Plan for the Management of Cultural Resources in the Red Dog Project Area* will outline a long-term approach to protection and management of cultural resources and will include:

- An archaeological database for all sites in the Red Dog area.
- A geographic information system (GIS) based map showing all sites and previous cultural resource survey areas within the Red Dog area.
- A heuristic predictive model for site occurrence with probabilistic statements about potential unknown site locations.
- Procedures for avoidance and mitigation of adverse effects on historic properties.
- Procedures for addressing inadvertent discoveries of archaeological sites, historic sites, and burial grounds.

TAK recognizes the sensitive nature of archaeological resources. Therefore, the system will have sufficient securities and extremely limited access to maintain the confidentiality of the resources.

6 Protection of Threatened & Endangered Species

Currently, no federally-listed threatened or endangered species protected under the Endangered Species Act are known or expected to occur within the vicinity of DMTS material sites. The Arctic peregrine falcon (*Falco peregrinus tundrius*) was delisted in its entire range in 1994, and the American peregrine falcon (*Falco peregrinus anatum*) was delisted in 1999. Both subspecies are considered recovered; the American peregrine

falcon's recovery was monitored by USFWS for five years following delisting. The Arctic peregrine falcon is considered a "species of special concern" by ADF&G. Protective measures regarding falcons are presented in Section 3.3, 3.9, and 5.3.1.

No incidents involving threatened or endangered species in the DMTS corridor have been reported (Martinisko 2003). Any incidents involving threatened or endangered wildlife shall be handled as described in Section 3.3.

Impacts to threatened and endangered species listed prior to 1984 from the construction and operation of DMTS were analyzed in the *EIS for the Red Dog project* (U.S. Environmental Protection Agency et al 1984). Major expansion projects requiring federal authorizations must undergo environmental analysis in accordance with the National Environmental Policy Act (NEPA) and consultation with USFWS regarding potential effects to threatened and endangered species in accordance with Section 8 of the Endangered Species Act.

7 Reclamation

The overall objectives of the reclamation of material sites, and related access roads within the DMTS corridor is to restore the sites to be compatible with the surrounding landscape, and in doing so, create functional habitat for wildlife, control erosion, and mitigate visual impacts.

The reclamation guidelines established in Article 9, of the NANA-Cominco Agreement state that Cominco:

"shall provide for reclamation within the following guidelines:

- a. The parties recognize that reclamation of disturbed lands is desirable.
- b. The parties recognize that land disturbances related to surface mining and the deposition of tailings and waste rock are inevitable and complete return of all the disturbed land to its undisturbed condition is not possible.
- c. Reclamation shall be generally designed to mitigate potential long-term danger to human life or the subsistence needs of the natives of the NANA Region, to mitigate any adverse visual or aesthetic conditions, and to the extent reasonably practicable, to restore the land to a condition compatible with surrounding land.
- d. Disturbed land shall be restored to natural looking contours compatible with the surrounding terrain (it being recognized that the area of the mine excavation will not be refilled).
- e. Where available in appropriate quantities, topsoil shall be separately removed and stockpiled for final application after reshaping of disturbed areas has been completed. However, the parties recognize that permafrost conditions could cause long-term stockpiling of topsoil to be impractical.
- f. Appropriate measures shall be taken to control or reduce erosion, landslides and water runoff to the extent practicable.

- g. Fisheries and wildlife habitats shall be rehabilitated to the extent practicable.
- h. To the extent practicable, disturbed areas shall, through seeding, fertilizing, and other appropriate means, be revegetated with a diverse vegetative cover of species native to the area and similar to that on adjoining areas."

Reclamation of the materials sites along the DMTS will be consistent with these guidelines.

7.1 Previous Reclamation Efforts

Reclamation efforts along the DMTS corridor which have been carried out to date include partial closure and partial natural revegetation of access roads to Material Sites 7, 8, and 8A; demonstration revegetation at a disposal site near the Port; and revegetation of temporary crossings at Aufeis Creek, Mud Creek Ailuuraq, Tutak, Little Creek, and Anxiety Ridge. The demonstration and crossing reclamation efforts have helped establish the success of several native grass species suitable for revegetation in the DMTS corridor (Wright 1990a).

Reclamation planning efforts for the DMTS corridor to date include recommendations from ADNR's Plant Material Center (Wright 1990b). Reclamation of individual material sites shall be performed according to site specific plan(s) yet to be developed and schedules jointly approved by NPS, AIDEA, NANA, and TAK.

7.2 Reclamation Plans

Inactive material sites along the DMTS Road that will no longer be utilized will be considered for reclamation on a case by case basis using several of the steps outlined in NPS *Natural Resource Management Reference Manual #77, Disturbed Land Restoration* as summarized in this section.

7.2.1 Inventory

Pertinent details of each inactive materials site will be assessed. Details assessed may include geomorphic, hydrologic, ecologic, anthropologic aspects of the disturbances.

7.2.2 Goals and Objectives

For each reclamation plan one or more specific objectives will be established including a time frame in which the objective shall be met. If the objectives are not met within the stated time frame then additional restoration work will be considered.

7.2.3 Reclamation Alternatives

For each site the following alternative reclamation proposals will be evaluated.

- reclamation of stable geomorphic configurations, improvement of soil characteristics, and revegetation with native species
- reclamation of stable geomorphic configurations, improvement of soil characteristics, and natural recolonization of plants
- revegetation with native species without restoration of physical characteristics of landscape
- reclamation of the site by completing work in smaller sub-areas as funding and staff become available
- natural recovery

7.2.4 Selection of Alternative and Approval of Reclamation Project

Stakeholders will be consulted in the selection of the appropriate alternative. At a minimum these would include NPS, NANA, AIDEA, ADNR and Teck Alaska Incorporated. Upon agreement of a reclamation alternative, a detail project plan will be prepared. Following approval an application will be made for necessary permits if any are required and the plan will be implemented.

7.2.5 Project Plan

The project plan should consider the following tasks:

- Site preparation
- Earthmoving
- Soil treatment
- Control of surface erosion
- Reestablishment of native vegetation
- Final closure
- Monitoring and maintenance

7.2.6 Project Implementation and Reporting

Upon final approval and acquisition of any necessary permits Teck Alaska Incorporated will proceed with the reclamation plan. The project will be supervised by the Red Dog Mine Department. Construction equipment and operators will be obtained from the mine.

The Red Dog Mine Environmental Department will assist the Mine Department in non-construction technical issues, compliance assurance and reporting.

Following construction, monitoring of the site will be done by the Environmental Department.

7.3 Reclamation Methodology

Reclamation of material sites shall follow the standards set forth in 11 AAC 97.200. Land Reclamation Performance Standards, 11 AAC 97.250. Material Sites, and 11 AAC 97.210. Disposal of Buildings, Structures, and Debris On State Land. See [9 Appendix](#)

Reclamation methodology may include:

- All scrap iron, equipment, tools, piping, hardware, chemicals, fuels, waste, and general construction debris will be properly disposed of.
- Soils or water contaminated by acidic or toxic materials will be remediated per applicable federal and state regulations.
- The area may be backfilled, graded, recontoured using strippings, overburden, and topsoil or scarified to a condition that allows for the reestablishment of renewable resources on the site within a reasonable period of time. Contours after reclamation is complete will be conducive to natural revegetation or will be consistent with an alternate post-mining land use.
- Embankments surrounding pond excavations shall have point of ingress and regress established for wildlife access that shall not exceed a slope of 3:1.
- Stockpiled topsoil will be spread over the reclaimed area to promote plant growth that can reasonably be expected to revegetate the area within five years.
- Topsoil that is not redistributed to an area being reclaimed, will be separated and stockpiled for future use. This material will be protected from erosion and contamination by acidic or toxic materials and preserved in a condition suitable for later use.
- If necessary, in areas of low natural fertility, addition of soil amendments, as appropriate, including fertilizer will be made to promote revegetation.
- Any roads or other facilities constructed to provide access to the material site operation shall be reclaimed by removal to grade or spreading to near grade level to allow sufficient moisture to be retained for revegetation.

- The reclaimed area may be sown with commercially available indigenous seeds or seeds collected from indigenous plants in the area (non-native species may not be used within National Monument lands without prior approval from NPS)
- In areas of saturated soils, transplantation (sprigging), of indigenous plant species from adjacent areas may be conducted when appropriate.
- Reclaimed sites will be monitored to evaluate effectiveness of rehabilitation for a period of five years following reclamation.
- Implementation of corrective measures will be conducted, where appropriate.

Reclamation methodology, where appropriate, may also follow guidance provided in *North Slope Gravel Pit Performance Guidelines* (ADF&G undated), methods found in *Best Management Practices for Reclaiming Surface Mines in Washington and Oregon*, and guidance found in *NPS Reference Manual 77*.

8 References

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- Bureau of Land Management's (BLM). 1998. Alaska Interagency Wildland Fire Management Plan.
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U.S. Environmental Protection Agency and U.S. Department of the Interior. 1984. Final Environmental Impact Statement, Red Dog Mine Project, Northwest Alaska. EPA-10-AK-Wulik-NPDES-84, September.

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9 Appendix — Alaska Reclamation Statutes and Regulations

AS 27.19.020. Reclamation Standard.

A mining operation shall be conducted in a manner that prevents unnecessary and undue degradation of land and water resources, and the mining operation shall be reclaimed as contemporaneously as practicable with the mining operation to leave the site in a stable condition.

11 AAC 97.200. Land Reclamation Performance Standards

(a) A miner shall reclaim areas disturbed by a mining operation so that any surface that will not have a stream flowing over it is left in a stable condition.

(1) For the purposes of AS 27.19.100 (6) and this section, a stable condition that "allows for the reestablishment of renewable resources on the site within a reasonable period of time by natural processes" means a condition that can reasonably be expected to return waterborne soil erosion to pre-mining levels within one year after the reclamation is completed, and that can reasonably be expected to achieve revegetation, where feasible, within five years after the reclamation is completed, without the need for fertilization or reseeding. If rehabilitation of a mined site to this standard is not feasible because the surface materials on the mined site have low natural fertility or the site lacks a natural seed source, the department recommends that the miner fertilize and reseed or replant the site with native vegetation to protect against soil erosion; however, AS 27.19 does not require the miner to do so. Rehabilitation to allow for the reestablishment of renewable resources is not required if that reestablishment would be inconsistent with an alternate post-mining land use approved under AS 27.19.030 (b) on state, federal, or municipal land, or with the post-mining land use intended by the landowner on private land.

(2) If topsoil from an area disturbed by a mining operation is not promptly redistributed to an area being reclaimed, a miner shall segregate it, protect it from erosion and from contamination by acidic or toxic materials, and preserve it in a condition suitable for later use.

(3) If the natural composition, texture, or porosity of the surface materials is not conducive to natural revegetation, a miner shall take measures to promote natural revegetation, including redistribution of topsoil, where available. If no topsoil is available, a miner shall apply fines or other suitable growing medium, if available. However, a miner may not redistribute topsoil and fines over surfaces likely to be exposed to annual flooding, unless the action is authorized in an approved reclamation plan and will not result in an unlawful point- or non-point-source discharge of pollutants.

(b) A miner shall reclaim an area disturbed by a mining operation so that the surface contours after reclamation is complete are conducive to natural revegetation or are consistent with an alternate post-mining land use approved under AS 27.19.030 (b) on state, federal, or municipal land, or with the post-mining land use intended by the landowner on private land. Measures taken to accomplish this result may include backfilling, contouring, and grading, but a miner need not restore the site's approximate original contours. A miner shall stabilize the reclaimed site to a condition that will retain sufficient moisture for natural revegetation or for an alternate post-mining land use approved under AS 27.19.030 (b) on state, federal, or municipal land, or for the post-mining land use intended by the landowner on private land.

(c) A pit wall, subsidence feature, or quarry wall is exempt from the requirements of (a) and (b) of this section if the steepness of the wall makes them impracticable or impossible to accomplish. However, a miner shall leave the wall in a condition such that it will not collapse nor allow loose rock that presents a safety hazard to fall from it.

(d) If a mining operation diverts a stream channel or modifies a flood plain to the extent that the stream channel is no longer stable, a miner shall reestablish the stream channel in a stable location. A miner may not place a settling basin in the way of the reestablished channel location unless the fines will be properly removed or protected from erosion.

11 AAC 97.210. Disposal of Buildings, Structures, and Debris On State Land

A miner shall remove, dismantle, or otherwise properly dispose of buildings and structures constructed, used, or improved on state land unless the surface owner or manager authorizes that the buildings and structures may stay. A miner shall remove or otherwise properly dispose of all scrap iron, equipment, tools, piping, hardware, chemicals, fuels, waste, and general construction debris on state land.

11 AAC 97.250. Material Sites

(a) Continuous use; intermittent use of a material site. A miner shall reclaim a material site in accordance with AS 27.19.020 , 11 AAC 97.200, 11 AAC 97.210, and this section as contemporaneously as practicable with the mining.

(1) If site conditions permit, a miner shall proceed cell by cell so that reclamation can and will occur immediately after each cell is mined. Mining by cell means dividing the material site into separate units and mining them in an orderly sequence so that topsoil removed from a newly opened unit can be placed on a unit already mined.

(2) If site conditions require that the entire material site be mined continuously, with the materials being removed layer by layer, a miner shall reclaim the site as soon as the mining is completed. However, the commissioner will allow the reclamation to be postponed if the commissioner finds that contemporaneous reclamation is impracticable, because the landowner plans to allow future intermittent mining of the material site by

one or more miners over a period of more than one year. Before the commissioner allows such a postponement, the miner or landowner must

(A) submit a reclamation plan for the entire material site, including stockpiles;

(B) ensure that reclamation will occur no later than immediately after the material site is ultimately exhausted or to be abandoned; and

(C) provide for a bond for all mined areas at all times until the reclamation is ultimately completed.

(b) Extraction of materials from river beds (gravel bailing operations). If a miner extracts materials from the bed of a watercourse, the miner shall reestablish a stable bed and bank profile as contemporaneously as practicable with the extraction. A stable bed and bank profile is one that will not substantially alter river currents or change erosion and deposition patterns downstream. In reviewing a reclamation plan for such an operation, the commissioner will use hydrologic information available to the department and other information the commissioner considers relevant.

(c) Peat and topsoil mines. A reclamation plan for a mine that produces peat, topsoil, or similar materials must provide that at least two inches of a suitable growing medium will be left or replaced on the mined land.

(d) Materials used for other mines. If the primary use of extracted materials is to assist another mining operation regulated under this chapter (such as gravel to build a road to a mining operation), the miner must include the reclamation plan or letter of intent for the material site operation as part of the reclamation plan or letter of intent for the primary mine.

(e) Exempt excavations. If materials are extracted primarily for a non-mining purpose and not part of a mining operation (such as when preparing a building site or highway cut, dredging a shipping channel, or drilling an access tunnel for a non-mining purpose), the requirements of this chapter do not apply even if the materials are sold commercially or used as fill.

(f) Stockpiles. The requirements of this chapter do not apply to materials stockpiled at a distribution point other than the mined area, nor to materials stockpiled at a mined area where no mining has taken place after October 14, 1991. A miner need not reclaim acreage on which materials are stockpiled at an active mine site until the stockpile is used up. However, a miner must locate the stockpile where it will not erode into a waterbody. A stockpile is a storage pile of materials segregated as a commercial product for sale or distribution elsewhere and does not include non-commercial waste rock, overburden, or tailings. A stockpile associated with a mining operation other than for materials is not exempt from this chapter.