MAP CODE
EWNDW

ENVIRONMENTAL TIMING WINDOWS

USE Site Environmental

What

- A work schedule that does not conflict with critical life stages for fish and wildlife (e.g., spawning and nesting).

Purpose

- To avoid harming fish or wildlife during one of their critical life stage activities.

Source: Alberta Land Conservation and Reclamation Council

Where

YES: During activities that involve blasting, logging, stripping, clearing and grubbing work, especially any work that is done near streams or fish bearing waters. Ideally, work sites should be kept dry. If stormwater discharge is necessary, however, silt laden waters should not be introduced into natural waterways, particularly during sensitive periods for fish.

Materials Equipment & Costs

- N/A
- N/A
- $ N/A

Plans & Spec's

1. Consult with local Ministry of Water, Land and Air Protection or an "Environmental Atlas" for birds, fish or wildlife in the immediate location of the operation.
2. Contact the appropriate regulatory agency to determine the timing windows for critical life stage activities such as spawning, nesting or birthing.
3. Determine if any proposed activities will likely affect the critical life stages for fish, birds or mammals that live in the vicinity.
4. Sequence activities to avoid impacting those critical life stage activities.

Effects of aggregate activities that impact fish & wildlife

Activity	Side Effect	Affects:
Clearing & Grubbing	Silt	Fish habitat
Clearing & Grubbing	De-forestation	Nesting, calving
Stormwater runoff	Silt	Fish habitat
Erosion	Silt	Fish habitat

- Key activities that should consider life stage activities in their scheduling are:
  (a) Activities that expose significant amounts of soil;
  (b) Major activities, such as reclamation works;
  (c) Activities of lengthy duration.

- A key question to ask of all activities is: what measures should be in place to safeguard fish and wildlife values before the activity begins.

Construction sequence for land clearing with scheduling considerations to reduce silt from entering natural watercourses and fish habitat

Activity	Schedule Consideration
1. Constructing initial access: entrance, on-site routes, equipment parking areas.	**First land-disturbing activity:** stabilize bare soil areas immediately with gravel and temporary vegetation as excavation takes place.
2. Installing sediment traps and barriers: sediment fences, straw bale barriers and outlet protection.	**Install principal basins after mine site is accessed:** install additional traps and barriers as needed during excavating.
3. Installing ditches & runoff control: ditches, water bars, check dams, inlet and outlet protection, slope drains.	**Install key control measures after principal sediment traps and before excavating:** install additional runoff-control measures during excavating.
4. Land clearing and grading: site preparation - cutting, filling and grading, sediment basins, barriers, diversions, drains, surface roughening.	**Begin major clearing and excavating after principal sediment and key runoff-control measures are installed:** clear borrow and disposal areas only as needed. Install additional control measures as excavation progresses. Mark trees and buffer areas for preservation.

- In planning clearing and grubbing work, it may be helpful to outline the sequence of activities and list any erosion control and sediment traps that should be in place before the next stage of the clearing begins. This list can provide a logical order to schedule work.
- Schedules will vary due to weather and other unpredictable factors.

Installation

- Site access is normally the first land-disturbing activity. Exercise care not to damage valuable trees or disturb designated buffer zones.
- Install principal sediment basins before any major site clearing and grubbing takes place. Erect additional sediment traps and sediment fences to keep sediment contained on-site at appropriate locations.
- Locate key runoff-control measures to divert water from planned undisturbed areas out of the traps and sediment-laden water into the settling ponds or sediment basins.

- Install diversions above areas to be disturbed prior to work and install additional runoff-control measures as work takes place.
- Install the main ditches with inlet and outlet protection devices early, and use them to convey storm runoff through the site.

Typical stabilization considerations for a general aggregate development sequence

Aggregate Development Activity	Schedule Consideration
1. Pre-development surface stabilization: temporary and permanent seeding, mulching, sodding, riprap.	Apply temporary or permanent stabilization measures immediately on the disturbed areas where work is delayed or complete.
2. Development: buildings, utilities, paving.	Install necessary erosion and sedimentation control practices as work takes place.
3. Landscaping and final stabilization: topsoiling, trees and shrubs, permanent seeding, mulching, sodding, riprap.	Last phase - Stabilize all open areas, including borrow and spoil areas. Remove and stabilize all temporary control measures.

Maintenance

- Follow the schedule. When changes in mining activities are needed, amend the schedule in advance to maintain environmental timeframe control.
- Following a work timeframe should help keep field personnel aware of the environment around them. Orderly modification assures coordination of work targets while ensuring basic needs of wildlife and the environment are met.

Sources

United States Department of Agriculture. (1994): **Planning and Design Manual for the Control of Erosion, Sediment, and Stormwater, Best Management Practice Standards.**

British Columbia Ministry of Water, Land and Air Protection. (2001): **Environmental Objectives, Best Management Practices and Requirements for Land Developments;** BC Environment, Vancouver Island Region, URL <http://wlapwww.gov.bc.ca/vir/pa/bmp_dev1.htm>, October 2001.