



BCTS
BC Timber Sales



Kootenay Business Area Supervisor Field Handbook



May 2023



“HOW TO USE THE FIELD HANDBOOK AND PROJECT BINDER”

- Handbook contains Environmental and Sustainable Forest Management program requirements and suggested best practices that are referenced in Timber Sale Licence and Contracts schedules.
- Project site supervisors get familiar with contents to support your project activities and expectations,
- Field Handbook is a handy reference tool for:
 - ✓ *Supporting worker tailgate training sessions,*
 - ✓ *Conducting project pre-work & inspection/monitoring activities*
 - ✓ *Assist in promoting forest stewardship & best practices*
 - ✓ *Supporting site supervisors’ roles and responsibilities,*
 - ✓ *Supports BCTS clients meeting their EMS/SFM obligations*
 - ✓ *Used in conjunction with Project plan/binder documents*
- Refer to training matrix for Supervisor & Worker training requirements.
- Site Supervisor roles and responsibilities are outlined in Environmental Field Procedure #02.
- Useful documents during emergency situations.
- Contents of Supervisor Field Handbook is also posted on BC Timber Sales website
<https://www2.gov.bc.ca/gov/content/industry/forestry/bc-timber-sales/forest-certification/>
- For more information contact the local BCTS staff or contact Paul Rendall, Certification Standards Officer at 1-236-352-8114 or by email at Paul.Rendall@gov.bc.ca .

Supervisor Field Book

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Sustainable Forestry Initiative (SFI) October 2022 Update

What's New for Clients

New EMS / SFM Training Requirements

Table 008-1 LPC Training Matrix/ Table 008-1A LPC Training Summary

- LPC Supervisors – **Introductory Information on Working with Indigenous Peoples**
- LPC Workers – **Summary, Working with Indigenous Peoples**
- LPC Supervisors – **SFM Program Continuing Education**
- Changes to frequency of training - **Increase in how often training courses are to be re-taken**
- EMS Tailgate Training Document – **Minor changes**
- SFI General Awareness Document - **Minor changes**

Updated Environmental Field Procedures

EFP 01 General, EFP 02 Project Supervision, EFP 03 Development and Planning, EFP 04 Roads, Bridges and Major Culverts and EFP 05 Harvesting

- **Changes include improving water and sedimentation management, minimizing activities within RMAs, stop work procedures, temporary or seasonal shutdowns and reference to qualified professionals**

Incident Reporting

Incident Report Form (CHK-009) and Environmental Operating Procedure (EOP) 04

- **Changes include strengthening accountability, investigation collaboration, definitions re: what to report and investigate, use of timelines for reporting and completing investigations, new preliminary investigation phase and optional use of corrective/preventative action log (for tracking purposes)**

BC Timber Sales Kootenay CLIENT - EMS/SFM INFORMATION SHEET October 2022

This information sheet is intended to highlight new and key EMS/SFM program expectations requirements for the Kootenay Business Area (BA) clients.

A useful guide, for reference at pre-works and project activities.

For BCTS Public EMS/SFM website [CLICK HERE](#)

Project Binders

- Provided by BCTS staff at time of pre-work
- To be maintained on site during active operations (appropriate documentation)
- Utilize contents to promote awareness i.e. field books, stickers etc.

Site Supervision - plays a key role in project plan success.

- ✓ Meets BCTS Environmental Field Procedure (EFP) #02 (updated) expectations/requirements, for details [Click Here](#) and,
- ✓ Is current with provincial EMS supervision training
- ✓ Provides on-site supervision, project monitoring, pre-workers, worker training etc.
- ✓ Be familiar with BCTS Kootenay Supervisors Field book, a good source of information

EMS / SFM Training

- *New Training Requirements*** – Table 008-1 LPC Training Matrix/Table 008-1A LPC Training Summary
 - LPC Supervisors – Introductory Information on Working with Indigenous Peoples [Click Here](#)
 - LPC Workers – Summary, Working with Indigenous Peoples [Click Here](#)
 - LPC Supervisors – SFM Program Continuing Education [Click Here](#)
 - Changes to frequency of training - Increase in how often training courses are to be re-taken
- EMS Worker Tailgate Training for useful tool tailgate training [Click Here](#)
- EMS Supervisor Training....for new site supervisors or a refresher [Click Here](#)
- SFM Awareness, supervisor/workers be familiar with , sustainable forestry principles [Click Here](#)
- IP and SAR Information Packages Review Invasive Plant & Species at Risk information packages provided in binders for workers
- Road Construction Initiated Slide Training - applicable for supervisors/equipment operators constructing a road where a risk of landslide has been identified - review the module [Click Here](#) (50 mins)

Pre-works

- ✓ Appropriate personnel to attend BCTS pre-work i.e. site supervisor, logging contractor and or forest professional.
- ✓ All workers must receive pre-works, understanding of project plans, roles & responsibilities (documented).
- ✓ Conduct pre-works prior to ops start-up & after periods of extended shutdowns.

BC Timber Sales Kootenay

CLIENT - EMS/SFM INFORMATION SHEET

October 2022

Inspections and Monitoring Activities

- ✓ Monitor and inspect current and completed activities as per EFP #02 Project Supervisor (**updated**)
- ✓ Follow-up on actions and deficiencies identified in BCTS or client self-inspections, follow-up includes implementation and documentation. Participate in BCTS joint inspections

Emergency Response Preparedness

- ✓ Complete ERP for project
- ✓ Maintain applicable ERP equipment on-site (spill kits, fire suppression equipment, hand tools)
- ✓ Fax copy of ERP page 1 to Southeast Fire Centre 250-365-9919
- ✓ Practices ER drills to ensure staff/equipment is prepared for emergencies

Fuel Handling

- ✓ To support fuel handling compliance & best practices, all workers refer to EFP #06 [Click Here](#)
- ✓ Distribute fuel handling stickers provided in project binders.

Changing the Plan

- ✓ Communicate changes to the plan with BCTS staff especially at pre-works.
- ✓ Changes to project plans may require updates to mapping information, field marking, review by a forest professionals and subsequent pre-works with operational personnel.
- ✓ Also refer to Kootenay BA changing the plan document [Click Here](#)

Fire Hazard Assessments & Open Burning

- Submit copies of completed fire hazard assessments to BCTS,
- Opening burning activities are subject to open burning regs, e.g. fuel break and extinguishment,
- Best practice to document pre-burn decision. [Click Here](#) for helpful checklist.

Working around Streams

- ✓ Fall and Yard away from streams, where not practicable, clean/remove introduced debris concurrent with harvesting ops.
- ✓ Streams without RRZ will have 5 m machine free zones
- ✓ Minimize footprint in riparian areas, utilize stubbing/high stumps along water features, retain non-merch etc.
- ✓ For more information on best practices refer to FREP report Dec 2017 [Click Here](#)

Water Quality and Sedimentation Best Management Practices

- Utilize Kootenay Wet Weather Operating Guide, useful tool [Click Here](#)
- Kootenay temporary-winter crossing guide [Click Here](#)
- BCTS EFP 4 and 5 (**updated**) outline expectations for operating during favourable conditions and utilizing sediment control measures.

BC Timber Sales Kootenay CLIENT - EMS/SFM INFORMATION SHEET October 2022

Invasive Plants (IP)

Ensure workers are familiar with IP Information Package provided in project binder and Kootenay BA IP Environmental Field Procedure EFP #09 including:

- ✓ Known location of infestation areas & specified measures,
- ✓ Reporting, inspect cleaning equipment requirements
- ✓ Grass seed (spring/fall) exposed soils within 12 months following soil exposure

Species of Risk

Ensure workers are familiar with SAR Information Package this includes:

- ✓ Species of Management Concern Handbook- know what to report in your area [Click Here](#)
- ✓ Know location of species of management concern in the project area
- ✓ Kootenay BA SAR guide and reporting requirements [Click Here](#)

Logging Completion Report Form

For TSL Holders, submit to BCTS “completion of primary activities (copy in binder)
Completion of TSL obligations is linked to BCTS deposit release procedures

What to Report

- a) EMS Incidents = Fires, Spills, Erosion Events, Water Disruption, non-compliance/non-conformance. Complete Part A. Checklist #09 (**updated**) copy to BCTS.
- b) Unidentified Resource Features / Values i.e. Nests, Bear Dens, etc.
- c) Changes to the Plan
- d) Sightings of species at risk and identified invasive plants.

CERTIFICATION AUDIT FINDINGS

Annual internal and external audits of BC Timber Sales’ (BCTS) operations are required to maintain certification under the Sustainable Forestry Initiative (SFI) Forest Management Standard. The 2021-22 BCTS audits were successful and indicated BCTS and its clients are implementing the required measures to ensure operations are sustainable and conducted in a responsible manner. Thank you to the clients who participated in the audits. Below is a summary of the May 1, 2021 – March 31, 2022, Recertification Audit findings and notifications for BCTS clients. For details, visit:

➤ [bcts_sfi_forest_certification_audit_summary_report_2022.pdf \(gov.bc.ca\)](https://www.gov.bc.ca/bcts-sfi-forest-certification-audit-summary-report-2022.pdf)

SFI Requirement	Notification to BCTS Clients
Operational Controls / Legal Compliance <ul style="list-style-type: none"> Must follow Environmental Field Procedures (EFPs) 	<ul style="list-style-type: none"> Ensure your staff understand BCTS EFPs and STOP Work Procedures. Must stop work and contact BCTS if unfavourable weather or site conditions could cause environmental damage.
Pre-work and Certification training Training must be completed and documented for all workers on site	<ul style="list-style-type: none"> Recommend project supervisors participate in BCTS pre-works. Training requirements are outlined in EMS Table 008-1. Use EMS Table 008-1A to document training. Qualified supervisors are responsible for delivering BCTS EMS/SFM tailgate training to all workers
Water Management/ Sediment Control <ul style="list-style-type: none"> Must maintain natural drainage patterns and prevent sedimentation. 	<ul style="list-style-type: none"> Use of log bundles is an accepted practice for temporary management of water; however, bundles must be properly constructed, maintained, and removed in a timely manner. Log bundles intended for winter use only must be removed prior to freshet or unfavourable conditions.
	<ul style="list-style-type: none"> Ditches and cross ditches must be properly established and maintained. Temporary trails must be constructed, maintained, and monitored so as not to redirect water flow or transport sediment.
	<ul style="list-style-type: none"> Licenseses must continuously monitor natural drainage and ensure appropriate measures (water management & sediment control) are in place prior to temporary shutdown.
Protect and maintain soil productivity	<ul style="list-style-type: none"> Ground-based operations should be conducted and monitored to avoid excessive soil disturbance. Operate during favourable site conditions.
Fuel Handling / EFP 06 <ul style="list-style-type: none"> All workers must be familiar with EFP 06 	<ul style="list-style-type: none"> Fuel Tanks must be stored and flammable and combustible liquids dispensed outside of the riparian management area. Fuel Tanks must be labelled and inspected as required, and adequately secured. WHMIS Safety Data Sheets must be available on site.

Information on Sustainable Forestry Initiative certification and reporting inconsistent practices is available at:

- ❖ [The Sustainable Forestry Initiative](#)
- ❖ [The Western Canada SFI Implementation Committee \(WCSIC\) - Inconsistent Practices](#)

For questions about forest certification, contact the
[BCTS Headquarters Certification Officer or any of our BCTS business area offices.](#)



ENVIRONMENTAL EMERGENCY RESPONSE PLAN

For BCTS Client Use

Part A Core Information

Worksite Details

Project (TSL or Contract)#

Physical location of activity:

Latitude:

Longitude:

Latitude:

Longitude:

Latitude:

Longitude:

Duration of Activities:

Date:

Year

Month

Day

Company Contact Information

24 hr Contact Name and Phone (s) #:

Company Name/Email:

Other Key Emergency Contact(s) #:

Environmental Emergency Contact Information

Forest Fire Reporting : **1-800-663-5555** or * **5555** on the Cantel and Telus networks

Spill Reporting and other Environmental Emergencies to Land & Water:

1-800-663-3456 Emergency Management BC (EMBC).

Natural Gas Leaks: Contact EMBC and utility company (if known): FortisBC **1-800-663-9911** (Northeast, Fraser Valley, South), Pacific Northern Gas (Northwest and Northeast) **1-800-663-1173**, Enbridge (Northeast and Fraser Valley) **1-800-663-9931**

CANUTEC (Canadian Transport Emergency Centre): **1-613-996-6666** or ***666** on cell phone

BC Timber Sales Contact:

Cameron Paterson 250-551-0364, George Edney 250-354-8411, Nelson Office 250-825-1100

Part B Supplemental Information. *It is the licensee, permittee and contractor's responsibility to ensure that all the phone numbers are correct.*

General Contact Information

Police: 911

WorkSafeBC: 1-888-621-7233 (24 hrs/day, 7 days/week)

Ambulance: 911

Joint Rescue Coordination Centre: 1-800-567-5111 or cell #727

Fire Department: 911

Hospital:

Poison Control Centre: 1-800-567-8911

Water Taxi / Ferry: **Arrow Park 250-837-8634 or 778-206-0384, Needles 250-269-7222, Galena 778-206-0384** all operated by WaterBridge Ferries Inc.

Kootenay Lake 250-354-7656 operated by Western Pacific Marine



ENVIRONMENTAL EMERGENCY RESPONSE PLAN

For BCTS Client Use

Helicopter / Aircraft:

Wildfire Status Website: [Wildfire Status](#)

BC Wildfire Service Phone and Fax # (Circle Fire Centre in which activities are occurring):

Coastal:250 951-4201 Fax:250-954-0819 / **Southeast:250 365-4001 Fax:250-365-9919** / Kamloops:250 554-7701 Fax 250-376-6549

Cariboo:250 989-2600 Fax 250-989-2672 / Prince George:250 960-2300 Fax:250 562-6210 / Northwest:250-847-6633 Fax 250-847-2737

Part C Core Information

FOREST FIRE PREPAREDNESS AND RESPONSE

Initial Fire Response

1. Stop operations and notify the rest of the crew.
2. **Report Forest Fires immediately to the BC Wildfire Service (BCWS) and BCTS.**
3. The person reporting the fire shall remain in contact to communicate details of the fire suppression activities taken and what additional activities may be required.
4. The remaining crew shall begin immediate action to control and extinguish the fire, if practicable and safe to do so, to the extent of their training and competence.
5. The person in charge of a crew taking action to control a fire is responsible for continuing fire control activities until relieved by the licensee/contractor representative or BCWS personnel.

If Alone

- Take immediate action on the fire if you believe you can safely control it yourself. Report the fire to BCWS and the licensee/contractor representative as soon as you feel that the fire can be left alone without spreading out of control.
- If the fire is beyond your ability, notify the BCWS immediately and follow their instructions. DO NOT take action on an intense fire yourself.

Complete an Incident Report Form (CHK-009 or equivalent) and submit to BCTS.

Fire Roles and Responsibilities

Prior to Start-Up and During Operations

For All Industrial Activities

- Determine fire response equipment for the type of operation and associated fire risk to comply with the Wildfire Regulation:
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/11_38_2005
- When conducting an industrial operation, sufficient *firefighting hand tools* must be available on site whenever the area is snow free and there is a risk of a fire starting or spreading.
- Hand tools must be a combination and type to properly equip each person who works at the site with a minimum of one firefighting hand tool per person. Tools may include shovels, mattocks, pulaskis, fire extinguishers and hand tank pumps. The BCTS general rule for assessing the adequacy of firefighting hand tools is:
of workers assigned to the site during normal work hours = # of hand tools on site

For High Risk Industrial Activities

- Determine if your operations are High Risk as defined in Part 1 of the Wildfire Regulation.
- Determine the danger class, follow danger class restrictions and durations, keep sufficient *firefighting hand tools* plus an adequate *fire suppression system* at the activity site, and maintain fire watcher and communication requirements.
- A fire suppression system means a system for suppressing fire by delivering water, a suppressant, a surfactant, or any combination of these substances.

Determine Restrictions on High Risk Industrial Activities

Acquire local weather data to comply with the Wildfire Regulation. Weather station information is available from the BCWS website at <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/wildfire-situation/fire-danger/fire-weather>

- Danger class ratings for your site may be higher than those calculated by the BCWS. Consider local conditions when determining applicable weather station and when to restrict activities.

Note: Refer to the BCWS "Interpretative Bulletin on the Application of the Wildfire Regulation for the Forest Industry" for further guidance to the above, including a defined wildfire prevention and response system (Appendix A) at http://www.bcwildfire.ca/Industry_Stakeholders/Industry/

Fire Roles and Responsibilities continued

Provide 24hr Contact information

- Timber Sale License holders must provide an official with a 24 hour a day contact telephone number if the person proposes to carry out an industrial activity on or after March 1 and before November 1 of that year.

Provide copies of your training records as required.

Ensure employees are trained and aware of all fire emergency responsibilities.

Complete environmental Emergency Response Plan (eERP) with worksite details and company contact information.

List the minimum fire equipment that will be maintained on site for "Industrial" and "High Risk Industrial" activities during Danger Classes III, IV, and V (i.e., water tank(s), pump(s) hoses, accessories etc.):

During Operations

Ensure employees are aware of all fire preparedness responsibilities and trained as to their fire duties in accordance with WorkSafeBC requirements.

Conduct test(s) and periodic drill(s) of fire preparedness and response. Tests are to be documented on the BCTS Environmental Emergency Response Test/Drill Report Form CHK-010, records maintained on site and copies of results forwarded to a BCTS representative. Results of drills may be documented on the CHK-010 and maintained on site.

Regularly monitor the appropriate fire weather index information using your representative weather station and determine the appropriate Fire Danger Class for the area. For Danger Class Reports go to <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/wildfire-situation/fire-danger>

Restrict activities during Fire Danger Class III, IV, or V situations. Implement fire watch, patrol, early shift, and cease activity, as required (see Schedule 3 of the Wildfire Regulation). Monitor activities and changing site/weather conditions. Do not operate solely by the Schedule 3 of the Wildfire Regulation.

Ensure a copy of the environmental Emergency Response Plan (eERP) is onsite.

Conduct regular fire suppression equipment inspections and maintenance.

Take action on a forest fire that is within 1 km of the site of the industrial activity.

Complete Hazard Assessments and Abatement at prescribed intervals in accordance with the Wildfire Regulation;

- Keep all debris piles clean, obtain a Burn Registration Number (BRN) by calling 1-888-797-1717, complete hazard abatement and follow requirements including monitoring of burning activities

- For smoke management / venting indices call the Provincial Venting Index Hotline 1-888-281-2992 or visit the BC Environment Venting Index website;
<http://www.env.gov.bc.ca/epd/epdpa/venting/venting.html>
- Extinguish and inspect debris piles by the date specified according to the BRN. Apply to extend the BRN if additional time is required to extinguish burned debris piles.

Part D Core Information

SPILL PREPAREDNESS AND RESPONSE

Initial Spill Response Activity

1. Discovery and Assessment

- Follow safety procedures and put on appropriate personal protective equipment prior to initiating response plan.
- If Safe, **STOP THE PRODUCT FLOW!** Halt activities that are causing the spill (e.g. Close valves; elevate leaking hoses, shut off pumps, etc.). **Minimize Impact of Spill.**
- Prior to taking action complete an incident assessment (spill identification /volume, assess potential safety, and environmental issues).
- If you feel that the spill is beyond your level of training and experience to handle, seek assistance from a spill response specialist.**

2. Notification and Documentation

- Report spills in accordance with spill reporting criteria listed in Table 1 below.

3. Containment and Recovery.

- Take action within your ability using resources (hand tools, heavy equipment and spill response equipment) at hand to minimize the spread and impact of the spill until additional resources and expertise arrive.
- Due to the hazardous nature of gasoline, volatile gases should be allowed to dissipate before attempts are made to contain or mop up a gasoline spill.**

Spills to Land

- Determine extent of spill. Contain or redirect spills away from watercourses.
- Mark the perimeter of the spill, dig recovery ditches around the perimeter and recovery pits (sumps) within the spill area.
- Monitor ditches and recovery pits to ensure the collection system is effective.
- Recover the product from the containment area, treat or dispose of appropriately.

Spill to Water

- In a ditch or stream, contain the spill using whatever surface water containment system possible.
- Divert and corral the spilled product to a spill containment system using absorbent booms or other methods.
- Continue to sweep and corral the spilled product for recovery.

For Spills less than 25 litres

- Soak up all free products with absorbent pads, booms, and other materials.
- Place used absorbent materials in a suitable container (i.e. heavy-duty plastic bag) for disposal or recycling. Mix stained soil with loose absorbents or commercial bioremediation agents.

4. Follow-up, Disposal and Site Restoration

- Ensure spills have been documented and reported to agencies and BCTS as required.
- Complete clean-up and required mitigation actions. If required, contact a spill response specialist for assistance.
- Complete an Incident Report Form (CHK-009 or equivalent) and submit to BCTS.**

Spill Roles and Responsibilities

- ☑ **Assess risk for potential spills** identify additional preventative and control measures
- ☑ **Ensure all workers understand the environmental emergency response plan** and it is available on site at all times.
- ☑ **Ensure all workers are familiar with potential spill sites, spill kit locations and spill kit requirements.**
- ☑ **Ensure workers are trained/aware** in WHMIS, TDG and Spill response
- ☑ Have available on site appropriate MSDS.
- ☑ **Conduct test(s) and periodic drill(s) of spill preparedness and response.** Tests are to be documented on the BCTS Environmental Emergency Response Test/Drill Report Form CHK-010, records maintained on site and copies of results forwarded to a BCTS representative. Results of drills may be documented on the CHK-010 and maintained on site.
- ☑ **Complete spill kits inspections and maintain spill kits** as necessary
 - For Equipment spill kit content requirements see Fuel Handling Environmental Field Procedure EFP-06.
- ☑ **Respond to all spills** in accordance with the emergency response plan.
 - If you are responsible for a spill of hazardous material, you are then responsible to take appropriate actions to minimize environmental impact.
- ☑ **Report all reportable spills** to the appropriate agencies and to BCTS.

Spill Reporting Criteria (If in Doubt Report the Spill)

- ☑ All spills that are equal to or greater than the EMBC reportable level must be reported to EMBC as soon as possible and within 24hrs.
- ☑ Any spills of deleterious substance to a watercourse must be reported to EMBC as soon as possible and within 24hrs.
- ☑ All spills that are equal to or greater than the BCTS reportable level must be reported to BCTS contact as soon as possible and within 24 hrs.

Table 1: Reportable Levels of Hazardous Materials Spills

Hazardous Material	EMBC Reportable Level ⁽¹⁾	BCTS Reportable Level ⁽²⁾
Antifreeze	25 litres	25 litres
Diesel fuel	100 litres	25 litres
Gasoline (auto & saw)	100 litres	25 litres
Greases	100 litres	25 litres
Hydraulic Oil	100 litres	25 litres
Lubricating Oils	100 litres	25 litres
Methyl Hydrate	5 litres	5 litres
Paints & Paint Thinners	100 litres	25 litres
Solvents	100 litres	25 litres
Pesticides	1 kilogram or 1 litre	1 kilogram or 1 litre
Explosives	Any	Any

(1) as required by the BC Spill Reporting Regulation

(2) or a spill of ANY quantity that enters a surface water body (e.g.: running ditch, stream, lake)

Part E *Core Information*

LANDSLIDE & EROSION EVENT RESPONSE

Initial Response Activity

1. **Evaluate.** Follow applicable safety procedures and notify supervisor and other workers. If safe to do so, assess situation to determine if activities must be shutdown.
2. **Immediate Remedial Action.** Take steps to control further environmental impacts.
3. **Notification.** Report the erosion event to the BCTS contact within 24 hours or as soon as practical. (Refer to Reporting Criteria). It is also the LPC's responsibility to notify applicable regulatory agencies of an erosion event that may impact resource values such as fish sensitive areas, domestic watersheds, private property etc. (e.g. DFO, EMBC). Notify WorkSafeBC if the slide event relates to a safety incident.
4. **Before Leaving the Site.** Supervisors must account for all workers before leaving the site. If a shutdown is required, park all equipment in an environmentally safe location (i.e. avoid riparian management areas, steep side slopes, steep road sections, areas with excessive soil moisture, areas within reach of standing timber, etc.).
5. **If Environmental Damage Has Occurred.** The BCTS contact must review the situation with the appropriate personnel.
6. **Complete an Incident Report Form (CHK-009 or equivalent) and submit to BCTS.**

Landslide & Erosion Roles and Responsibilities

- Verify** that operations are conducted in a manner that minimizes the risk of a landslide and major erosion event occurring.
- Ensure all workers understand and are trained** in response procedures and the environmental emergency response plan is available on site at all times.
- Supervisor** to ensure all employees are familiar with risk areas.
- Conduct test(s) and periodic drill(s) of Landslide/Erosion Emergency Response.** Tests are to be documented on the BCTS Environmental Emergency Response Test/Drill Report Form CHK-010, records maintained on site and copies of results forwarded to a BCTS representative. Results of drills may be documented on the CHK-010 and maintained on site.
- Assess** landslides and erosion events, determine reporting requirements, and report to BCTS contact immediately where applicable.
- Respond to erosion events** in accordance with this emergency response plan.

Landslide/ Erosion Event Reporting Criteria

Landslides and major erosion events must be reported to BCTS in ANY of the following circumstances:

- Loss or imminent loss of life or property,
- Significant environmental damage,
- Situations which potentially create loss of provincial revenue or funds,
- Abnormal movement has occurred or is actively occurring at a site,
- Abnormal sedimentation,
- A volume of greater than 250 m³ has moved or is imminent danger of movement,
- A land area greater than 0.25 hectares is disturbed,
- A road or structure is damage and requires structural repairs.

Scope and Purpose

This ERP applies to BCTS clients (Licensees, Permittees and Contractors) and their workers involved in forest practices within Kootenay BA community and domestic consumptive watersheds. The purpose of this ERP is to prevent and respond to water disruption (from sedimentation, spills, or interrupted flows) resulting from BCTS-authorized activities.

Preparedness Roles and Responsibilities

- ☑ Know the names of and contact information for water users within the area of active operations. Ensure this information is on site and available to workers (*refer to attached contact list*).
- ☑ Know the field location of applicable points of diversion (PODs) and associated infrastructure as identified on project maps, site plans, and assessments.
- ☑ Be familiar with applicable prescriptions (for example: site plans, road designs, drainage plans, riparian management prescriptions, terrain stability and soil erosion assessments, harvest plans) when working in and around drainage areas connected to PODs including protocols for changing site conditions. Review during office and field pre-work discussions. Minimize soil disturbance.
- ☑ Ensure adequate sediment control tool kit (e.g. filter fabric, hay bales, rock for armoring etc.) is available on site and workers are aware of their roles and responsibilities for sediment abatement.
- ☑ Conduct periodic emergency response drill(s) and or test(s) related to disruption of water, based on employee knowledge and experience and seasonal and site conditions.
- ☑ Monitor activities, site and weather conditions, and water turbidity for possible impacts occurring to water quality and stream conditions associated with PODs.
- ☑ Ensure potentially-affected water users and BCTS are advised of planned water interruptions or potential sediment increases as a result of activities.
- ☑ Report to BCTS any amount of unexpected soil movement or any quantity of material spill or equipment fluid leaks within the watershed area.

Initial Response (Water Disruption Events)

1. Evaluate: Assess worker safety, hazards, & determine cause of disruption.
2. Take Control: If the disruption is a result of a forest practice, **STOP WORK**.
3. Take Action: Consider removal of POD intake and/or bypassing POD. Implement sediment abatement measures (sediment control kit).
4. Notification: Contact affected water user(s) and BCTS representatives as soon as possible.
5. Document details of the incident and response measures on *CHK-009 Incident Report Form* and submit to BCTS.
6. Work Co-operatively with BCTS, other agencies, and water users to investigate incidents and to implement measures to restore disrupted water supply quickly, thereby minimizing impacts on water users.

Sustainable Forestry Initiative (SFI) Client General Awareness Document

The purpose of this document is to provide BC Timber Sale clients (supervisors/workers) with a general awareness to the principles of the SFI Forest Management Standard, including SFI basic training requirements in a tailgate training format. To learn more about the SFI organization and its standards go to www.forests.org The SFI principles are based on an array of objectives, performance measures and indicators.

SFI Forest Management Standard Principles

Sustainable Forestry

- Forest Management is a balance of social, economic, and environmental values now and in the future
- Balancing harvesting with the needs of other values like water, soil, plants, animals, aquatic habitats and ecological communities, recreation, and the capacity of the land to grow trees including consideration of climate change adaptation and mitigation.

Forest Productivity and Health

- Protect soils because productive soils support ecological values including growing trees
- Know the applicable soil disturbance limits and use appropriate methods to avoid excessive soil disturbance
- Become familiar with applicable invasive plants in your area and prevent/minimize their introduction and spread
- Prevent forest fires

Protection of Water Resources

- To protect and maintain water quality and quantity of water bodies and riparian areas, Follow BCTS Environmental Field Procedures (EFPs) and any local Water Quality Best Management Practices (BMPs) applicable to your forest management activities
- Ensure that forest practices do not degrade water quality values through the introduction of soil/silt; petrochemical products like hydraulic fluid, oil, gas, and diesel; and other chemicals used in forest management activities, e.g., herbicides
- Maintain the water's natural drainage patterns to the fullest extent possible and re-establish natural drainage patterns upon completion of forest management activities
- Follow wet weather shutdown procedures where they exist
- Do not disrupt the natural rate and timing of water flow through road construction or other forest management activities

Protection of Biological Diversity

- Know that BCTS's Species of Management Concern (SOMC) program is intended to protect threatened or endangered species and ecological communities (plants and animals).
- Know what SOMC exist, or could exist, in areas associated with your forest management activities
- Become familiar with Project Plans for forest operations to understand how to manage for SOMC
- Know about and protect biologically significant sites in or around areas of proposed forest management activities, e.g., parks, ecological reserves, old growth management areas, wildlife habitat areas, etc.
- Maintain Wildlife Tree Retention Areas (WTRAs) and other stand-level retention requirements

Aesthetic Values and Recreation

- Implement Project Plans for forest operations to ensure that visual values on the landscape are maintained
- Prevent or mitigate potential negative impacts to recreational opportunities as a result your activities

Protection of Special Sites

- Know about geologically (i.e. Karst) or culturally (i.e. historic, First Nations traditional use) significant sites in or around areas of proposed forest management activities in order to protect their unique qualities

Efficient Use of Fiber Resources

- Ensure efficient utilization of harvested timber, minimize waste

Recognize and Respect Indigenous Peoples' Rights

- Understand and respect traditional forest-related knowledge, including non-timber forest products of value to indigenous peoples
- Identify and protect spiritually, historically or culturally important sites

Legal and Regulatory Compliance

- Know the laws applicable to your activities (See <http://www.bclaws.ca/legallinks.html>)
- Make sure your activities are consistent with Project Plans that guide your forestry management activities
- Follow applicable Safety/WorkSafeBC laws and regulations

Training and Education

- Ensure that supervisors have completed BCTS EMS/SFM Awareness training and show documentation to BCTS
- Train your crews and maintain training records
- Commit to continuous learning in the areas in which you are involved in forestry activities
- Understand what aspects of your job have the greatest environmental impacts and then learn how to implement new procedures, techniques, or technology to minimize potential impacts

Continuous Improvement

- ✓ STOP WORK if you believe the Project Plan will not work
- ✓ Monitor and inspect your work
- ✓ Follow-up on corrective and preventative actions
- ✓ Participate in internal and external audits
- ✓ Report project changes and inconsistent forest practices

If you suspect that forest practices are not meeting the SFI principles you are encouraged to submit a complaint as described on the Western Canadian SFI Implementation Committee (WCSIC) Inconsistent Practices website. To learn more about WCSIC, or how to file a complaint, please refer to the WCSIC 'Procedure for Addressing Allegations of SFI Non-Conformance' at the following web address: <http://www.wcsic.ca/Inconsistent/Practices.php>



Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BC Timber Sales (BCTS) licensees, permittees, and contractors (LPC), including their employees, agents and subcontractors involved in field activities within the scope of the BCTS Environmental Management System (EMS). It describes procedures to reduce the risk of negative impacts on the environment. This EFP does not replace the requirements of legislation, licences, permits, and contracts.

General Procedures

1. Complete a pre-work with your supervisor and/or the BCTS representative.
 - a. Obtain and review all project plan documents (e.g., harvest plan, harvest plan map, site plan supporting information, road layout and design and silvicultural treatment plans). Have them readily available during field activities.
 - b. Ensure you understand your role in the project plan prior to commencing work.
 - c. Know the flagging or field marking standards.
2. Look ahead and make sure that the Project Plan is workable.
 - a. View the area to familiarize yourself with the project plan, map contents, and site conditions.
 - b. Ensure all resource features, resource values or sensitive areas identified on the project plan documents can be located by you on the ground. Know the associated management strategies.
3. Monitor and inspect your work to ensure the work conforms to the project requirements.
 - a. Conduct operations to minimize potential impacts to hazardous or sensitive areas, resource features, resource values, water quality and site productivity.
 - b. Operate during favourable weather and site conditions. Know the project shutdown criteria.
 - c. Report to the project supervisor any conditions which may adversely affect the environment (e.g., siltation of streams, lakes or other water bodies or deterioration of the road).
4. Know the activity shutdown criteria (e.g., rainfall shutdown, fire hazard) including operational site conditions and timing windows (fisheries windows, community watersheds, migratory birds, wildlife, blasting, stakeholders).
5. Have the project plan map available and know your location at all times.
6. Keep the site clean and be prepared for emergencies, not limited to the following:
 - a. Inspect equipment regularly. Repair or maintain equipment as required.
 - b. Maintain fire suppression equipment and spill kits. Replace used supplies promptly.
 - c. Safely transport, store, and handle industrial waste (e.g., petroleum and chemical products, grease tubes, filters, batteries, coolant, wire rope, used spill pads).
 - d. Remove industrial waste regularly and dispose only at appropriate disposal facilities.
 - e. Understand the environmental Emergency Response Plan (eERP) and your responsibilities in it.

Incident Reporting

1. Document on CHK-009 and report to site supervisor and BCTS in the event of:
 - a. Hazardous material spill, uncontrolled fire or erosion/landslide
 - b. Potential non-compliance and significant non-conformance
 - c. Safety incidents, accidents, close call or previously unidentified safety hazards



Stop Work – Contact Project Supervisor and BCTS Representative if:

- There is a hazardous material spill, uncontrolled fire or erosion/landslide event
- There is uncertainty about the project plan, the responsibilities or the location of hazardous or sensitive areas.
- A previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified tree).
- Unfavourable weather or site conditions could cause environmental damage.
- Conditions have the potential for immediate environmental damage.
- There is reason to believe the project plan will not work.



ENVIRONMENTAL FIELD PROCEDURE - 02

PROJECT SUPERVISION

Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BC Timber Sales (BCTS) licensees, permittees and contractors (LPC), including their employees, agents and subcontractors, responsible for supervising field activities within the scope of the BCTS Environmental Management System (EMS). It describes the supervisors' responsibilities to prepare and supervise workers in such a manner as to reduce the risk of negative environmental impacts. This EFP does not replace the requirements of legislation, licences, permits and contracts.

Pre-work

1. Complete a pre-work meeting with your supervisor and/or the BCTS representative. Understand the information on the pre-work checklist. Ensure you obtain all relevant project information.
2. Prepare, complete and document a pre-work meeting with all workers involved in the project before the work commences:
 - a. Review relevant project information including contract, licence, permit, map, project plan, field marking standards, prescriptions, special conditions, requirements and specifications. Review environmental field procedures, environmental emergency response plans and any resource features, resource values, sensitive areas and stop-work conditions.
 - b. Provide copies of project plans and maps to workers.
 - c. Emphasize to workers that they must speak with the supervisor before any changes are made to the project plans.
 - d. View the site with workers to familiarize them with resource features, resource values, resource objectives, sensitive areas and special conditions, as relevant to their function and activities.
 - e. Document pre-work meeting with workers and record the names of attendees. A copy of the completed BCTS Prework Report can be used for this purpose.
 - f. Ensure all stakeholders are notified as required (e.g., DFO, affected water licensees or purveyors, trappers, guides, lodges, residents).
 - g. Additional pre-works with workers may be required if high risk sites have been identified, a project plan has changed or following a temporary operational shut down.
3. Additional pre-work with a BCTS representative is required after temporary operational shut down (inactive for 90 calendar days or more due to season, fire, operational restrictions, economics, etc.) or as requested.

Supervising and Monitoring Project Plans

1. Have a project plan prepared by a qualified professional as appropriate.
2. Look ahead to make sure that the Project Plan is workable.
 - a. Ensure resource features, resource values or sensitive areas are identified on the project plan map can be located on the ground. Communicate the associated management strategies to workers.
 - b. Stop work upon discovery of a previously unidentified resource feature, resource value or sensitive area; document and identify the previously unidentified resource feature on the project plan map. Report the discovery to the BCTS representative.
3. Assess the need for changes to the project plan. Licensees and permittees must amend the project plan with a qualified professional before conducting primary forest activities in a way that is different from what is described in the plan; report to the BCTS representative.
4. Know and monitor adherence to all EFP requirements.

Supervisors Must Ensure All Workers:

1. Receive adequate training, orientation, information and instructions;
2. Have relevant EFPs available, and follow the requirements of the EFPs;

3. Have relevant project plans available, and understand their associated requirements.
4. Understand EFP stop-work procedures and incident reporting requirements (EFP-01, CHK-009).

Monitor and Inspect Work:

1. Monitor and inspect current and completed works.
 - a. Review relevant items including:
 - i. Conformance to the project plan, especially areas with complexity or higher risk e.g., riparian areas or special sites;
 - ii. Conformance to EMS and Sustainable Forest Management requirements (e.g., EMS training completed and documented, pre-work(s) completed and documented, eERP completed, implemented and on-site, EFPs followed and onsite, etc.) and the BCTS Sustainable Forest Management Plan;
 - iii. Licence, permit and/or contract conditions;
 - iv. Compliance with all relevant legislation (e.g., *Forest and Range Practices Act*, *Wildfire Act*, *Forest Act*, *Transportation of Dangerous Goods Act*, *Fisheries Act*); and
 - v. Safety requirements.
 - b. Report any potential non-compliances to the appropriate agency and BCTS.
 - c. Assign corrective and preventative actions to identified non-conformances and potential non-compliances.
 - d. Follow-up on any actions identified by BCTS or the LPC inspections. Supervisor to ensure they have been carried out within the noted timelines.
2. Conduct self-inspections of the work at the frequency prescribed by BCTS pre-work or more frequently, if desired. The BCTS Client Self-Inspection Report can be used for this purpose.
3. Complete an inspection and notify BCTS prior to demobilization or temporary shutdown (inactive 90 calendar days or more due to seasonal, fire, operational restrictions, economics, etc). Ensure steps have been taken to protect resource features and prevent damage to the environment (e.g., ditches cleaned, culverts installed) prior to the shutdown of operations.

Manage Documentation:

1. Keep required documentation onsite:
 - a. BCTS pre-work report, and records of your pre-works with workers,
 - b. Project Plans and other materials provided at the pre-work,
 - c. Environmental Emergency Response Plan (eERP) available to all workers,
 - d. EFPs available to workers as relevant to their activities,
 - e. BCTS inspection reports and LPC self-inspection reports,
 - f. Completed Incident Report forms for any incidents that have occurred during the work,
 - g. Training records
 - h. Completed emergency response test reports.
2. Provide records for review upon request by BCTS.

In the Case of an Emergency or Environmental Damage:

1. Follow the eERP, including reporting to BCTS and external agencies.
2. Complete an Incident Report Form (CHK-009 or equivalent) and submit it to BCTS. Ensure corrective and preventative actions taken to address the incident are documented and completed.



Stop Work – Contact Project Supervisor and BCTS Representative if:

- There is a hazardous material spill, uncontrolled fire or erosion/landslide event.
- There is uncertainty about the project plan, the responsibilities or the location of hazardous or sensitive areas.
- Previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified tree)
- Unfavourable weather or site conditions could cause environmental damage.
- Conditions have the potential for immediate environmental damage.
- There is reason to believe the project plan will not work.



Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BC Timber Sales (BCTS) contractors including their employees, agents, and subcontractors involved in development and planning activities within the scope of the BCTS Environmental Management System (EMS). It also applies to BCTS licensees and permittees making changes to a project plan. This EFP describes procedures to reduce the risk of negative impacts of these activities on the environment. This EFP does not replace the requirements of legislation, licences, permits, and contracts.

Preparation

1. Ensure development and planning activities are carried out by an appropriate qualified professional
2. Ensure you have copies of and are familiar with all standards, guidebooks, plans and other information relevant to the scope of work.
3. Ensure all required assessments have been identified.
4. At the pre-work meeting, discuss details of project approach, designs, layouts, or other project plan requirements including professional qualifications to develop a plan or make changes.

Field Work

1. When conducting field work, ensure you:
 - a. Are familiar with relevant constraints and plans; understand how resource objectives relate to the project area;
 - b. Follow field marking standards; and
 - c. Note any discrepancies between the plans or objectives and the conditions in the field; notify the BCTS representative of any discrepancies.
2. Consider potential longer-term implications of the planned work such as providing future access. If you are not sure about possible longer-term requirements, ask the BCTS representative for direction.
3. Look at all options for timber development including roads, bridges, and culverts to ensure they are placed in the best location. Know when you can vary from specifications provided by BCTS, and when you must request approvals.

Plan Completion

1. Ensure the following information and requirements, as applicable, are correctly identified and incorporated into all layout and design work:
 - a. Forest Stewardship Plan information, site plan content and any amendments.
 - b. Applicable engineering, mapping, boundary, and field marking requirements.
 - c. Any key points noted during reconnaissance.
 - d. First Nations, stakeholders and other agencies commitments as communicated via BCTS.
 - e. Location of streams, terrain and other important features including wildlife tree retention areas and reserves and the related retention or buffer requirements.
 - f. Location of adjacent resource values.
 - g. Recommendations from professional assessments (e.g., terrain stability, windthrow, soil, watershed, stream).
 - h. Any measures to ensure stability of the area during extreme weather events; roads or cutblock boundary(s).

- i. Location of end-haul sections, spoil sites and quarry/pits; properly classified soils/rock.
 - j. Right-of-way design and markings including landing size and location.
 - k. Any necessary trails.
 - l. All shut down requirements and timing restrictions.
 - m. The harvesting system planned to be used and the retention levels for partial cut harvest prescriptions are identified in the harvest plan.
 - n. Appropriate referencing (photo ties, reference points).
2. Ensure major crossing site plans are identified for, or completed by, a qualified professional.
 3. Ensure water and sediment control measures are incorporated into the plan.
 4. Ensure all work is in conformance with applicable requirements and standards applicable to the BCTS business area.
 5. If you have any concerns about potential environmental impacts relating to this information and the associated prescriptions, contact your supervisor and the BCTS representative.



Stop Work – Contact Project Supervisor and BCTS Representative if:

- There is a hazardous material spill, uncontrolled fire, or erosion/landslide event.
- There is uncertainty about the project plan, the responsibilities, or the location of hazardous or sensitive areas.
- A previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified tree).
- Unfavourable weather or site conditions could cause environmental damage.
- Conditions have the potential for immediate environmental damage.
- There is reason to believe the project plan will not work.

Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BC Timber Sales (BCTS) licensees, permittees, and contractors (LPC), including their employees, agents, and subcontractors, involved in permanent and temporary road, bridge and culvert construction, maintenance, inspection, and deactivation within the scope of the BCTS Environmental Management System (EMS). It describes procedures to reduce the risk of negative impacts of these field activities on the environment. This EFP does not replace the requirements of legislation, licences, permits, and contracts.

Road, Bridge and Major Culvert Inspections

1. Understand all applicable inspection and engineering requirements. Know which sites and structures require assessments. Assessments must be done by those trained and professionally competent.
2. Review all relevant assessments prior to inspection. Understand their management implications.
3. Review or walk the project area, as well as the surrounding area of influence, to ensure all relevant field information is collected, complete, reported and mapped.
4. Understand and use the appropriate inspection form. Record all inspection results, identifying any deficiencies or additional inspection requirements and submit to the project supervisor.

Road Construction, Maintenance and Deactivation

1. Have a project plan (e.g., road layout and design, plans and profiles, deactivation, maintenance).
2. Ensure compliance with applicable timing windows and other specifications (e.g., fisheries windows, community watersheds, migratory birds, wildlife, recreation).
3. Ensure safety signage is posted on sites as required.
4. Construct and maintain the road to ensure the structural integrity of the road prism and clearing width are protected, the drainage systems are functional, and the road is safe for industrial use.
5. Report to the project supervisor any road conditions which may adversely affect the environment (e.g., siltation of streams, lakes or other water bodies, or deterioration of the road).
6. Incorporate considerations for extreme weather events and climate change to ensure functionality of roads and protection of the environment.
7. Have appropriate water control measures on roads at locations where there is a risk of erosion, impacts to water quality, classified stream or fish habitat.
8. Before equipment demobilization or prior to temporary or seasonal shutdown, and/or when precipitation is occurring in an amount causing erosion of surface material:
 - a. Install back-up cross ditches at culvert locations.
 - b. Establish water-bars and breach grader berms to disperse runoff.
 - c. Perform site clean-up to ensure water management features (culverts, ditches) are clean of introduced logging debris and functional.
9. Maintain natural surface drainage patterns. Avoid directing water onto unstable slopes or erodible soils; direct water to stable slopes and/or armour outfalls with rock.
10. Minimize the impact on water quality and site productivity:
 - a. Operate during favourable weather and site conditions. Know the project shutdown criteria.
 - b. Install culverts and other drainage structures concurrently with subgrade construction.
 - c. Utilize sediment control measures as required (e.g., silt fences, hay bales, rock armouring, swales, water bars or sediment ponds).
 - d. Clean introduced debris from ditches, streams and culverts on an on-going basis before any impact can occur.

- e. Ensure road surface drainage is directed to drainage structures and is not impeded.
 - f. Minimize erosion potential of exposed soil surfaces by seeding of disturbed areas.
 - g. Seeding must be at appropriate times and with an appropriate mix of seed to ensure effectiveness and avoid the spread of invasive species.
11. Control blasting to minimize fly-rock damage and slope instability. Adhere to blasting timing windows.
 12. Know the locations of end-haul and spoil sites.
 13. Do not remove gravel or other fill from Riparian Management Areas. Avoid constructing pullouts in Riparian Management Areas.
 14. When re-establishing natural drainage patterns during road deactivation, the road fill should be removed down to the natural ground level. Cut and fill slopes must be left in a stable condition.
 15. Prepare professional conformance and assurance statements if required for road design, construction, maintenance and deactivation.

Bridge or Culvert Installation, Maintenance and Removal

1. Have a project plan deemed appropriate by a qualified professional (e.g., installation, deactivation, maintenance).
2. Bridges and major culverts (greater than or equal to 2000mm) require a coordinating registered professional and professional of record to oversee, design, inspect and sign-off the project.
3. Comply with timing windows, legislation and other specifications (e.g., *DFO Fisheries Act* "projects near water" requirements and guidance, fisheries windows, community watersheds, migratory birds, wildlife, blasting, stakeholders).
4. Construct and maintain bridges and culverts in accordance with the project plan. Ensure bridges and culverts are structurally sound, appropriate and safe for industrial use.
5. When working on crossings, know the stream classification, management zone and associated prescription. During construction of temporary access trails, minimize the impact to water features.
6. Minimize the impact on water quality and site productivity:
 - a. Install culverts and other drainage structures concurrently with subgrade construction.
 - b. Utilize sediment control measures as required (e.g., silt fences, hay bales, rock armouring, swales, water bars, or sediment ponds).
 - c. Clean introduced debris from ditches, streams and culverts on an on-going basis, and before any blockages can occur.
 - d. Incorporate considerations for extreme weather events and climate change to ensure functionality of roads and protection of the environment.
 - e. Minimize erosion potential of exposed soil surfaces by seeding of disturbed areas.
 - f. Seeding must be at appropriate times and with an appropriate mix of seed to ensure effectiveness and avoid the spread of invasive species.
7. Operate during favourable weather and site conditions. Know the project shutdown criteria.
8. Temporary structures such as log bundles must be removed prior to unfavourable conditions.
9. Avoid placing erodible materials on bridge decks, in stream channels or on flood plains. Clean bridge decks and remove erodible materials.
10. Maintain natural surface drainage patterns. Avoid directing water onto unstable slopes or erodible soils; direct water onto stable slopes and/or armour outfalls with rock.
11. Armour culvert inflows, outflows and fill slopes to minimize erosion as required. It is a good practice to pre-mark inlet and outlet culvert locations to ensure appropriate road prism fit. Culvert installation should consider skew, slope and percent of embedment as designed.
12. Dispose of wood culvert/bridge debris in designated sites outside riparian management areas.
13. Ensure professional conformance and assurance statements are prepared for bridges and major culverts by the professional of record (POR).

Fire Hazard Assessment and Abatement

1. Complete hazard assessments at prescribed intervals and complete abatement in accordance with the *Wildfire Act* and Regulation. Submit assessment to BCTS upon request.
2. If burning is part of the plan for abatement, ensure required notification is made, approvals received and conditions followed. Ensure burn area is safe from escape and clear of hazardous or sensitive areas. Monitor burned sites for extinguishment.



Stop Work – Contact Your Project Supervisor and BCTS Representative if:

- There is a hazardous material spill, uncontrolled fire or erosion/landslide event.
- There is uncertainty about the project plan, the responsibilities or the location of hazardous or sensitive areas.
- A previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified trees).
- Unfavourable weather or site conditions could cause environmental damage.
- Conditions have the potential for immediate environmental damage.
- There is reason to believe the project plan will not work.



ENVIRONMENTAL FIELD PROCEDURE - 05

HARVESTING

Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BC Timber Sales (BCTS) licensees, permittees, and contractors (LPC), including their employees, agents, and subcontractors, involved in all phases of harvesting within the scope of the BCTS Environmental Management System (EMS). It describes procedures to reduce the risk of negative impacts of these field activities on the environment. This EFP does not replace the requirements of legislation, licences, permits, and contracts.

Project Plans

1. Have a project plan prepared by a qualified professional as appropriate. Ensure the project plan is applicable to the phase of operation.
 - a. Choose suitable landing and yarder setting locations that are stable and away from water courses.
 - b. Pre-mark or at least know existing culvert locations and classified stream locations; ensure they are functional at all times until these structures are removed.
 - c. If a change of plan is needed, stop work, then notify project supervisor. Changes to a project plan must be documented, made by a qualified professional, and meet the intended results and strategies for the project area and protect environmental values.

Falling

1. Fall next to boundaries only when boundaries are clearly visible (know where they are).
2. Use extra caution when falling adjacent to boundaries and reserves in order to minimize damage to standing trees and protect resource features, resource values (e.g., cultural) and sensitive areas.
3. Follow stream prescriptions when falling, limbing and bucking adjacent to watercourses.
4. Know which streams and gullies require cleaning of introduced debris.
5. Know leave-tree, stubbing and retention requirements, and monitor your progress to ensure the requirements are met.

Yarding, Skidding, Forwarding, Loading, Processing and Hauling

1. If yarding or skidding in steep or gullied terrain, ensure you implement yarding/skidding strategies to minimize impacts to soil productivity and water quality.
2. Use appropriate methods to minimize damage to reserve trees (e.g., dispersed retention trees, retention tree patches, etc.).
3. Know the applicable soil disturbance limits and use appropriate methods to avoid excessive soil disturbance (e.g., temporary access structures, gouges, ruts, scalps and compacted areas).
4. Minimize the impact on water quality and site productivity:
 - a. Take actions to mitigate potential erosion and/or sedimentation from temporary access trails.
 - b. Utilize sediment control measures as required (e.g., silt fences, hay bales or sediments ponds).
 - c. Clean introduced debris from ditches, streams, and culverts on an on-going basis, and before any blockages can occur.
5. Operate during favourable weather and site conditions. Know the project shutdown criteria.
6. Know the project shutdown criteria including operational site conditions and timing windows (e.g., fisheries windows, community watersheds, migratory birds, wildlife, blasting, recreation).
7. Know the stream classifications and implement riparian management area requirements (e.g., machine free zones, riparian reserve zones, stream cleaning, etc.) for the watercourses identified in the project plan.
8. Rehabilitate excavated and bladed temporary access trails, temporary roads, landings, etc., as required. Ensure rehabilitation activities maintain natural drainage patterns.
9. Temporary structures such as log bundles must be removed prior to unfavourable conditions.

10. Avoid decking wood, processing wood, and piling wood debris in riparian management areas.
11. Minimize decked wood and debris pile impacts to standing timber and reforested areas.
12. Report to the project supervisor any road conditions which may adversely affect the environment (e.g., siltation of streams, lakes or other water bodies or deterioration of the road).
13. Before equipment demobilization or prior to temporary or seasonal shutdown, perform site clean-up to ensure water management features (culverts, ditches) are clean of introduced logging debris and functional.

Fire Hazard Assessment and Abatement

1. Complete hazard assessments at prescribed intervals and complete abatement in accordance with the *Wildfire Act* and Regulation. Submit assessment to BCTS upon request.
2. If burning is part of the plan for abatement, ensure required notification is made, approvals are received, and conditions are followed. Ensure burn area is safe from escape and clear of hazardous or sensitive areas. Monitor burned sites for extinguishment.



Stop Work – Contact Project Supervisor and BCTS Representative if:

- There is a hazardous material spill, uncontrolled fire or erosion/landslide event.
- There is uncertainty about the project plan, the responsibilities, or the location of hazardous or sensitive areas.
- Previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified tree)
- Unfavourable weather or site conditions could cause environmental damage.
- Conditions have the potential for immediate environmental damage.
- There is reason to believe the project plan will not work.



File: ARCS-00350-25/15208F

June 23, 2011

To: All Forest Industry Licensees
Regional Executive Directors
District Managers
Fire Centre Managers

From: Gary Townsend
Assistant Deputy Minister
Integrated Resource Operations

Re: Update on Recent Wildfire Regulation Amendments and New Interpretive Bulletin

This letter provides an update to the forest industry on recent amendments to the Wildfire Regulation and includes a revised interpretive bulletin on the application of the wildfire regulation for fire prevention and suppression response.

The regulation amendments specify an option for the use of professional reliance for the purposes of fire hazard assessment and abatement. The Order in Council for the regulation amendment is attached, and the Wildfire Regulation will be updated online to include these amendments.

The revised interpretive bulletin on the application of the Wildfire Regulation for fire prevention and suppression response is also attached and it replaces a previous bulletin that was issued on June 12, 2008.

May 2011 Overview of Regulation Amendments

- The definition of “fire suppression system” has been amended to clarify that a water delivery system may be required as part of an adequate fire suppression system.
- A new definition of “qualified holder” has been established to be able to define the requirements to carry out hazard assessments and hazard abatement by the category of persons.

**Ministry of Forests, Lands
And Natural Resource
Operations**

*Office of the Assistant
Deputy Minister
Integrated Resource
Operations Division*

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- A professional reliance option has been recognized for qualified holders to conduct hazard assessments.
- A professional reliance option has been recognized for qualified holders to determine abatement levels based upon hazard assessments. In addition, the abatement period for qualified holders now begins at the start of an industrial activity and is 24 months in prescribed areas (equivalent to interface areas), and 30 months for areas outside of the prescribed areas (equivalent to non interface) from the start of the industrial activity in which to abate. Professional reliance may also be used to prescribed alternative periods for non-interface areas.

Interpretive Bulletin – Forest Industry Guidance

An updated interpretive bulletin (Interpretive Bulletin on the Application of the Wildfire Regulation for the Forest Industry) is intended to bring clarity around a wildfire prevention and suppression response associated with industrial activities as a result of some key issues raised by the forest industry.

This bulletin replaces all previous bulletins and provides guidance to the forest industry on a results based approach and the use of professional reliance for the determination of an appropriate fire prevention and suppression response. In addition an attached Appendix A to the guidance document provides a description of a default wildfire prevention and suppression response system that would apply in most given situations to meet legislative requirements.

The elements of the Wildfire Regulation as discussed have been developed in consultation with industry and we look forward to continuing our ongoing partnership with all stakeholders as we work together in managing the land base.

If you have any questions or concerns, please contact Lyle Gawalko (Lyle.Gawalko@gov.bc.ca) (250-387-5782) or your local Fire Centre.

Sincerely,



Sr **Gary Townsend**
Assistant Deputy Minister

Attachment:

cc: Brian Simpson, Director, Wildfire Management Branch
Lyle Gawalko, Manager, Fire Management, Wildfire Management Branch



Ministry of
Forests, Lands and
Natural Resource Operations

WILDFIRE MANAGEMENT BRANCH

Interpretive Bulletin

**on the Application of the Wildfire Regulation
for the Forest Industry**



June 2011

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Note: This bulletin replaces all previous bulletins on this topic. This guidance is not intended to provide legal advice, nor is it intended to fetter the discretion of the minister or delegated decision-makers in making statutory decisions. The views expressed in this bulletin are those of Wildfire Management Branch, and it is the responsibility of the person carrying out the industrial activity to meet the legislative requirements in all circumstances.

Objective and Scope

This bulletin is intended to provide guidance to forest industry and government staff who are seeking to comply with or assess compliance with provisions of the *Wildfire Act* and Wildfire Regulation for wildfire prevention and suppression response associated with industrial activities. This bulletin offers guidance on two ways to comply with regulatory requirements either through the use of:

- 1) a professionally designed wildfire prevention and suppression response; or,
- 2) a defined prevention and suppression response as set out in the attached Appendix A and based upon the previous Forest Fire Prevention and Suppression Regulation (FFPSR) and the current Wildfire Regulation.

The expected outcome of the *Wildfire Act* and Regulation is that fire starts are prevented, but, if a person causes a fire, they are required to extinguish it if practicable, or control the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official. The person must have enough resources available to ensure that the response to a fire is adequate, timely and commensurate with the fire hazard, in accordance with the legislation.

Background

The *Wildfire Act* and the Wildfire Regulation have provisions for results-based management and they incorporate the concept of professional reliance. The drafting of the Wildfire Regulation moved the legislation to a less prescriptive framework than had been the case under the former *Forest Practices Code of British Columbia Act* (FPC) and the Forest Fire Prevention and Suppression Regulation (FFPSR). This has resulted in a shift from prescribed requirements for all circumstances under the FPC to a requirement under the regulation to assess the fire hazard and prevent fire starts and if a fire starts, to limit fire spread and damage until additional resources arrive or the person is relieved by an official.

Note that the replacement of the FPC wildfire provisions with the results-based approach of the Wildfire Regulation did not signal that the old provisions were inadequate, but were meant to add flexibility for industrial users to adapt their fire preparedness and suppression response to local conditions and circumstances, so long as fire prevention and suppression results were maintained or improved relative to past practice.

In recognition that not all forest operations wish to utilize a professionally designed wildfire prevention and suppression response, and would instead prefer to use a defined prevention and suppression response option, this information is included in Appendix A (page 12). Appendix A provides guidance on basic fire fighting tools, water delivery systems, equipment and fire prevention that can be used to comply with legislation and fulfill the requirements of the Wildfire Regulation. A wildfire prevention and suppression

response option that varies from Appendix A would be considered to be a results-based approach in which reliance on professional advice and the exercise of due diligence would be key.

For a person responsible for complying with the Wildfire Regulation, the challenge is in determining – in advance and in their particular circumstances – when they have, for example, an ‘adequate fire suppression system’ (sections 6, 21, 22) or a sufficient ‘water delivery system...to effectively fight a fire of reasonably foreseeable size’ (section 1). Similarly the sufficiency of fire fighting hand tools and fuel breaks needs to be considered (sections 5, 7). When making these self-assessments, a person needs to consider the fire hazard and exercise reasonable care. It is intended that this bulletin will bring clarity to such issues.

The requirements of the Wildfire Regulation, such as for fire suppression systems, fire fighting hand tools or fuel breaks, are examined in detail during an inspection or a fire investigation. The examination will determine if the level of prevention is appropriate to limit the risk of a wildfire start (prevention) and extinguish if practicable, or contain the fire and limit fire spread and damage (suppression) in consideration of the fire hazard and the ability to respond.

Further, it is the intention of the WMB to relieve a person from carrying out voluntary firefighting within 48 hours subject to legislated priorities such as fire activity, workload demand and available resources. Voluntary firefighting will be compensated for in accordance with [section 17](#) of the *Wildfire Act* and policy 9.1.

Due Diligence

Even if a fire starts or escapes, two defences may be raised including: due diligence and officially induced error. The concept of “*due diligence*” is central to the structure of the results-based forest practices legislative regime. Due diligence means exercising all reasonable care commensurate with the fire hazard. Reasonable care is assessed objectively based on what a prudent person acting reasonably would do in the same circumstances.

Under [section 29\(a\)](#) of the *Wildfire Act*, due diligence is a defence to an alleged contravention of the Act or the Wildfire Regulation. Establishment of a due diligence defence is up to the person conducting an industrial activity and this guidance is not intended to instruct how to do so.

It is recognized that not every fire will be prevented or contained. If a fire starts, or escapes initial attack efforts, an assessment of compliance with the *Wildfire Act* and Regulation will be conducted. If reasonable precautions were taken to prevent a fire from starting and spreading commensurate with the fire hazard and industrial activity, and those precautions would have been sufficient under normal or reasonably foreseeable circumstances to extinguish or suppress the fire until back-up resources arrived, then those precautions will be important considerations in a determination of compliance. In the event that circumstances that were reasonably unforeseeable (e.g. accident, extreme weather event) occur and allow a fire to escape suppression response, due diligence may be a defence against non compliance if it is determined that the measures in place would normally have prevented fire escape.

Results Based Approach and Professional Reliance

Under a results-based approach, professional reliance can be used by a person carrying out industrial activities to assess the risk of a fire start caused by each activity, the potential fire behaviour at the site of the industrial activity¹ at the times when fire starts are most likely, the expected response times, and the likely consequences should a wildfire occur. In this context, the person or their professional needs to determine what constitutes an adequate and sufficient wildfire prevention and suppression response.

Typically the person would rely on a forest professional to identify adequate and sufficient prevention and suppression response measures. If lacking the knowledge, experience, and expertise to identify and fully assess the relevant factors, the advising professional would be compelled to seek the advice of specialists or experienced peers with knowledge of fire behaviour, fuel management, fire response, etc. Wildfire Management Branch staff may provide assessment and peer review of proposed prevention and suppression response in general terms, however, this should not be interpreted as endorsement. The responsibility of meeting legislated requirements remains with the person carrying out the activity.

A professional may utilize a defined wildfire prevention and suppression response (noted in Appendix A) for some or many activities or circumstances. A professional may also utilize alternate measures to meet operational considerations that are expected to lead to the same or better prevention and suppression outcomes.

When varying from the defined prevention and suppression response, Industry is advised to employ due diligence in the development and deployment of alternate measures commensurate with the risk or degree of variation. Evidence of due diligence might include a written rationale or assessment of factors considered, emergency response plans for wildfire, deployment and inventory of suppression resources, fire weather monitoring activities, the opinions of qualified forest professionals, and other considerations.

In a results-based context, terms like “adequate” and “sufficient” may be satisfied when a person has to the extent practicable:

- i. considered and mitigated the circumstances and conditions including the fire hazard that may result in the person’s industrial activity or activities causing a wildfire (prevention), and,
- ii. in consideration of the fire hazard and the ability to respond (suppression), for a particular situation, taken reasonable steps to extinguish or control the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official.

Fire Hazard

For the purposes of this document, fire hazard is defined as:

¹ For a discussion of the “Site of the Industrial Activity” see page 7.

- ***the risk of a fire starting*** which relates to the risk conditions associated with fuel condition and weather (moisture content, arrangement, and type of fuel as well as past, current and predicted weather conditions);
- ***the hazard associated with an industrial activity*** (high risk activities are particularly hazardous but other activities can be hazardous in high risk conditions), and,
- if a fire were to start,
 - ***the volatility of the fire's behaviour*** meaning the rate of spread in consideration of the fuel characteristics, topography and weather (slope, aspect, wind, temperature, etc.) and,
 - ***the difficulty of controlling the fire*** (distance from other fire control resources, depth and arrangement of fuels, weather, etc.) and,
 - ***the potential threat to values at risk*** (probability and consequence of other values being impacted by the fire including interface, major infrastructure, and other values).

Hand tools

Under section 5 of the Wildfire Regulation, “if there is a risk of a fire starting or spreading ... a person who carries out an industrial activity...” requires “...hand tools...to properly equip each person...” The intent is that when a fire starts, every worker at the site will actively participate in the suppression of the fire and will be suitably equipped to do so.

For the purposes of section 5 of the Wildfire Regulation, one of the first considerations is identifying that there is a risk of a fire igniting and then spreading to cause damage. If there is no risk of a fire starting or spreading (e.g. snow is covering the cutblock and it does not melt) there would be no need to have fire fighting hand tools on site.

It is intended that the number of tools required would be dictated by the number of workers assigned to the site during normal work. It is not intended that each site must have adequate tools to equip each and every person who may subsequently come on site to undertake fire control actions, since additional resources should arrive with their own tools.

Each worker should have access to a tool with which to carry out fire suppression work. “Fire fighting hand tools” are defined in regulation to include shovels, mattocks, pulaskis, fire extinguishers and hand tank pumps, and the components of a water delivery system can also be considered tools. A person working at the end of a nozzle, pulling hose in support or operating a pump would not require an additional hand tool, whereas a person building hand guard would be expected to have a hand tool such as a shovel, mattock or pulaski suitable for the ground conditions. Other tools such as a McLeod tool, hazel hoe or other effective fire fighting tools might be an effective alternative to a mattock or pulaski, if appropriate for the conditions and type of fire suppression expected.

Fire suppression system

The “fire suppression system” obligation does not apply to every industrial activity. The obligation applies to “high risk activities” as defined in section 1(1) of the Wildfire Regulation which are a subset of “industrial activities” as defined in subsection 1(3). In addition to the hand tool requirements, high risk

activities carry additional responsibilities including the obligation under subsection 6(3) (b) (ii) to keep an “adequate fire suppression system” on site when there is a risk of a fire starting or spreading.

Under section 1(1) of the regulation:

“fire suppression system” means a system for suppressing fire by delivering

- (a) water,*
- (b) a suppressant,*
- (c) a surfactant, or*
- (d) any combination of the substances listed in paragraphs (a) to (c)*
and may include a water delivery system

“water delivery system” means a system that can

- (a) deliver a sufficient volume of water to effectively fight a fire of a reasonably foreseeable size, taking all factors into consideration, including the conditions of any area where the water delivery system may need to be used, and*
- (b) deliver water to any place*
 - (i) at the site of an industrial activity,*
 - (ii) on the burn area or site of the high risk activity, or*
 - (iii) reasonably adjacent to the burn area or the site of a high risk activity;*

Note that a water delivery system is a fire suppression system by definition, but that a fire suppression system need not necessarily include a water delivery system. It could be, for example, a system capable of delivering a chemical retardant or even a backhoe capable of covering a fire with soil (a suppressant) for rapid initial attack.

A fire suppression system can potentially take many shapes and forms as dictated by the type of high risk activity and the fire hazard. It may involve any of the application of: water alone, water mixed with a surfactant, a suppressant (e.g. soil, retardant, or foam), or a combination of all three. The system should be practical and reasonable for the activity being carried out, and capable of extinguishing or controlling the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official. If the fire suppression system involves the delivery of water, it should be nearby, operational and capable of being deployed in a length of time commensurate with current fire hazard.

The proximity and capacity of the fire suppression system should take into consideration the time to arrive to support the operation. As the fire danger rating increases, the available time to deploy a fire suppression system to support the suppression operation decreases. Larger more mobile systems may be located in a central area and serve several high risk activities, while smaller, less mobile fire suppression systems may be located in a strategic position or on the machine itself, for use by the operator.

Along with the fire hazard and values at risk, some other considerations for a fire suppression system may include:

- the ability to be activated quickly;
- the number of high risk activity sites to be serviced;

- the presence or absence of potential fire suppressant materials such as soil

While a fire suppression system could include, for example, a system capable of delivering a chemical retardant or even a backhoe capable of covering a fire with soil (a suppressant) for limited initial attack, for adequate suppression and control as the fire hazard increases, the fire suppression system at the site of the industrial activity should be supported up by a water delivery system that can be quickly deployed to the site to provide a full suppression response if required.

If water is in limited supply, a suppressant or surfactant may be added to the water in a water delivery system to improve its effectiveness. Use of a suppressant or surfactant reduces the rate or volume of water delivery expected from a water delivery system.

A component of a fire suppression system for initial attack may also include an automatic fire suppression system installed in a machine powered by a large engine and designed to extinguish an engine fire if that is the predominant risk of a fire start for that industrial activity. Some mobile logging equipment may have built-in systems for carrying and delivering water; as response is effectively immediate, such systems may be more effective than relying on a larger water delivery system that would be some minutes away and for that situation may be adequate, depending on the fire hazard at the time. As the fire hazard increases, however, it would be expected that an independent water delivery system be available for a full suppression response.

When assessing whether a fire suppression system is adequate, the assessment should focus on whether the system was reasonable for the expected fire hazard of the site. For example, if a gravity-feed water delivery system or a helicopter bucket will provide enough water to effectively extinguish an operations-related fire of the kind that might be reasonably anticipated at the site of the industrial activity, then the system could be considered adequate. In some situations, a backpack water tank may be adequate for the fire hazard. A pump system historically prescribed under the FPC wildfire provisions is considered adequate for low risk situations, although a person carrying out a high risk or any industrial activity should tailor their fire suppression system to suit the expected fire environment for the site.

A reasonable risk of a fire starting and spreading should be assessed based on available information, for example, by using the Canadian Forest Fire Danger Rating System (CFFDRS), probability of ignition models or established local fire history for that industrial activity under the site and environmental conditions present (weather, fuels, topography). For convenience, some Licensees may choose to maintain a prolonged readiness level for a higher fire danger class, rather than consciously escalating or diminishing readiness as circumstances and conditions change.

Fuel breaks

Under section 1(1) of the regulation:

“fuel break” means

- a barrier or a change in fuel type or condition, or*
- a strip of land that has been modified or cleared to prevent fire spread;*

It is important to note that a fuel break does not necessarily mean a bladed guard. Anything – natural, engineered or constructed – that alters, modifies or removes the fuel to limit the chance of a fire spreading ought to be sufficient. For example, snow, water, natural bare rock or high fuel moisture could be an adequate fuel break. A temporary fuel break may be created using a sprinkler system to increase the moisture content of the fuel above its ignition point. The complete removal of all fuel to mineral soil would constitute a fuel break, but its adequacy would be measured in context of the width and the fire environment anticipated. When conducting pile burns, the area around the piles would likely be considered a fuel break if the ignition characteristics of the materials surrounding the pile are significantly lower than the materials in the pile, will not support significant fire spread from the pile and will remain that way for the duration of the burn. The fuel break should ensure that fire spread from the pile remains within the fuel break and does not cause damages or require a suppression response. A fuel break should be within a reasonable distance from the intended pile burn, should be maintained for the duration of the burning, be of adequate scope to address the reasonable risk of the burn (e.g.: adjacent fuel, slope, winds) to escape, and should be properly monitored and maintained. Where the intent is to broadcast all or most of the unburned slash in a cutblock, a resource management open burn should be planned.

In a results-based regime, the sufficiency of a fuel break would be assessed as part of an incident, inspection, or investigation where a fire spreads beyond the fuel break. There may be conditions under which a fuel break may not completely prevent a fire from spreading. If a fire does spread, an investigation may be implemented, but, fire spread may not automatically infer non-compliance with the fuel break requirements. A fuel break will be considered insufficient where it is found that a fire would easily spread beyond the intended burn area under reasonably expected fire conditions and current and predicted weather conditions.

Work Restriction

“High risk activities” include the obligation under Schedule 3 of the Wildfire Regulation to alter activities during periods of moderate, high, and extreme Fire Danger Class.

The meaning of the term “after 3 consecutive days” in Schedule 3 means after the calendar days in which fire weather indices were calculated. In other words, it is sufficient to implement these provisions on the 4th day. For example, on the 3rd day of DGR III calculated at 1:00pm PDT a fire watcher is not required at the end of a normal daytime shift on the 3rd day, but is required after work on the 4th day. “After the fire danger class falls” on the other hand means as soon as the weather data (e.g. sufficient rain is recorded ahead of the 1:00 pm measurement) permits recalculation of the DGR to below the threshold.

Fire watcher

Schedule 3 and subsection 6(4) of the Wildfire Regulation set out the requirements for fire watchers on high risk industrial activities. Note that the fire watcher should not be engaged in other activities that compromise their ability to “actively watch and patrol” or “reasonably see the site of the high risk”. If required, a fire watcher should also be able to carry out fire control activities either with a hand tool or other suppression equipment if practicable.

Site of the industrial activity

The Wildfire Regulation uses terms such as “a site in that area” (section 5); “activity site” (section 6(3)(b)); “site of ... activity” (sections 1, 6(4), 11(1)(b)(ii), 12(2), 13(1)); “location of the activity” (section 6(2)); “site of ... operation” (section 11(1)(b)(ii)). For convenience the term “site of the industrial activity” is used in this document to refer to the use of all of these terms in the regulation.

The site of the industrial activity is the location where the activity is taking place. It includes both stationary activities (i.e. milling, portable chipping and manufacturing) and mobile activities (i.e. mobile logging equipment).

For stationary activities, the site of the industrial activity would be the area in the immediate proximity of the industrial activity.

For mobile sites, the site of the industrial activity would be assessed in terms of the specific location where the industrial activity is taking place, or where the industrial activity has recently taken place on a given day. It is not intended to be the potential area where the industrial activity could take place.

In some circumstances it may not always be clear what the bounds of the site of the industrial activity actually are for interpretation of the regulation. For example, cutblocks are often broken up into multiple portions for biodiversity, riparian protection, appraisal, fuel management, or other reasons and may contain significant internal fuel breaks such as roads, large streams, and leave strips. A helicopter logging operation may involve dozens of widely separated openings or even single stem extractions.

It is important to keep in mind that the rules for industrial activities are intended to ensure that the person conducting the activity is able to provide an effective fire suppression system that extinguishes or contains the fire and limits fire spread and damage until additional resources arrive. It is not intended that the person be responsible for other fire starts in the vicinity not directly related to their own industrial activity (e.g. lightning, public, unrelated industrial activities). In this context, the site of the industrial activity should be thought of as the area in the immediately vicinity of the potential ignition sources (machinery, running cables, workers) associated with the activity.

The intent is that a person can extinguish a fire start quickly, or contain it until additional resources arrive. The minimum resources must be sufficient to carry out this fire suppression response, but does not need to be so robust as to ensure, for example, water delivery to the farthest corner of a large cutblock, unless that is where industrial activities are actually being conducted that day.

For a cable yarding operation, the site of the industrial activity should be thought of a relatively confined bubble zone or buffer area around the potential ignition sources into which fire spread could be anticipated so that fire suppression efforts can deliver a sufficient volume of water and/or suppressant to extinguish or control the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official. Whatever the activity, the site should be thought of in the context of the potential ignition point(s) and the initial attack of a fire growing from that ignition point with consideration of the conditions (slope, fuel, anticipated fire weather) at and adjacent to that ignition point.

Based upon the fire hazard, a professional may determine that a water delivery system can be shared between activity sites in close proximity to one another. Larger more mobile systems may be located in a

central area and serve several high risk activities, while smaller less mobile systems may be located in strategic positions or on the machine itself for use by the operator. Nevertheless, when covering two (or more) activities with a single system, a key consideration remains that as the fire danger rating increases, the available time to deploy a fire suppression system to any of the activity sites must meet the objective of extinguishing a fire if practicable, or, controlling the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official.

Representative Weather Data

Subsection 6(2) of the Wildfire Regulation requires the person conducting a high risk activity to determine the Fire Danger Class for the site of the industrial activity during the “fire season” period from March 1 to October 31, except for the days when the ground is covered by snow. The determination of Fire Danger Class relies on calculation of fire weather indices based on representative weather data, with reference to tables appended as Schedules 1 and 2 to the Wildfire Regulation that indicate the Fire Danger Class.

Outside of the fire season period, representative weather data is not generally available from field weather stations, so calculation of Fire Danger Class and related indices for the purposes confirming the assumption of no “risk of a fire starting or spreading” under subsection 1(5) is neither practicable nor expected unless WMB provides general notification that it is a year with unusual weather patterns. Thus neither are the provisions in section 6 for hand tools, fire suppression systems, fire watchers, or work restrictions necessary outside of the fire season.

During the fire season, persons conducting a high risk activity are required to use “representative” weather data for the area to determine the Fire Danger Class for their site of the industrial activity. The onus is on the person carrying out the activity to determine what the representative weather station is for the area. The source of this data could be from the person’s own weather station(s), government weather stations, or from third party weather stations.

A person may need to adjust or adapt the available Fire Danger Class (DGR) estimates from an established weather station for the conditions specific to the site of the activity. If conditions at the site of the activity are similar to a reference weather station then no adjustment or adaptation should be needed. Major factors to consider when judging representativeness could include distance, BEC variant, and large elevation changes. Other potential considerations may include differences in prevailing wind direction and force (exposure), date of snow melt, aspect, or relative proximity to bodies of water (humidity).

Persons conducting high risk activities may wish to establish a portable weather station at or near the site of the industrial activity to determine the Fire Danger Class for the specific area. More information on the establishment of a portable weather station is available from a free publication entitled, “[*Weather Guide for the Canadian Forest Fire Danger Rating System*](#)”.

Due to concerns with ongoing maintenance, theft, vandalism, maintaining data integrity, and management and initial calibration of stations following frequently re-located activities, it may be impractical for persons conducting multiple high risk activities in the same locale or vicinity to maintain a portable weather station at the specific site of each and every activity. Nonetheless, if intending to conduct high risk activities during prolonged periods of higher Fire Danger Class, it is a requirement to have accurate

weather information and to ensure FWI and DGR calculations are representative of the site of the industrial activity. This could include using hand held weather monitoring equipment to verify local FWI and DGR levels.

Where weather stations or instruments are temporarily located at a site of the industrial activity, DGR adjustments would be made by a professional, or a person under the guidance of a professional, in response to changing conditions at the site. When in an adjustment situation, the main condition to be aware of is the possibility that the DGR of the site of the industrial activity needs to be bumped up a Class relative to the reference weather station(s) due to more severe conditions (e.g. temperature, wind or RH) at the site of the industrial activity. An understanding of the effects of weather input data on fire weather indices and DGR is essential.

Periodic weather observations from the site of the industrial activity may be used to correlate with observations at the representative weather station to confirm its representativeness for the site of the industrial activity, or make DGR adjustments. If a professional, or a person under the guidance of a professional, conducting an industrial activity has access to FWI and DGR calculations for their operating area and can demonstrate awareness of the relative appropriateness of the DGR estimate to their site of the industrial activity(s) then the “representativeness” test should be met.

[Fire Danger Class](#) for government forestry weather stations is found under the heading ‘Danger Class Report’. Accurate locations and elevations of the stations are to be found under ‘Weather Stations’. Note that the government’s forestry weather network was designed to support fire preparedness for the government’s fire operations. This weather network was not designed or intended to accurately describe all potential, site-specific fire environments across the province.

More detailed information on fire weather codes and indices of the Canadian Forest Fire Danger Rating System, along with other weather information and fire weather forecast details are available through subscription. Important reference material is contained in the publication entitled “Weather Guide for the Canadian Forest Fire Danger Rating System (Armitage, 2008).

Log forwarding

“Log forwarding” is included as a high risk activity (section 1(1)), and should be interpreted as the use of a self-propelled machine designed to transport or move logs or trees across the ground of a cutblock to roadside. Often this is a self-loading, off-road transporter but may also include a backhoe swinging logs towards a road by “hoe forwarding” or “shovel logging”.

The description of log forwarding contained within the definition of “high risk activity” in the Wildfire Regulation specifically excludes a logging truck being loaded or hauling on a road. Therefore, a self-loading logging truck on a road or landing would not be considered log forwarding. If however the self-loading logging truck drives off the road out into the cutblock, it could be considered log forwarding.

Forwarding (or skidding) operations that are conducted using puncheon or on thick forest floors, where sparks caused by metal parts of the equipment contacting rocks in or on the ground of the running surface are unlikely to occur, are not considered high risk.

Log loading

A log loader operating at roadside is not considered a high risk activity. A loader operating at roadside includes loaders that may be positioned over the roadside ditch, on debris, slash, or operating on undisturbed forest floor material adjacent to the road. Movements of the loader, such as from log deck to log deck, or repositioning between loading trucks, would not be considered a high risk activity.

Where a person decides to operate a tracked machine loading logs off the road in slash, there is an overarching obligation for the person to be duly diligent regarding section 6 of the *Wildfire Act*, which specifies that a person must do so “at a time and in a manner that can reasonably be expected to prevent fires from starting”.

Resources Available

For the purposes of section 13(1)(a) of the Wildfire Regulation, it is important to note that a person conducting the industrial activity is required to make available the person’s workers who are working within 30km by road and the person’s fire fighting tools and heavy equipment if those resources are within 30km by road of the site of the industrial activity. The definition of “worker” in Section 1(1) specifically excludes from this requirement those working at a non-portable timber processing facility (e.g. sawmill), in a clerical or administrative capacity, or on a tug or barge. Note that it is not expected that all available resources be dispatched immediately on a report of a wildfire, but that such resources will be deployed ‘as appropriate given the circumstances and conditions...’ (section 13(2)) until the fire is extinguished, or it becomes impracticable to continue with fire control, or an official relieves the person in writing (*Wildfire Act*, section 6(3)(b)).

The intention of this provision is not to impact stationary processing facilities (mining operations or otherwise). Barge camps, the barge and its employees are not resources that the person must make available for fire control activity. If these facilities, other employees or equipment are required, section 16 of the *Wildfire Act* allows for an official to issue a requisition order that requires a person to supply facilities and equipment that the person owns or has use of and the person’s direct employees for fire control.

Fire Hazard Assessment and Abatement

Fire hazard assessments and fire hazard abatement are key activities in preventing potential wildfire threats arising from fuels left on the land base from harvesting operations. It is essential to carry out assessment and abatement to reduce the risk of wildfires, not only to reduce the impact in the harvested area, but also the impact on adjacent or nearby interface areas, infrastructures, and other values at risk.

The *Wildfire Act* requires persons conducting an industrial activity or a prescribed activity ([s. 7](#)) on forest or grass land or within one kilometre of forest land or grass land to conduct fire hazard assessments and abate if required.

The *Wildfire Regulation* sets out the prescribed activity or industrial activity and states that if a hazard is made, it must be abated ([s. 11](#) and [s. 12](#)).

June, 2011

Wildfire Regulation amendments now allow for professional reliance options for hazard assessments and abatement for a specific category or persons: “qualified holders”. A qualified holder is a person who has a valid cost sharing or service agreement in place with Wildfire Branch or is the holder of a specified licence under the [Forest Act](#) and is required to pay annual rent under the [Annual Rent Regulation](#).

The existing [section 12](#) hazard abatement requirements will continue to apply for all persons who do not meet qualified holder requirements. Those persons will be required to abate to the extent prescribed in the Regulation.

To assist persons who have fire hazard assessment and abatement obligations, Wildfire Management Branch is preparing *A Guide to Fire Hazard Assessment and Abatement* that will specify how to assess hazards and when to conduct abatement. This guide can assist forest professionals in assessing fire hazards associated with industrial or prescribed activities, and in creating hazard assessment and abatement strategies for a forest licensee or other stakeholder that has an obligation to assess and abate. Note that the due diligence defence of a person that carries out the industrial or prescribed activity may hinge on having followed the professional’s advice, direction and recommendations.

A forest professional working for a qualified holder may choose to use the guide to derive abatement recommendations, or may provide alternate recommendations based on professional consideration of the relevant factors and local application of them to the site of an industrial or prescribed activity. Professional recommendations would include due diligence such as a rationale supporting either an alternate recommendation or an alternate hazard assessment procedure and abatement approach.

Hazard Assessment Period

[Section 11\(3.1\)](#) of the Wildfire Regulation allows a “qualified holder” who carries out an industrial activity or prescribed activity to rely upon a forest professional to specify alternative interval periods for hazard assessments. A professional would consider the type of activity being carried out, the fire hazard and associated risks, the intervals in which the assessments must be completed and the time frames within which to abate once a fire hazard has been identified.

For persons that are not qualified holders assessment time periods specified by [Section 11](#) apply.

Hazard Abatement Period

[Section 12.1](#) of the Wildfire Regulation specifies an abatement period beginning from the date of commencement harvest of 24 months (for interface) and 30 months (for non interface) for a “qualified holder” or as specified by a forest professional for non interface areas. Professional reliance is also used to determine the extent in which to abate.

For persons that are not qualified holders Section 12 abatement time periods and extents apply.

Wildland urban interface areas are required to be assessed and abated in shorter time periods than that of non-interface areas because of the higher values at risk.

References:

- Armitage, B. L. (2008). Retrieved April 8, 2011, from the Canadian Forest Service, Northern Forestry Centre: <http://cfs.nrcan.gc.ca/pubwarehouse/pdfs/29152.pdf><http://cfs.nrcan.gc.ca/pubwarehouse/pdfs/29152.pdf>
- Forest Practices Board report, February 2011, [Fire Preparedness Special Investigation – Summary of Good Practices](#) .

APPENDIX A: DEFINED WILDFIRE PREVENTION AND RESPONSE SYSTEM

Part 1: Purpose

This document provides guidance on a wildfire prevention and fire response system that would apply in most given situations, to meet the requirements of the *Wildfire Act* and the [Wildfire Regulation](#). This guidance is based upon many of the requirements specified in the now repealed Forest Fire Prevention and Suppression Regulation (FFPSR) of the *Forest Practices Code of British Columbia Act* and the current Wildfire Regulation.

Some industrial operators may not have the capacity or resources to professionally design a prevention and suppression response system. The objective of this guidance document is to assist a person conducting industrial activities by providing a description of a default prevention and suppression response that could be used to meet the requirements of a fire preparedness and fire response system for levels of fire hazard typically encountered when conducting an industrial activity during the fire season.

Note that all persons using this guidance document are not relieved of the responsibility and obligations set out in the [Wildfire Act](#) and [Regulation](#) and any other relevant statutes that apply. This wildfire prevention and suppression response guidance should be used in consideration of the fire hazard and a person should consider all of the material factors to be considered when there is a high risk of a fire starting or spreading. For typical operations, these factors include:

- the foreseeable size of the fire, given the fuels, fire danger rating, weather, etc.,
- the quantity of water required to extinguish a fire at a site of the industrial activity ;
- the delivery method, effectiveness and deployment time of fire suppression and water delivery systems;
- access considerations to the site of the fire;
- conditions in the area where the water may be used;
- an adequate quantity of water at the site of the industrial activity.

The expected outcome of the Wildfire Act and Regulation is that fire starts are prevented, but if a person causes a fire, they are required to extinguish it if practicable, or control the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official. The person must have enough resources available to ensure that the response to a fire is adequate, timely and commensurate with anticipated fire hazards. If conducting a high risk industrial activity a person needs to monitor Fire Danger Class, maintain a fire watch and an adequate fire suppression system, and to follow work restrictions as required by regulation.

Note: Important definitions are included in Part 6 below and they should be reviewed and thoroughly understood.

Part 2: General Requirements

Prior to each fire season there is a requirement to provide contact details to the local Fire Centre.

Before March 1 of each year, a person who, under the *Forest Act*, is the holder of

- (a) a major licence,
- (b) a timber sale licence that is not a major licence,
- (c) a community forest agreement, or
- (d) a woodlot licence
- (e) First Nations Woodland License

must provide an official with a 24 hour a day contact telephone number if the person proposes to carry out an industrial activity on or after March 1 and before November 1 of that year.

Fire Centre Contact Information:

Fire Centre	Telephone Number
Cariboo Fire Centre, Williams Lake	250-989-2600
Coastal Fire Centre, Parksville	250-951-4222
Kamloops Fire Centre, Kamloops	250-554-5500
Northwest Fire Centre, Smithers	250-847-6600
Prince George Fire Centre, Prince George	250-565-6124
Southeast Fire Centre, Castlegar	250-365-4040

Part 3: Industrial Activities

“**industrial activity**” is listed in [section 1\(3\)](#) of the Wildfire Regulation and includes:

- (a) land clearing,
- (b) high risk activities;
- (c) operating equipment or machinery in relation to forest management during
 - (i) road construction, road maintenance and road deactivation,
 - (ii) timber harvesting, including sorting logs,
 - (iii) mechanical modification of forest debris and debris piling,
 - (iv) silviculture treatments, or
 - (v) portable wood chipping, milling, processing or manufacturing;
- (d) operating equipment or machinery in relation to activities other than forest management during
 - (i) debris piling,
 - (ii) road construction, road maintenance or road deactivation,
 - (iii) rock drilling,
 - (iv) mining operations,
 - (v) railway operations,
 - (vi) utility transmission operations, or
 - (vii) portable wood chipping, milling, processing or manufacturing.

1. Fire fighting tools must be available on site

When conducting an industrial operation, sufficient fire fighting hand tools must be available on site during the fire season on or after March 1 and before November 1, if the area is snow free.

If there is a risk of a fire starting or spreading on an area that is

- (a) forest land or grass land, or
- (b) within 300 m of forest land or grass land,

A person who carries out an industrial activity at a site in that area must ensure that fire fighting hand tools are available at that site in a combination and type to properly equip each person who works at the site with a minimum of one fire fighting hand tool per person:

- one round-nosed shovel;
- one pulaski tool or mattock; or
- one hand-tank pump containing at least 18 litres of water.

2. Operation of engines must be done safely

All engines should be operated and maintained in accordance with the manufacturer's specifications in a manner that prevents fires from starting.

Operation of large engine (greater than 7.5 kw or 10 hp)

The person carrying out an industrial activity should provide and ensure that every large engine used in an industrial activity has attached to it, at least the following fire fighting tools:

- one round-nosed shovel; and
- one pulaski tool or mattock; and
- one fire extinguisher with a ULC rating of at least 3A 10BC or an integral vehicle fire suppression system for any engine fires; and
- one fire extinguisher with a ULC rating of at least 1A 5BC for any fire suppression required near the large engine at the activity site,

A person should not operate a large engine unless all of the following conditions are met:

- It is equipped with a safe and effective device for arresting sparks that is an integral part of the exhaust system, and is in good repair.
- A person should not operate a large engine that operates in a stationary capacity unless the site has a fuel break or it has been cleared of combustible material for a distance of at least 3 m in each direction from the large engine.

Small Engines (less than or equal to 7.5 kw or 10 hp):

A person should not operate a small engine unless all of the following conditions are met:

- The muffler has an adequate spark arrester; and,
- The engine or the hot carbon emission being produced by the engine are prevented from coming in contact with combustible material, and there is available at the times when the engine is operated, a fire extinguisher charged with at least 0.225kg (0.5lb.) of fire extinguishing chemical.

Part 4: High Risk Activities

“high risk activity” as defined in [section 1](#) of the Wildfire Regulation includes:

- (a) mechanical brushing;
- (b) disk trenching;
- (c) preparation or use of explosives;
- (d) using fire- or spark-producing tools, including cutting tools;
- (e) using or preparing fireworks or pyrotechnics;
- (f) grinding, including rail grinding;
- (g) mechanical land clearing;
- (h) clearing and maintaining rights of way, including grass mowing;
- (i) any of the following activities carried out in a cutblock excluding a road, landing, roadside work area or log sort area in the cutblock:
 - (i) operating a power saw;
 - (ii) mechanical tree felling, woody debris piling or tree processing, including de-limbing;
 - (iii) welding;
 - (iv) portable wood chipping, milling, processing or manufacturing;
 - (v) skidding logs or log forwarding unless it is improbable that the skidding or forwarding will result in the equipment contacting rock;
 - (vi) yarding logs using cable systems;”

Requirements for High Risk Activities:

1. Determine Danger Class

A person who carries out a high risk activity on or within 300 m of forest land or grass land on or after March 1 and before November 1, unless the area is snow covered, must determine the Fire Danger Class.

(See Below - **Part 5: Determination of Restriction on High Risk Activities**).

2. Follow Danger Class Restrictions and Durations

(See Below - **Part 5: Determination of Restriction on High Risk Activities**).

3. Keep Fire Fighting Tools and An Adequate Fire Suppression System At The Activity Site

If there is a risk of a fire starting or spreading then fire fighting tools and an adequate fire suppression system must be kept at the activity site. During the fire season on or after March 1 and before November 1, this may occur anytime that an area is snow free.

A “fire suppression system” means a system for suppressing fire by delivering

- (a) water,
- (b) a suppressant,
- (c) a surfactant, or
- (d) any combination of the substances listed in paragraphs (a) to (c), and may include a water delivery system [[section 1](#), Wildfire Regulation]

Water Delivery System – ground based: a "water delivery system" is defined in [section 1](#) of the Wildfire Regulation and means a system that can:

- (a) deliver a sufficient volume of water to effectively fight a fire, taking all factors into consideration, including the conditions of any area where the water delivery system may need to be used, and,
- (b) deliver water to any place
 - (i) at the site of the industrial activity,
 - (ii) on the burn area or site of the industrial activity, or
 - (iii) adjacent to the burn area or the site of an industrial activity

The water delivery system should be able to deliver water at a sufficient volume and pressure to effectively fight a fire of a reasonably foreseeable size, taking all factors into consideration, including conditions of any activity site where the fire suppression system may need to be used.

For the purposes of this guidance document, a water delivery system consists of a water supply, a water pump or equivalent means of pressurizing water plus the ancillary hoses, attachments and tools necessary for the operation and maintenance of the system if these can deliver, to any place on a worksite:

- water at an effective nozzle pressure of a minimum of 25 psi through a standard 9.50 mm straight bore nozzle opening for 50 minutes, or
- 2,500 litres of liquid, of which 0.5 per cent is a liquid surfactant concentrate that, when added to water and used with a pump, hose and nozzle, is capable of producing foam that will extinguish a fire in ordinary combustibles such as wood, paper or forest products.

A person carrying out an industrial activity that is a saw mill or dryland log sort should provide at least one water delivery system at the saw mill or log sort site.

If it is unreasonable to provide the water delivery system because of the terrain, or lack of available surface water on site, a portable pump unit and a water source of at least 4,500 litres or equivalent (aka use of a liquid surfactant noted above) may be substituted. Note that this could include the cumulative capacity of several smaller water sources, relay and/or other tanks, as alternative options.

"Pump Unit" means water pump including a gravity system that is capable of maintaining a minimum effective nozzle pressure of 25 psi from a standard 9.5 mm nozzle at any place on the site of the industrial activity.

Hand falling/Motor manual (i.e. brush saws) brushing: For hand falling and brush saw operation, each faller or operator should have, at a minimum, a personal fire extinguisher.

Cable logging

Cable logging is also included under the definition contained in [section 1](#) of the Wildfire regulation of a "high risk activity"

A person carrying out an industrial activity that is a cable logging system should

- (a) layout all running lines in straight lines,
- (b) remove branches, brush and shrubs to a width of at least 75 cm on each side of the running line for a minimum distance of 4 m in either direction from each corner block, and
- (c) and provide a hand-tank pump containing at least 18 litres of water and keep it immediately adjacent to each corner block that is in use.

Fire fighting tools - helicopters

If one or more helicopters are normally used in a timber harvesting operation to move personnel and equipment to and from the site of the industrial activity, the person carrying out the timber harvesting operation should keep at a landing spot near the site of the industrial activity, for the exclusive use of each helicopter, a water bucket that is

- of a type designed and adapted for aerial firefighting,
- capable of being attached to a helicopter,
- capable of being both filled and emptied from a helicopter while the helicopter is airborne
- of a capacity near the normal operating load for the type of helicopter used

4. Maintain Fire Watcher and Communication Requirements

Fire watcher

A person who, in accordance with [section 6\(4\)](#), [section 6\(3\)\(a\)](#) and [Schedule 3](#) of the Wildfire Regulation, is required to maintain a fire watcher, must ensure that the fire watcher:

- (a) can reasonably see the site of the high risk activity during the time the fire watcher is required,
- (b) has at least one fire fighting hand tool,
- (c) actively watches and patrols for sparks and fires on the site of the high risk activity,
- (d) immediately carries out fire control and extinguishes the fire, if practicable, and
- (e) has the means on site to report the fire.

(2) If the fire watcher reports a fire to a person carrying out an industrial activity, the person should immediately report the forest fire to a Fire Centre Manager or delegate, district manager, a designated forest official, peace officer or person answering a forest fire reporting number in accordance with the Wildfire Act and regulation.

Communications Equipment

A person who carries out an industrial activity, or who is a fire watcher, should have either an operational two-way radio or telephone so that if a fire starts, assistance may be immediately requested.

5. Other Types of High Risk Industrial Activities

Hot work - welding, cutting or using any other tool that may cause a fire or spark: Hot work activities are included under the definition contained in [section 1](#) of the Wildfire regulation of “high risk activity” in the Wildfire regulation.

- Where there is a reasonable risk of a fire starting and spreading, a person should not perform hot work unless a fire watcher is present.
- Minimum fire watcher requirements following completion of the hot work are outlined in [Schedule 3](#) of the Wildfire regulation

Fire fighting tools - hot work and use of explosives

A person should provide the following fire fighting tools at each activity site where hot work is performed, or if explosives are used at the place from which the blast will be controlled:

- 2 fire extinguishers each with a ULC rating of at least 3A 10BC;
- one round-nosed shovel;
- 2 hand-tank pumps containing at least 18 litres of water each.

Hot work is a “high risk activity” under [section 1\(1\)](#) of the Wildfire Regulation and where there is a risk of a fire starting and spreading, a person should not perform hot work unless a fire watcher is present. Minimum fire watcher requirements are outlined in Column 2 of [Schedule 3](#) of the Wildfire regulation.

Part 5: Determination of Restrictions on High Risk Activities

1. Acquire Local Weather Data

Acquiring local weather data to comply with the Wildfire Regulation is the responsibility of the person conducting the high risk activity and is considered a cost of doing business. With the exception of the Danger Class, WMB does not provide unrestricted access to the weather data from government fire weather stations.

Weather data must be acquired from a representative weather station, whether established by the operator or another party.

The WMB weather network was not designed explicitly to support industrial operations. If in doubt, a person should consult a forest professional or other qualified person in order to determine whether or not a particular station is applicable to the work site, or whether adjustments should be made when considering a number of potential differences and the significance of each, including:

- distance from the weather station;
- elevation;
- date of snowmelt;
- aspect, etc.

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For due diligence, persons conducting high risk industrial operations may wish to document how a particular station is and continues to be representative.

2. Weather Resources available:

A free publication entitled, “[*Weather Guide for the Canadian Forest Fire Danger Rating System 2008*](#)”. [Lawson, B.D.; Armitage, O.B. Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre, Edmonton, Alberta. 84p.] provides guidance on setting up a weather station.

Weather station information is available on the WMB website that provides the latitude and longitude of each weather station and also includes a map of the province showing the location of each weather station. Go to Weather Station page.

Finally, if a person does not possess weather monitoring equipment, then:

- This equipment may be purchased; or
- Weather data information can be provided by WMB by subscription. Weather data and calculated Fire Weather Index values are available from this service. A BCeID will be required, <https://www.bceid.ca/>. Please contact the nearest Fire Centre for more information

3. Determining the Restrictions on high risk activities

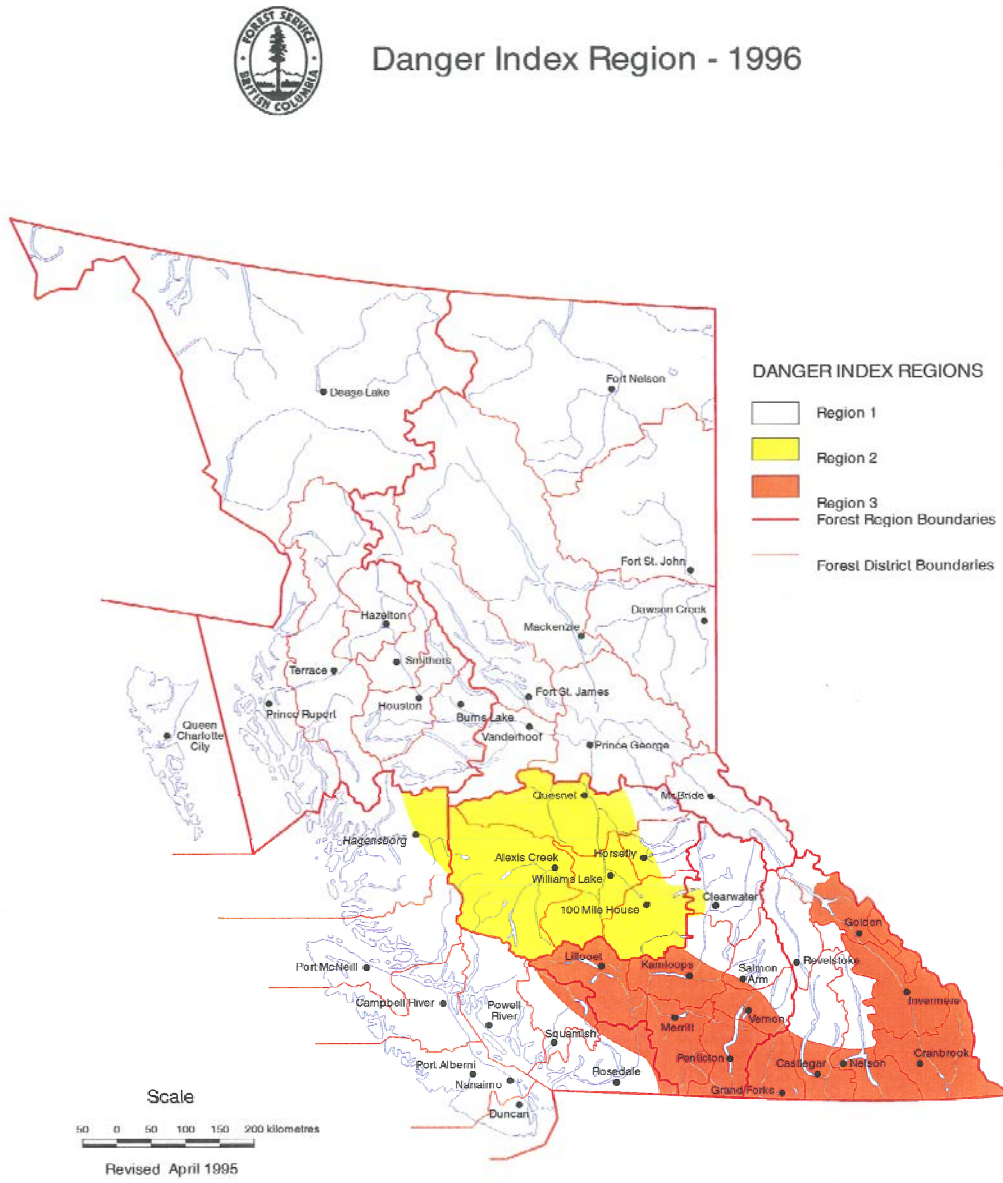
Follow the steps on pages 24-28 below to determine the restrictions on high risk activities for your site:

- A. Determine Fire Danger Region;
- B. Determine Danger Class;
- C. Follow the Applicable Restrictions on High Risk Activities

A. Determine Fire Danger Region

1. First determining the Danger Region from Schedule 1 noted below:

Schedule 1 - Danger Regions



B. Determine the Danger Class:

Identify the buildup index and fire weather index and cross reference these for the applicable Danger Region under schedule 2 to determine the Fire Danger Class.

**Schedule 2
Fire Danger Class**

Danger Region 1

Buildup Index	Fire Weather Index				
	0	1 - 7	8 - 16	17 - 30	31 +
0 — 19	I	II	II	III	III
20 — 42	II	II	III	III	IV
43 — 69	II	III	III	IV	IV
70 — 118	II	III	IV	IV	V
119 +	III	III	IV	V	V

Danger Region 2

Buildup Index	Fire Weather Index				
	0 - 4	5 - 16	17 - 26	27 - 37	38 +
0 — 48	I	II	II	III	III
49 — 85	II	II	III	III	IV
86 — 118	II	III	III	IV	IV
119 — 158	II	III	IV	IV	V
159 +	III	III	IV	V	V

Danger Region 3

Buildup Index	Fire Weather Index				
	0 - 4	5 - 16	17 - 27	28 - 46	47 +
0 — 50	I	II	II	III	III
51 — 90	II	II	III	III	IV
91 — 140	II	III	III	IV	V
141 — 200	II	III	IV	IV	V
210 +	III	III	IV	IV	V

C. Follow the Applicable Restrictions on High Risk Activities

Schedule 3: Restrictions on High Risk Activities

Column 1 Fire Danger Class (DGR)	Column 2 Restriction	Column 3 Duration
III (moderate)	After 3 consecutive days of DGR III or greater, maintain a fire watcher after work for a minimum of one hour	Until after the fire danger class falls below DGR III
IV (high)	Maintain a fire watcher after work for a minimum of 2 hours	Until after the fire danger class falls below DGR III
	After 3 consecutive days of DGR IV, cease activity between 1 p.m. PDT (Pacific Daylight Saving Time) and sunset each day	Until after the fire danger class falls to DGR III for 2 consecutive days, or falls below DGR III
V (extreme)	Cease activity between 1 p.m. PDT (Pacific Daylight Saving Time) and sunset each day and maintain a fire watcher after work for a minimum of 2 hours	Until after the fire danger class falls below DGR IV for 2 or more consecutive days
	After 3 consecutive days of DGR V, cease activity all day	Until after the danger class falls below DGR V for 3 or more consecutive days, or falls below DGR IV

Part 6: Definitions

“Risk of a Fire Starting or Spreading” Fire risk can occur anytime that the area is snow free, however, more precise fire risk calculations can be defined as the fine fuel moisture code exceeding 75, the duff moisture code exceeding 6 or the drought code exceeding 15. As calculation of Fire Danger Class and determination of fire weather indices are not undertaken over the winter months, fire risk is only considered during the fire season March 1 to October 31.

“activity site” The site of the industrial activity is the location where the activity is taking place. It includes both stationary activities (i.e. milling, portable chipping and manufacturing) and mobile activities (i.e. mobile logging equipment).

For stationary activities, the site of the industrial activity would be the area in the immediate proximity of the site of the industrial activity.

For mobile sites, the site of the industrial activity would be assessed in terms of the specific location where the industrial activity is taking place, or where the industrial activity has recently taken place on a given day. It is not intended to be the potential area where the industrial activity could take place.

"fire extinguisher" means a fully charged and operable fire extinguisher bearing the Underwriters' Laboratories of Canada label that rates the extinguisher as suitable for use on class A, B or C fires;

"fuel break" means

- (a) a barrier or a change in fuel type or condition, or
- (b) a strip of land that has been modified or cleared to prevent fire spread;

Note: the intention of the fuel break is so that it can act as a buffer to prevent the spread of fire beyond the fuel break.

"heavy equipment" means crawler tractors, skidders, excavators or other suitable mechanized firefighting equipment;

“hot work” means any work generating significant amounts of heat and includes the cutting, grinding, welding and heating of metals.

“large engine” means an engine having a power greater than 7.5 kw (10 hp) used in an industrial activity but does not include

- a) an engine on or in a watercraft that is in the water,
- (b) an engine in or on a vehicle which is primarily used for the transportation of people, or
- (c) an engine in an aircraft

“multiple activity site” means the location where several industrial activities are taking place. This could include stationary and / or mobile activities.

- For stationary industrial activities, the area is in the immediate proximity.

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- For mobile industrial activities, the area is the specific location where the industrial activity is taking place or where the industrial activity took place that day.
- For the purpose of this guidance, the number of persons working at the multiple activity site is considered to be the sum of the number of persons normally working at each activity.
- It is acceptable to have a centrally located water delivery system at a multiple activity site, provided that all of the conditions are met as defined in the water delivery system section below.

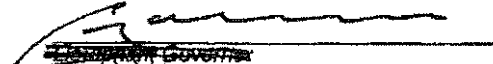
“small engine” means an internal combustion engine having a power of 7.5 kw (10 hp) or less but does not include

- (a) an engine on or in a watercraft that is in the water,
- (b) an engine in or on a vehicle which is primarily used for the transportation of people,
or
- (c) an engine in an aircraft

PROVINCE OF BRITISH COLUMBIA

ORDER OF THE LIEUTENANT GOVERNOR IN COUNCIL

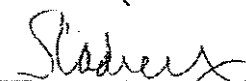
Order in Council No. 193, Approved and Ordered MAY 26 2011


~~Lieutenant Governor~~
Administrator

Executive Council Chambers, Victoria

On the recommendation of the undersigned, the ~~Lieutenant Governor~~ ^{Administrator}, by and with the advice and consent of the Executive Council, orders that the Wildfire Regulation, B.C. Reg. 38/2005, is amended as set out in the attached Schedule.


Minister of Forests, Lands and Natural
Resource Operations


Presiding Member of the Executive Council

(This part is for administrative purposes only and is not part of the Order.)

Authority under which Order is made:

Act and section: Wildfire Act, S.B.C. 2004, c. 31, s. 72 (2) (f) and (g)

Other: OIC 94/2005

May 11, 2011

R/238/2011/22

SCHEDULE

1 Section 1 (1) of the Wildfire Regulation, B.C. Reg. 38/2005, is amended

(a) in the definition of "fire suppression system" by striking out "and includes a water delivery system;" and substituting "and may include a water delivery system;," and

(b) by adding the following definition:

"qualified holder" means a person, other than the government,

(a) who is a party to a cost sharing agreement or service agreement, as defined in section 28 of this regulation, or

(b) who

(i) is the holder of an agreement or licence referred to in section 12 (1) (a), (c), (d), (e) and (g) and (2) (a) of the *Forest Act*, and

(ii) is not in arrears under the Annual Rent Regulation for the annual rent payable respecting the agreement or licence; .

2 Section 11 is amended

(a) in subsections (2) and (3) by striking out "The prescribed intervals," and substituting "Subject to subsection (3.1) of this section, the prescribed intervals;," and

(b) by adding the following subsection:

(3.1) The prescribed intervals, at which a person described in section 7 (1) of the Act who is a qualified holder must conduct fire hazard assessments, are the intervals

(a) set out in subsection (2) or (3) of this section, as applicable, or

(b) specified by a professional forester or a registered forest technologist.

3 Section 12 is amended

(a) in subsection (1) by striking out "the persons are aware;" and substituting "the persons are aware or ought reasonably to be aware;," and

(b) by adding the following subsection:

(3) This section does not apply to a person who is a qualified holder.

4 The following section is added to Division 2 of Part 2:

Hazard abatement: qualified holders

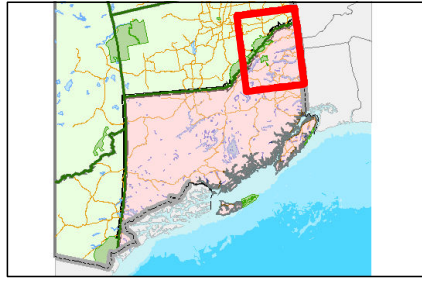
12.1 (1) In this section, "abatement area" means each area within which the industrial activity or prescribed activity takes place in each consecutive 12 month period that occurs after the date the activity begins.

(2) The following periods are prescribed as the periods in which a person described in section 7 (2) of the Act who is a qualified holder must abate fire hazards of which the person is aware or ought reasonably to be aware:

- (a) for each abatement area within an area described in section 11 (2) (a) of this regulation, a period of 24 months, beginning on the date the industrial activity or prescribed activity begins in the abatement area.
 - (b) for each abatement area within an area other than an area described in section 11 (2) (a) of this regulation,
 - (i) a period of 30 months, beginning on the date the industrial activity or prescribed activity begins in the abatement area, or
 - (ii) the period specified by a professional forester or registered forest technologist under the *Foresters Act*.
- (3) A person required to abate a fire hazard under section 7 (2) of the Act who is a qualified holder must reduce the fuel hazard on the site of the industrial activity or prescribed activity
- (a) as necessary to ensure that carrying out the activity
 - (i) does not increase the risk of a fire starting on the site, and
 - (ii) if a fire were to start, would not increase the fire behavior or fire suppression associated with the fire, or
 - (b) as specified by a professional forester or registered forest technologist under the *Foresters Act*.

South East Weather Stations

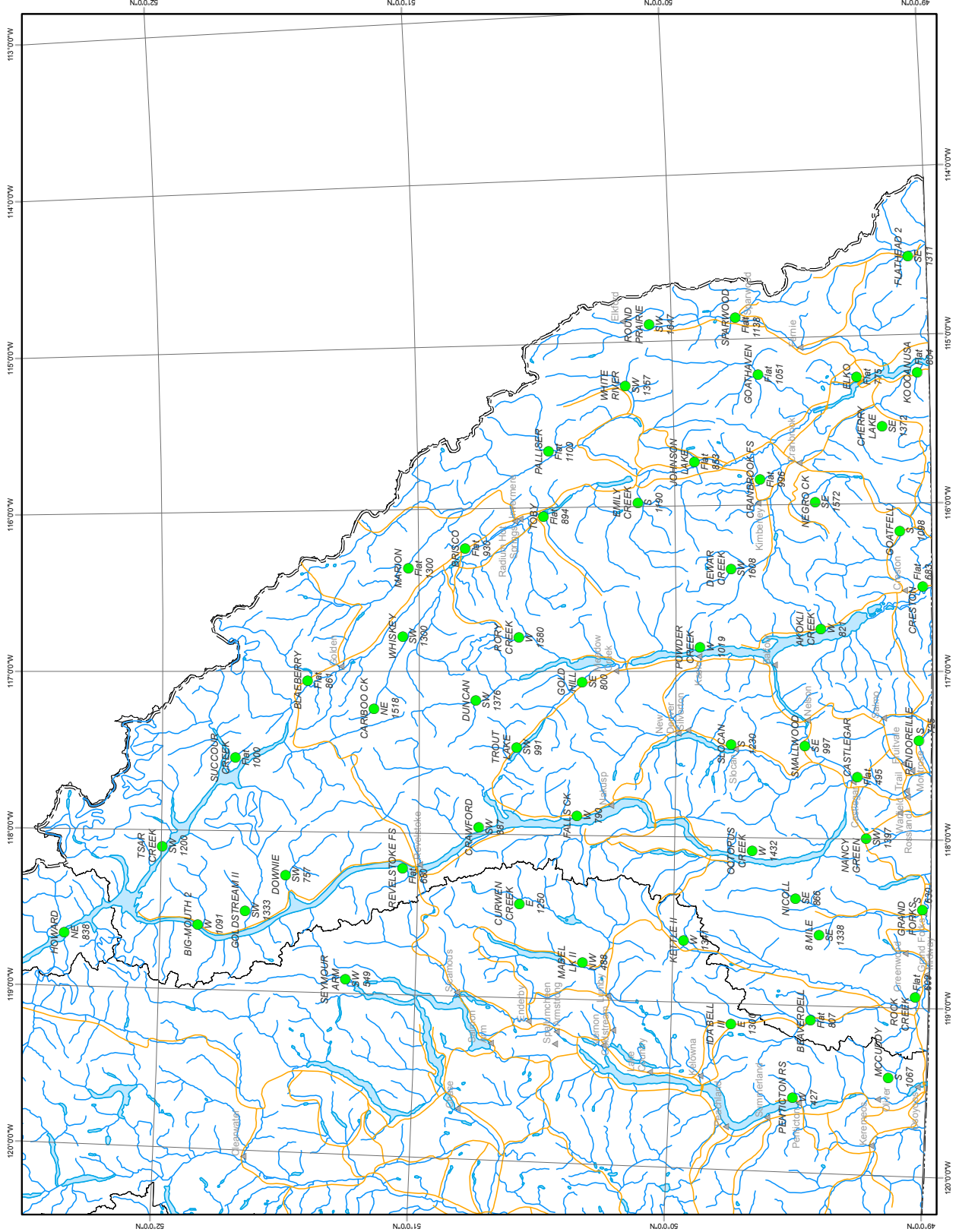
● Weather Stations
 Fire Centre Boundary
▲ Major City



0 40 80
 Kilometers
 1:1,500,000

Produced by:

 Ministry of Forests, Lands and
 Natural Resources Operations
 Kooleenay Lake Forestry Centre
 Projection/Datum: UTM 11N, NAD 83
 Created by: Barbara Hanlon
 Date: 1907/2012
Path: \\V:\FORREST\DC\GIS\Info\ESRI\MapServer\CHART\WeatherStns_SouthEast



Weather Stations <http://bcwildfire.ca/Weather/stations.htm>

The Ministry of Forests and Range, Wildfire Management Branch operates approximately 260 hourly weather stations, listed below. These hourly weather observations, supplemented by data from other agency stations, also listed, are used to support fire weather forecasting and the Canadian Forest Fire Danger Rating System (CFFDRS).

The computer-based CFFDRS is the primary fire management decision aid in Canada. With it, fire managers can assess the potential for ignition, spread and burning intensity. This information is used for making fire prevention, preparedness and suppression decisions, as well as other general fire management decisions.

Southeast Fire Centre Map	Latitude	Longitude	Elevation (m)	Start Year
Name				
AKOKLI CREEK	49 26 09	116 44 47	821	2003
BAKER 2 HUB (no rain gauge, wind only)	49 27 22	115 37 35	2262	1949
BEAVERDELL	49 27 25	119 05 18	807	1970
BIG-MOUTH 2	51 51 12	118 35 29	1091	2004
BLAEBERRY	51 26 8.5	117 3 25.	861	2004
BRISCO	50 49 9.5	116 14 41	930	2004
CARIBOO CK	51 10 36	117 13 49	1518	2001
CASTLEGAR	49 18 00	117 36 00	495	1970
CHERRY LAKE	49 11 17	115 32 31	1372	1989
CRANBROOK FS	49 40 02	115 50 53	996	2001
CRAWFORD	50 45 54	117 57 28	887	2004
DARKWOODS	49 21 27	116 57 0	1657	2016
DEWAR CREEK	49 47 04	116 22 59	1608	1986
DOWNIE	51 30 55.	118 16 19	757	2005
DUNCAN	50 46 51	117 10 50	1376	1981
EIGHT MILE	49 25 58	118 34 42	1338	1980
ELKO	49 17 15.	115 09 16	775	1997
EMILY CREEK	50 08 42	115 58 38	1190	2002
FALLS CK	50 22 58.	117 52 48	790	2002
FLATHEAD 2	49 4 44.9	114 32 14	1311	1986
GOATFELL	49 07 31	116 09 50	1098	1986
GOATHAVEN	49 40 2.3	115 12 51	1051	2004
GOLD HILL	50 21 57	117 03 52	800	1979
GOLDSTREAM 2	51 40 9.9	118 29 13	1333	2005
GRAND FORKS	49 01 51	118 24 56	630	1981
JOHNSON LAKE	49 55 19	115 44 12	853	1986
KOOCANUSA	49 02 49	115 13 31	804	2016
MARION	51 02 32	116 21 50	1300	1994
NANCY GREEN	49 15 16	117 59 39	1397	1992
NEGRO CK	49 27 14	115 59 14	1572	2001
NICOLL	49 31 36	118 21 37	866	1981
NORNS (WIND)	49 30 09	117 47 13	2423	1992
OCTOPUS CREEK	49 41 56	118 04 52	1432	2000
PALLISER	50 29 40.	115 39 59	1100	1973
PENDOREILLE	49 03 02	117 24 50	725	1986
POWDER CREEK	49 54 23	116 51 18	1019	2001
REVELSTOKE FS	51 03 37	118 13 02	680	1995
ROCK CREEK	49 03 07	118 56 12	609	1990
RORY CREEK	50 36 45	116 47 35	1580	2016
ROUND PRAIRIE	50 05 12	114 53 59	1647	2001
SLOCAN	49 47 05	117 26 24	1230	1992
SMALLWOOD	49 29 48	117 26 51	997	1991
SPARWOOD	49 45 0.0	114 52 12	1138	1980
SUCCOUR CREEK	51 42 58	117 32 30	1000	1986
TOBY	50 30 46	116 03 19	894	1986
TROUT LAKE	50 37 17	117 27 52	991	1987
TSAR CREEK	51 59 50	118 06 09	1200	1986
WHISKEY	51 03 55	116 47 06	1300	1989
WHITE RIVER	50 11 06	115 15 58	1357	1989

Updated 4 November 2022

Fire Preparedness Special Investigation

Summary of Good Practices

February 2011

Suggestions for being diligent about fire preparedness:

General

Consider developing standard operating procedures and checklists. These clearly communicate a licensee's expectations around fire preparedness, and provide a record of inspections. Regular on-site monitoring further helps to demonstrate that a licensee has taken reasonable steps to ensure that its contractors or crews are taking reasonable steps to prevent fires.

Contact details

Provide 24-hour contact information to the fire centre before March 31 each year. Information about active operating areas and what equipment is on site is also useful to the fire centre.

Sufficient fire tools

Attach hand tools directly to machines and equip pick-ups with a shovel, Pulaski and a full and functional hand tank pump to ensure that there will always be enough tools for each worker even if individual tools are lost or broken.

Selecting a representative weather station

When determining whether or not a weather station is representative of a work site, consider slope, aspect, elevation (is the station at a similar or lower elevation than the work site), date of snow melt, distance from the weather station and topographical considerations (e.g., is the work site sheltered or subject to high winds?). The wildfire guidelines committee further suggests considering stand conditions, forest health, fuel type and fuel loading. If accessible, also consider the weather station maps previously available from the government. Selecting a number of nearby weather stations and averaging the danger classes is not recommended.

Document the reasons for selecting the representative weather station.



FIGURE 13. Fire extinguishers mounted on an excavator.

Operating in accordance with danger class restrictions

Operating according to the danger class restrictions is the law, but it should be viewed as a minimum requirement. Consider modifying activities as the danger class increases, for example:

- move to early shift before it is legally required;
- avoid tracked or chained equipment on rocky ground in high and extreme danger class; and
- avoid conducting high-risk activities when only one worker is present, when the danger class is very high or extreme.

Adequate suppression system

Before work begins, consider the size and topography of the work site to ensure that the suppression system can provide water to any part of the block should hand tools and fire extinguishers become ineffective. Identify on-site water sources and make sure everyone knows where they are.

Conduct a pre-work meeting to check fire preparedness, with weekly checks afterwards. Test equipment, including starting up the pump(s) and ensuring that parts are compatible and in good repair. Hold regular fire-suppression drills to test response time. Document these activities.

Consider having more than one water source on site, placed so as to be near different activities. Move the water around the site to keep it closest to the highest-risk activity.

Maintaining a fire watch

A fire watch must actively patrol the work site and be able to see the area where work took place. Performing other duties, such as maintaining a machine or processing wood while on fire watch does not satisfy the legal requirements for a fire watch. Ensure that the fire watch has the ability to call for help.

Document the fire watch start and finish times, areas patrolled, and the weather conditions.

Engines

Ensure all equipment has a spark arrestor, that the exhaust system and muffler are in good repair and that the machine is operating within manufacturer's specifications. Clean machines daily to remove needles, branches and other debris so as to reduce the risk of a fire.

Advisory Bulletin No. 2019/04/30 – “Timber Sale License - Fire Hazard Assessment and Abatement”

This advisory bulletin is intended to outline expectations for BCTS Timber Sale Licence (TSL) holders regarding fire hazard assessment and abatement requirements contained in BC Wildfire legislation and regulations and BCTS agreements. The *Wildfire Act* requires a person who is carrying out high risk industrial activities within a cut block, for example harvesting, to assess and abate fire hazards, [Wildfire Regulation Section 11 & 12](#).

WHAT IS A FIRE HAZARD ASSESSMENT?

Assessing fire hazard is analysing the ignition potential and predictable fire behaviour based on fuel hazards (i.e. physical fuel characteristics) and site-specific and probable weather conditions. It includes a consideration of the risk of a fire starting or spreading, the difficulty of controlling the fire, and potential impacts on identified values (Wildfire Regulation Section 11(4)).

[CLICK HERE FOR A GUIDE TO FUEL HAZARD ASSESSMENT AND ABATEMENT IN BC](#)

WHEN IS A FIRE HAZARD ASSESSMENT REQUIRED?

A fire hazard assessment is required when carrying out an industrial activity such as land clearing or other prescribed activity that is likely to create or increase a fire hazard within one kilometer of forest or grassland (*Wildfire Act* section.7), or when an official notifies a person carrying out an industrial activity that a fire hazard exists (Wildfire Regulation 11(1) (b) (ii)). An industrial activity is defined in Section 1 of the *Wildfire Act*. In accordance with the Wildfire Regulation Section 11 (3.1) a qualified holder must carry out a fire hazard assessment at the following prescribed intervals after the start of industrial activities;

- ✓ **3 months** intervals during the period in which the persons carrying on the industrial activity, if the activity is inside or within two kilometers of a local government area or a regional district fire protection district (Wildfire Regulation Section 11(2(a))).
- ✓ **6 months** intervals during the period in which the persons carrying on the industrial activity, for all other areas (Wildfire Regulation Section 11(3)).
- ✓ Or as specified by a professional forester or a registered forest technologist (Wildfire Regulation Section 11(3.1(b))).

If operations are going to be inactive for more than 3 or 6 months as applicable, a fire hazard assessment is required prior to shut down.

WHAT IS FIRE HAZARD ABATEMENT?

Fire hazard abatement includes activities carried out to reduce the ignition potential and the fire behaviour by reducing the fuel hazard as a result of industrial activities. Qualified holders must reduce the fire hazard on the site of industrial activity as necessary to ensure that it does not increase the risk of a fire starting and if a fire did start it would not increase the fire behaviour or fire suppression activity. The qualified holder must engage a forest professional to incorporate into a strategy, procedure or hazard assessment the levels of fuel abatement or other measures necessary to reduce the fire hazard.

Fire hazard assessment and abatement plans must be considered prior to commencement of industrial activities options may include burning, non-burning activities or a combination of reducing fuel loading, rearranging fuel, removing ignition sources, creating fuel breaks and limiting access. In general, all roadside and landing piles should be abated. In accordance with Section 12.1 Wildfire Regulation abatement period begins from the date of commencement industrial activity (for example harvesting);

- 24 months for interface, an area inside, or within 2m of , the boundaries of;
 - i. A fire protection district in a regional district;
 - ii. an improvement district;
 - iii. a water improvement district;
 - iv. a prescribed organization
- 30 months for non-interface, or as specified by a forest professional for non-interface areas.

WHO CAN CARRY OUT FIRE HAZARD ASSESSMENTS AND PRESCRIBE ABATEMENT STRATEGIES? Conducting fire hazard assessments and prescribing abatement strategies falls within the scope of practice of a forest professional as per the *Foresters Act*. It is required that TSL holders engage qualified forest professionals for the purposes of conducting fire hazard assessments and prescribing abatement measures.

A ***Qualified Holder*** is a person who has a valid cost sharing or service agreement in place with BC Wildfire Service or is the holder of a specified licence under the *Forest Act* and is required to pay annual rent under the Annual Rent Regulation.

FOREST PROFESSIONALS

Forest professionals are responsible for prescribing work to be carried out to mitigate the fire risk to the client. Forest professional must ensure they are competent to prescribe the required work and comply with all legislation, including the Association of BC Forest Professionals (ABC FP) bylaws and policies. Because knowledge and experience can vary from client to client, forest professionals must ensure they have the necessary information to undertake the service.

Forest professionals practising in the area of fire and fuel management need to have in-depth understanding of the following components of fire and fuel management:

- ✓ An understanding of fire and fuels management goals and objectives,
- ✓ Understanding wildfire suppression principles in BC,
- ✓ Understanding of wildfire behaviour principles,
- ✓ Ability to appropriately assess wildfire and fuel hazards, and
- ✓ Familiarity with BC ecosystems
- ✓ For additional information on forest professional refer to the Association of BC Forest Professionals website https://abcfp.ca/web/ABC FP/About_Us/What-is-a-forest-professional.aspx

WHAT ARE TSL HOLDER'S RESPONSIBILITIES?

- ✓ **Be familiar** with the potential fire hazard risk for your applicable operating area. [CLICK HERE](#) to refer to BC Fire Hazard Assessment and Abatement Risk Map
- ✓ **Engage support from forest professionals** when conducting fire hazard assessments and prescribing abatement measures.
- ✓ **Complete Fire Hazard Assessments** at prescribed intervals.
- ✓ **Document and retain records** results of all assessment and abatement activities.
- ✓ **Provide copies** of all completed fire hazard assessment(s) to BCTS.
- ✓ **Conduct abatement activities** as identified by assessment results or as required in accordance with the *Wildfire Act* and Regulations.
- ✓ If burning is part of the plan for abatement:
 - Ensure required notification is made and approvals received from BC Wildfire Service
(Burn Registration Line 1-888-797-1717),
 - **Ensure open burning requirements/restrictions are followed.** Refer to the Industrial and Resource Management Burning Category 3 Guide: [CLICK HERE FOR GUIDE](#) and venting index <http://www.env.gov.bc.ca/epd/bcairquality/readings/ventilation-index.html>
- ✓ Take necessary steps to **ensure open burning activities are extinguished** (e.g. scanning).

Receipt of hazard assessments and completion of abatement activities is associated to BCTS deposit release procedures.

Be advised that under Section 79 of the Forest Act a holder of a timber sale licence will have a continuing liability to perform obligations.

For further information about fire hazard assessment and abatement, refer to the following:

- ✓ Forest Practice Board “Board Bulletin, Volume 18, Fire Hazard Assessment”
<https://www.bcfpb.ca/wp-content/uploads/2016/10/Volume-18-Fire-Hazard-Assessment.pdf>
- ✓ BC Wildfire Industry Website <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/for-industry-commercial-operators>

Important Contacts



Burn Registration Line
1-888-797-1717

To Report a Wildfire

1-800-663-5555
or *5555 from a cellular phone

"Personal information is collected by the Ministry of Forests, Lands and Natural Resource operations under section 26 of the Freedom of Information and Protection of Privacy Act, for the purpose of reporting wildfires. For questions regarding this collection please contact the Supervisor, Provincial Forest Fire Reporting Center, 2957 Juidland Road, 250 387-2225."

Fire Information by Phone

For recorded information on campfire, open fire and travel bans or restrictions, call toll-free:
1-888-3FOREST (1-888-336-7378)

Fire Information Online

www.BCWildfire.ca
www.facebook.com/BCForestFireInfo
twitter.com/bcgovfireinfo

Visit the Wildfire Management Branch website for:

- campfire bans or open fire restrictions
- travel restrictions
- maps showing Fire Danger Class, temperature, relative humidity, precipitation, and wind speed
- Detailed Fire Danger Class (available for 216 fire weather stations in B.C.)



Ministry of
Forests, Lands and
Natural Resource Operations



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Natural Resource Operations

Category 3 Open Fires

In British Columbia, the *Wildfire Act* and regulation specify your legal obligations when using fire in, or within, one kilometre of forest land or grassland. A Category 3 open fire is defined as a fire that burns:

- material at the same time in three or more piles each not exceeding 2 metres in height and 3 metres in width; or
- material in one or more piles each exceeding 2 metres in height or 3 metres in width; or
- one or more windrows; or
- stubble or grass over an area exceeding 0.2 hectares (more than 2,000 square metres).

Persons may light or make use of this type of open fire if:

- There are no other restrictions in place for doing so;
- Doing so is, and will continue to be, safe;
- The person obtains a burn registration number for the fire;

- The person takes all necessary precautions to ensure the fire is contained in the burn area;
- A fuel break (sometimes called a fire break—a change in fuel type or condition, typically a strip of land cleared to mineral soil to reduce the likelihood of the fire spreading) is established around:

- the burn area; or
- each debris pile or windrow;
- While the fire is burning and there is risk of escape, the person

- maintains the fuel break;
- has an adequate fire suppression system available at the burn area;
- ensures the fire is watched and patrolled by a person equipped with at least one fire fighting hand tool in order to prevent the fire from escaping;

- ensures fire does not exceed the capacity of the persons, fire fighting tools and heavy equipment on site for timely action to prevent any fire from escaping, and
- The person carries out fire control, and extinguishes the fire if practicable, if the fire spreads beyond the burn area. The person must also report the fire.
- A person carrying out fire control for a Category 3 Open Fire must make available to fight the fire at least the greater of
 - two pieces of heavy equipment, two fire suppression systems and 11 workers each equipped with at least one fire fighting hand tool; and
 - all workers, fire suppression systems, heavy equipment and fire fighting hand tools within 30 km by road if on Crown land or all resources working on the land if on land other than Crown land.

*Anyone who lights, fuels or makes use of a Category 3 open fire **must** comply with the Environmental Management Act and Open Burning Smoke Control Regulation (OBSCR). The Regulation requires individuals to check local venting conditions prior to ignition and to ensure that no air quality burning bans are in place. Burning anything other than clean woody debris requires a permit or approval from the Ministry of Environment. The OBSCR also contains clauses on setback distances and smoke release periods. For more information, see www.bccaitquality.ca/regulatory/index.html or call your local Ministry of Environment office.*

For details regarding **Resource Management Open Fires**, please see reverse.

RESPECT THE USE OF FIRE

INDUSTRIAL & RESOURCE MANAGEMENT BURNING



A Guide to Category 3 and Resource Management Open Fires

Resource Management Open Fires

In British Columbia, the *Wildfire Act* and regulation specify your legal obligations when using fire in, or within, one kilometre of forest land or grassland.

Under the regulation, a resource management open fire means a fire that:

- burns unpiled slash over an area of any size; or
- is not a campfire, or a Category 2 or 3 open fire and is lit, fuelled, or used for silviculture treatment, forest health management, wildlife habitat enhancement, ecological restoration, or range improvement.

A person may light, fuel or make use of a resource management open fire when:

- There are no other restrictions in place for doing so;
- Doing so is, and will continue to be, safe;
- The person submits a burn plan to an official and receives the official's approval to it in writing (details on burn plans can be found at www.BCWildfire.ca);
- The person obtains a burn registration number for the fire by calling 1-888-797-1717 toll-free;
- The person takes all the necessary precautions to ensure the fire is contained in the burn area.

Burn Responsibly

Responsible Burning Decisions

The *Wildfire Act* puts the onus on you to use fire safely. This requires you to determine if you can burn safely before lighting a fire, and take reasonable precautions to ensure the fire is contained.

- Check with the Ministry of Forests, Lands and Natural Resource Operations for bans or restrictions on open burning. These are typically put in place when the forest is dry and the danger of wildfires increases. Check the Ministry website at www.BCWildfire.ca or phone the Fire Information line at 1-888-336-7378.
- Check the forecast wind conditions. If the wind is strong enough to carry sparks to other combustible material, do not burn.
- When conducting a Resource Management Burn you must ensure that all obligations specified in the burn plan are met, including resources required on ignition and in the event of an escape.

Be Prepared to Respond

Under the law, you must watch the fire to prevent escape. If an escape occurs, the person responsible for the fire must be equipped with at least one fire fighting hand tool to control and extinguish the fire.

If the fire gets out of control:

- First, try to extinguish it if practicable.
- Second, report the escaped fire as soon as possible to the Ministry of Forests, Lands and Natural Resource Operations, a peace officer (for example, RCMP or municipal police), OR by calling a fire emergency response telephone number (911 in organized areas, or 1-800-663-5555 or *5555 on your cellular phone).
- Continue carrying out fire control until relieved by an official.

Extinguish the Fire Properly

You must extinguish the fire before leaving the area. Ensure that ashes are cold to the touch. A Category 3 open fire must be extinguished in adherence to the requirements of the burn registration number.

Careless or improperly conducted open burning costs B.C. in excess of \$3 million annually.

About the Wildfire Act

The *Wildfire Act* specifies your legal obligations when using fire for campfires, backyard burning, industrial/agricultural burning and resource management purposes. It reflects a new approach to wildfire prevention and control in British Columbia that puts the onus on those persons using open fire to ensure their activities do not lead to wildfires.

Contravention of the *Wildfire Act* is an offence. A person who contravenes the *Wildfire Act* may be liable for an administrative penalty, a fine upon conviction, and/or fire fighting and rehabilitation costs as specified in the *Wildfire Act*.

Where the Act applies

The *Wildfire Act* applies on both public (Crown) and private land throughout B.C.

Check with your local fire department, municipality, improvement district or regional district to determine if there are local bylaws that pertain to open fires. If there are local bylaws in place, these agencies will provide further information.

Still not sure?

If you need help planning your burning activities, contact the Fire Centre nearest you:

Coastal Fire Centre
250 951-4222

Kamloops Fire Centre
250 554-5500

South East Fire Centre
250 365-4040

Cariboo Fire Centre
250 989-2600

Prince George Fire Centre
250 565-6124

North West Fire Centre
250 847-6600

Burn Registration Line
1-888-797-1717

Venting Index

- **BC Environment** (text)
www.env.gov.bc.ca/epd/bcairquality/readings/ventilation-index.html

- **Provincial Venting Index Hotline**

1-888-281-2992

Venting conditions updated daily at 7 a.m.
Air quality burn bans also advertised.
Some regions may provide air quality information.



May 2014

This guide is intended for information purposes only. It is not legal advice. The *Wildfire Act* and regulation is online at: bcwildfire.ca



BC Timber Sales
Environmental Management System
ENVIRONMENTAL FIELD PROCEDURE
EFP 06 FUEL HANDLING

Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BCTS clients (Licensee, Permittee and Contractor workers) and BCTS staff who are responsible for fuel handling within the scope of BCTS EMS program. The purpose of this document is to bring together legislative requirements, industrial standards and best management practices as it relates to fuel handling, storage and transportation. The primary fuel used within the forest industry is diesel fuel (UN1202) found under Class 3, Flammable Liquids. This EFP is intended to help promote good fuel management, and is not intended to supersede legislative requirements or criteria. Applicable Acts and Regulations include: Transportation of Dangerous Goods Act and Regulations, BC Motor Vehicle Act and Regulations, Environmental Management Act and Regulations, Hazardous Products Act and Regulation, Contaminated Sites Act and Regulations, Workers' Compensation Act and OHS Regulations.

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3	Large Mobile Tanks >450 L to ≤3000L Ancillary tank typically located in the box of a pickup truck used to transport, store and dispense fuel	4
4	Highway Tanks & TC Portable Tanks, Generally >3000L Used to transport fuel. Sometimes used to store and dispense fuel.	5
5	Large Stationary Skid Tanks >3000L Used to store and dispense fuel, rarely used to transport fuel	6
6	Definition of Terms In an effort to keep this document short and to the point, some terms and clauses were used that may require further explanation or interpretation. The Definition of Terms is also used to provide examples. Transport Canada contact information	7 to 9
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TABLE #1 SMALL FUEL CONTAINERS (Volumes <230L) Drums, Jerry Cans, Pails, Canisters

Legend

- Legal Requirement
- ☑ BCTS Requirement

TYPE	CONDITION, DESIGN & MAINTENANCE	STORING & SECURING	DISPENSING	TRANSPORT (see column 2 for securing details)	PREVENTION & RESPONSE
SMALL FUEL CONTAINERS (Volumes < 230L)	<ul style="list-style-type: none"> ■ Must be designed, constructed, filled, closed, secured and maintained so under normal conditions of handling and transport there will be no accidental release of dangerous goods that would endanger public or worker safety. ☑ Containers must be in good condition – not damaged, rusting or leaking. <p>Construction Standard</p> <ul style="list-style-type: none"> ☑ Containers must be specifically designed for the product. ■ Containers <u>less than 30 liters</u> are exempt from TDG requirements but are still governed under WHMIS. <p>Inspections</p> <ul style="list-style-type: none"> ☑ Licensees/ Contractors must self inspect containers on a regular basis. (plastic containers usually every 5 years). Immediately replace containers that are leaking. 	<ul style="list-style-type: none"> ☑ Do not store small containers in Riparian Management areas or Marine Environments wherever practicable ☑ Do not smoke where fuel is stored or dispensed <p>Labeling</p> <ul style="list-style-type: none"> ■ Any container over 30 liters must have appropriate safety marks: <ul style="list-style-type: none"> ● Label or Placard as required, ● UN number and ● Shipping Name ■ TDG safety marks on the outside of an enclosed unit must be visible if containers are stored within an enclosed unit. ■ WHMIS labeling or appropriate <u>Product Identification</u> is required when storing hazardous products <p>Securing</p> <ul style="list-style-type: none"> ■ As per manufacturer's recommendations, containers must be secured and kept level to prevent shifting, swaying, damage, escape from the vehicle and accidental release of product. ■ Tie down straps must have safe combined working load ratings <i>greater</i> than the secured load. 	<ul style="list-style-type: none"> ■ Maintain current MSDS in a location available to worker ☑ Do not dispense fuel in Riparian Management areas or Marine Environments wherever practicable. ☑ Dispense all flammable and combustible substances only from drums in an upright position ☑ Do not fill containers beyond their safe filling level (<i>approximate safe level</i> – 90%) ☑ Store the hose above the pump (and drum) to avoid siphoning. 	<ul style="list-style-type: none"> ■ Drums must be properly arranged by: <ul style="list-style-type: none"> ● Stacking in an upright, vertical position ● Separating and Protecting through use of boards, stakes or sides on the vehicle to protect the load from moving ■ If multiple containers of diesel and/or gasoline are transported and the <u>combined capacity</u> exceeds 2000L, the following conditions apply: <ul style="list-style-type: none"> ● A shipping document must be completed for the goods hauled ● The operator must have TDG training and possess a certificate ● The load must have placards on all visible sides ■ Empty drum transport are exempt from TDG Regs provided: <ul style="list-style-type: none"> ● Drum residue <10% ● If more than 10 drums then DANGER Placards are required on all four sides and include a shipping document outlining: the primary class, 'residue drums' and number of drums. 	<ul style="list-style-type: none"> ■ Take reasonable measures to prevent leaks & spills ■ Respond to all fuel spills ☑ Where dispensing and storing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6). <p>Fire Control and Response</p> <ul style="list-style-type: none"> ☑ Maintain and self-inspect one suitable B:C-rated fire extinguisher ensuring it's: <ul style="list-style-type: none"> ● not actuated or tampered with ● shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation ● pressure gauge reading or indicator is in operable range ● safety seal or pin in place; ● product id/WHMIS label in place ● located in appropriate location, and ● document self-inspections ☑ Maintain a spill kit of suitable size (See Table #7)



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TABLE #2 SMALL MOBILE (TRUCK BOX) TANKS (Volumes: ≤450L)

Legend

- Legal Requirement
- ☑ BCTS Requirement

TYPE	CONDITION, DESIGN, & MAINTENANCE	STORING & SECURING	DISPENSING	TRANSPORT (see column 2 for securing details)	PREVENTION & RESPONSE
SMALL MOBILE (TRUCK BOX) TANKS (Volumes: <450L)	<ul style="list-style-type: none"> ■ Must be designed, constructed, filled, closed, secured and maintained so under normal conditions of handling and transport there will be no accidental release of dangerous goods that would endanger public or worker safety. ☑ Containers must be in good condition – not damaged, rusting, or leaking <p>Construction Standard</p> <ul style="list-style-type: none"> ■ Diesel: a spec or non-spec tank may be used. This tank capacity (450L or less) is exempt from the specifications standards under the TDG regulation. ■ Gasoline: a spec tank is required and must show the spec plate of the design standard. ■ Spec tanks may include: <ul style="list-style-type: none"> • UN Standard IBC UN 31A and UN31B IBC Portable Tanks as per CAN/CSB 43.146 (2002) • ULC/ORD 142.13 ■ All Gasoline spec tanks must be tested and inspected by a Transport Canada (TC) Registered facility every 5 years. Proof that tests and inspections were conducted by a TC Registered facility within the last 5 years must be available upon request. <p>Inspections</p> <ul style="list-style-type: none"> ☑ Licensees/ Contractors must self inspect tanks on a regular basis. Immediately replace containers that are leaking. 	<ul style="list-style-type: none"> ■ Use a pressure relief cap that meets manufacturers design specifications ☑ Do not store small mobile tanks in riparian management areas or marine environments wherever practicable ☑ Do not smoke where fuel is stored or dispensed <p>Securing</p> <ul style="list-style-type: none"> ■ As per manufacturer's recommendations, tanks must be appropriately secured and kept level to prevent shifting, swaying, damage, escape from the vehicle and accidental release of product. ■ Tie down straps must have safe combined working load ratings greater than the secured load 	<ul style="list-style-type: none"> ■ Use dispensing pumps designed for the products being handled ■ Use an appropriate hose and nozzle (in accordance with ULC standards) for dispensing fuel ■ Make sure there is suitable bonding (i.e. wire lined hose) to prevent static charges when dispensing gasoline. ■ Maintain current MSDS in a location available to workers ☑ Hoses and nozzles must be maintained and not leak. ☑ Do not dispense fuel in riparian management areas or marine environments wherever practicable. ☑ Operators must stay with the nozzle at all times while dispensing fuel ☑ Nozzles must be secured in drip containment after use or in an upright position so that it's above the tank. ☑ Close valves when finished dispensing ☑ Store hose in a safe manner to prevent damage and leaks (i.e. coiled on top of tank) ☑ Do not fill tanks beyond their safe filling level (<i>approximate safe level</i> – 90%) ☑ Keep fuel and equipment on level ground 	<ul style="list-style-type: none"> ■ If multiple tanks of diesel and/or gasoline are carried on the vehicle and the combined capacity exceeds 2000 liters, the following conditions apply: <ul style="list-style-type: none"> • A shipping document must be completed for the goods hauled • The operator must have a TDG training and possess a valid certificate • The load must be placarded on all visible sides <p>Safety Labeling & Spec Plates</p> <ul style="list-style-type: none"> ■ WHMIS labeling or appropriate Product Identification is required when storing hazardous products ■ Maintain visible safety marks: <ul style="list-style-type: none"> • Label or placard • UN number and • Shipping name ■ TDG safety marks must be visible on the tank or any enclosed storage unit ■ Spec plates, decals or associated documentation--(ensuring paperwork is linked to the specific tank) must identify the following: <ul style="list-style-type: none"> • Container Type & Standard • Manufacturer and Date • Re-certification Date and TC Registered Facility 	<ul style="list-style-type: none"> ■ Take reasonable measures to prevent leaks & spills ■ Respond to all fuel spills ☑ Where dispensing and storing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6). ☑ Where tanks are stored on the ground, collision protection is required. (see Table #6) <p>Fire Control and Response</p> <ul style="list-style-type: none"> ☑ Maintain and self-inspect one suitable B:C-rated fire extinguisher ensuring it's: <ul style="list-style-type: none"> • not actuated or tampered with • shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation • pressure gauge reading or indicator is in operable range • safety seal or pin in place; • product id/WHMIS label in place • located in appropriate location, and document self-inspections ☑ Maintain a spill kit of suitable size (See Table #7)



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Legend	
TABLE #3 LARGE MOBILE TANKS (Volumes: >450L – ≤3000L)	
TYPE	CONDITION, DESIGN, & MAINTENANCE
LARGE MOBILE TANKS (Volumes: >450L – 3000L)	<ul style="list-style-type: none"> <input type="checkbox"/> Must be designed, constructed, filled, closed, secured and maintained so under normal conditions of handling and transport there will be no accidental release of dangerous goods that would endanger public or worker safety. <input checked="" type="checkbox"/> Containers must be in good condition – not damaged, rusting, or leaking <p>Construction Standard</p> <ul style="list-style-type: none"> <input type="checkbox"/> All Tanks: used to transport fuel (regardless of volume) must be designed, and constructed to a mobile tank standard and display a spec plate. <input type="checkbox"/> Spec Tanks: used for diesel and gasoline may have one of the following spec plates: <ul style="list-style-type: none"> • UN Standard IBC UN 31A and UN31B IBC Portable Tanks as per CAN/CGSB 43.146 (2002) • ULC/ORD 142.13 <input type="checkbox"/> Non-Spec Tanks may no longer be used. Any tank without a spec plate is non-spec. <p>Inspections</p> <ul style="list-style-type: none"> <input type="checkbox"/> All Spec tanks (listed above) must be tested and inspected by a Transport Canada (TC) Registered facility every 5 years. Proof that tests and inspections were conducted by a TC Registered facility within the last 5 years must be available upon request. <input checked="" type="checkbox"/> Licensees/ Contractors must self inspect tanks on a regular basis. Immediately replace containers that are leaking.
DISPENSING	STORING AND SECURING
<ul style="list-style-type: none"> <input type="checkbox"/> Use an appropriate hose and nozzle (in accordance with ULC Standards) for dispensing fuel <input type="checkbox"/> Use dispensing pumps designed for the products being handled. <input type="checkbox"/> Make sure there is suitable bonding (i.e. wire lined hose) to prevent static charges when dispensing gasoline <input type="checkbox"/> Maintain current MSDS in a location available to workers <input checked="" type="checkbox"/> Hoses and nozzles must be maintained and not leak <input checked="" type="checkbox"/> Do not dispense fuel in riparian management areas or marine environments wherever practicable. <input checked="" type="checkbox"/> Operators must stay with the nozzle at all times while dispensing fuel <input checked="" type="checkbox"/> Nozzles must be secured in drip containment after use or in an upright position so that it's above the tank. <input checked="" type="checkbox"/> Keep fuel and equipment on level ground <input checked="" type="checkbox"/> Close valves when finished dispensing <input checked="" type="checkbox"/> Store hose in a safe manner to prevent damage and leaks (i.e. coiled on top of tank) <input checked="" type="checkbox"/> Do not fill tanks beyond their safe filling level (approximate safe level – 90%) 	<ul style="list-style-type: none"> <input type="checkbox"/> Use a pressure relief cap that meets manufacturers design specifications <input checked="" type="checkbox"/> Do not leave vehicles carrying auxiliary fuel in riparian management areas or marine environments wherever practicable. <input checked="" type="checkbox"/> Do not smoke where fuel is stored or dispensed <p>Securing</p> <ul style="list-style-type: none"> <input type="checkbox"/> As per manufacturer's recommendations, tanks must be appropriately-secured and kept level to prevent shifting, swaying, damage, escape from the vehicle or trailer and accidental release of product. <input type="checkbox"/> Tie down straps must have safe combined working load ratings greater than the secured load to ensure the tank is integrally mounted
TRANSPORT (see column 2 for securing details)	PREVENTION & RESPONSE
<ul style="list-style-type: none"> <input type="checkbox"/> If multiple tanks of diesel and/or gasoline are carried on the vehicle and the combined capacity exceeds 2000 liters, the following conditions apply: <ul style="list-style-type: none"> • A shipping document must be completed for the goods hauled • The operator must have a TDG training and possess a certificate • The load must be placarded on all visible sides. <input type="checkbox"/> If large mobile tanks are transported on a trailer, the trailer must meet Motor Vehicle Requirements, (GVW, brakes, lights and axels etc.). <p>Safety Labeling & Spec Plates</p> <ul style="list-style-type: none"> <input type="checkbox"/> Maintain visible safety marks: <ul style="list-style-type: none"> • Label or placard, (placard if exceeding 500 kg) • UN number and • Shipping name <input type="checkbox"/> TDG Placards must be visible <input type="checkbox"/> Spec plates, decals or associated documentation – (ensuring paperwork is linked to the specific tank) must identify the following: <ul style="list-style-type: none"> • Container Type & Standard • Manufacturer and Date • Re-certification Date and TC Registered Facility <p>Labeling</p> <ul style="list-style-type: none"> <input type="checkbox"/> WHMIS labeling or appropriate Product Identification is required when storing hazardous products 	<ul style="list-style-type: none"> <input type="checkbox"/> Take reasonable measures to prevent leaks & spills <input type="checkbox"/> Respond to all fuel spills <input checked="" type="checkbox"/> Where dispensing and storing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6). <input checked="" type="checkbox"/> Where tanks are stored on the ground, collision protection is required. (see Table #6) <p>Fire Control and Response</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Maintain and self-inspect one suitable B:C- rated fire extinguisher ensuring it's: <ul style="list-style-type: none"> • not actuated or tampered with • shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation <input type="checkbox"/> pressure gauge reading or indicator is in operable range <input type="checkbox"/> safety seal or pin in place; <input type="checkbox"/> product id/WHMIS label in place <input type="checkbox"/> located in appropriate location, and <input type="checkbox"/> document self-inspections <input checked="" type="checkbox"/> Maintain a spill kit of suitable size (See Table #7)



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TABLE #4 HIGHWAY & TC PORTABLE TANKS
(Fuel Trucks & Pup-Trailers with Volumes > 3000L)

		Legend			
		■ Legal Requirement	☑ BCTS Requirement		
TYPE	CONDITION, DESIGN & MAINTENANCE	STORING AND SECURING	DISPENSING		
HIGHWAY & TC PORTABLE TANKS (Volume > 3000L)	<ul style="list-style-type: none"> ■ Must be designed, constructed, filled, closed, secured and maintained so under normal conditions of handling and transport there will be no accidental release of dangerous goods that would endanger public or worker safety. <p>Construction Standard</p> <ul style="list-style-type: none"> ■ All Tanks: used to transport fuel and sometimes to store and dispense fuel. Tanks must be designed, constructed and/or tested to a design standard specification and display a visible and legible spec plate to that standard. <ul style="list-style-type: none"> • TC44 Portable Tanks as per CSA B626-13 • UN Standardized Portable Tanks as per CSA B625-13 Standard ■ Fuel Trucks must meet the following: <ul style="list-style-type: none"> • CSA B620-03 Highway and Portable Tanks for TDG • Spec tank built after 2003 may transport diesel or gasoline ■ Non-Spec Tanks may no longer be used. Any tank without a spec plate is non-spec. <p>Inspections</p> <ul style="list-style-type: none"> ■ All Highway and Transport Canada (TC), Portable Tanks must be tested and inspected by a TC Registered facility every five years. Proof that tank tests and inspections were conducted by a TC Registered Facility must be available upon request. ☑ Licensees/ Contractors must self inspect tanks on a regular basis. Immediately replace containers that are leaking. 	<ul style="list-style-type: none"> ■ Use a pressure relief hatch that meets manufacturers design specifications ☑ Do not leave fuel truck or pup trailer in riparian management areas or marine environments wherever practicable. ☑ Do not smoke where fuel is stored or dispensed <p>Securing</p> <ul style="list-style-type: none"> ■ Fuel truck tanks must be integrally mounted to the unit. ☑ Ensure tank is secure, stable and remains level to prevent accidental release of product. <p>Labeling</p> <ul style="list-style-type: none"> ■ Product identification is an acceptable substitute for supplier or workplace labels and may be affixed to the sides of the tank compartments and piping. 	<ul style="list-style-type: none"> ■ Use an appropriate hose and nozzle (in accordance with UL/C standards) for dispensing fuel ■ Use dispensing pumps designed for the products being handled ■ Make sure there is suitable bonding (i.e. wire lined hose) to prevent static charges when dispensing gasoline ■ Maintain current MSDS in a location available to workers ☑ Do not dispense fuel in riparian management areas or marine environments wherever practicable. ☑ Hoses and nozzles must be maintained and not leak ☑ Dispensing gasoline fuel directly from a fuel truck into the equipment is NOT permitted ☑ Close valves when finished dispensing ☑ Operators must stay with the nozzle at all times while dispensing fuel ☑ Store hose in a safe manner to prevent damage and leaks (i.e. coiled on top of tank) ☑ Do not fill containers beyond their safe filling level (approximate safe level – 90%) ☑ Keep fuel and equipment on level ground 	<p>STORING AND SECURING</p> <p>TRANSPORT (see column 2 for securing details)</p> <ul style="list-style-type: none"> ■ Fuel trucks and pup-trailers used to transport products on public roads must meet Motor Vehicle requirements (i.e. GVW, brakes, lights, axles, etc.) and TDG requirements (Placards & Documentation) ■ When the total capacity of a fuel tank exceeds 2000 liters, the shipper/driver is required to: <ul style="list-style-type: none"> • Complete a shipping document for the goods hauled or residue last contained • Maintain a valid TDG training certificate • Visible spec plate • Placard the load on all four sides ■ Non-Spec tanks may no longer be used. <p>Safety Labeling & Spec Plates</p> <ul style="list-style-type: none"> ■ Maintain visible safety marks: <ul style="list-style-type: none"> • Label or placard and, <ul style="list-style-type: none"> • UN number and • Shipping name • TDG Placards must be visible on all four sides ■ Spec plates, decals or associated documentation—(ensuring paperwork is linked to the specific tank) must identify the following: <ul style="list-style-type: none"> • Container Type & Standard • Manufacturer and Date • Re-certification Date and TC Registered Facility 	<p>PREVENTION & RESPONSE</p> <ul style="list-style-type: none"> ■ Take reasonable measures to prevent leaks & spills ■ Respond to all fuel spills ☑ Where dispensing and storing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6). <p>Fire Control and Response</p> <ul style="list-style-type: none"> ☑ Maintain and self-inspect one suitable B:C-rated fire extinguisher ensuring it's: <ul style="list-style-type: none"> • not actuated or tampered with • shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation • pressure gauge reading or indicator is in operable range • safety seal or pin in place • product id/WHMIS label in place • located in appropriate location, and • document self-inspections <p>☑ Maintain a spill kit of suitable size (See Table #7)</p>



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TABLE #5 LARGE STATIONARY SKID TANKS (Generally Volumes > than >3000L)

Legend

- Legal Requirement
- BCTS Requirement

TYPE	CONDITION, DESIGN & MAINTENANCE	STORING AND SECURING	DISPENSING	TRANSPORT (see column 2 for securing details)	PREVENTION & RESPONSE
LARGE STATIONARY SKID TANKS (Volume >3000L)	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Must be designed, constructed, filled, closed, secured and maintained so under normal conditions of handling and transport there will be no accidental release of dangerous goods that would endanger public or worker safety. <input checked="" type="checkbox"/> Spec Tanks: used for diesel or gas and will generally have one of the following markings: <ul style="list-style-type: none"> • ULC-S601 Utility Tanks • ULC-S653 AST Steel Tanks • ULC-S602 AST Steel Tanks • ULC-S630 AST Vertical Tanks • CAN/ULC-S643-M • ULC-C142.18 Rectangular Steel Tank • ULC-C142.17 Vertical Steel Tank. <input checked="" type="checkbox"/> Non-Spec Tanks: All non-spec tanks must be taken out of operation. Any tank without a spec plate is non-spec. <p>All tanks must be constructed and maintained to conform to a ULC specification for stationary above ground tanks.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> All tanks must be designed, constructed to a design standard specification and must bear a visible and legible specification plate to that standard. <input checked="" type="checkbox"/> Stationary Tanks are not designed as mobile tanks. Prior to moving, the tank (usually a ULC-S601 spec tank) must be emptied to the maximum extent and in accordance with the Equivalent Level of Safety Permit (see table #6 for details). <p>Inspections</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Licensees/ Contractors must self inspect tanks on a regular basis. Immediately replace containers that are leaking. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> All stationary tanks must have secondary containment. Options include: <ul style="list-style-type: none"> • Tank-in-tank (vacuum monitored, visible access port or visible access hatch). <input checked="" type="checkbox"/> Use a pressure relief cap that meets manufacturers design specifications <input checked="" type="checkbox"/> Store nozzle & hose in a safe manner to prevent damage and leaks (i.e. on a retractor, hose reel or coiled) <input checked="" type="checkbox"/> Do not place stationary skid tanks in riparian management areas or marine environments, unless no other area is practicable. <input checked="" type="checkbox"/> Do not smoke where fuel is stored or dispensed <p>Storage</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large stationary skid tanks must be: <ul style="list-style-type: none"> • Above ground, doubled wall with a positive containment monitoring leak protection feature, (vacuum gauge, visual port or dipstick); <p>Securing</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> As per manufacturer's recommendations, tanks must be appropriately secured to the skid and kept level to prevent shifting, swaying, damage escape and accidental release of product. <input checked="" type="checkbox"/> Tanks must be mounted to a fire-resistant cradle and skid. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Use dispensing pumps designed for the products being handled <input checked="" type="checkbox"/> Use an appropriate hose and nozzle (in accordance with ULC standards) for dispensing fuel <input checked="" type="checkbox"/> Make sure there is suitable bonding to prevent static charges when dispensing gasoline <input checked="" type="checkbox"/> Maintain current MSDS in a location available to workers <input checked="" type="checkbox"/> Hoses and nozzles must be maintained and not leak <input checked="" type="checkbox"/> Do not dispense fuel in riparian management areas or marine environments wherever practicable. <input checked="" type="checkbox"/> Operators must stay with the nozzle at all times while dispensing fuel <input checked="" type="checkbox"/> Store nozzle & hose in a safe manner to prevent damage and leaks (i.e. on a retractor, hose reel, coiled or above the tank to prevent siphoning) <input checked="" type="checkbox"/> Close valves when finished dispensing <input checked="" type="checkbox"/> Do not fill tanks beyond their safe filling level (approximate safe level—90% level ground) <input checked="" type="checkbox"/> Keep fuel and equipment on level ground 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> When moving a skid tank (with or without fuel) having a total capacity of diesel greater than 2000 liters you must follow TDG Regulations <ul style="list-style-type: none"> • Complete a shipping document for the goods hauled or remaining in the tank • Maintain a valid TDG training certificate • Ensure that all conditions of the Equivalent Level of Safety Permit are met (see table #6) <input checked="" type="checkbox"/> All Skid-type tanks are considered stationary tanks (i.e. non-mobile tanks) and must: <ul style="list-style-type: none"> • Be emptied (5% or less) prior to moving • Be moved only from point to point in accordance with the Equivalent Level of Safety Permit (see table #6 for details). <p>Labeling</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Maintain visible safety marks: <ul style="list-style-type: none"> • Label or placard, • UN number and • Shipping name <input checked="" type="checkbox"/> TDG Placards must be visible on all four sides <input checked="" type="checkbox"/> WHMIS labeling or appropriate <u>Product Identification</u> is required when storing hazardous products 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Take reasonable measures to prevent leaks & spills <input checked="" type="checkbox"/> Respond to all fuel spills <input checked="" type="checkbox"/> Where dispensing and storing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6). <input checked="" type="checkbox"/> Where tanks are stored on the ground, collision protection is required. (see Table #6) <p>Fire Control and Response</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Maintain and self-inspect one suitable B:C-rated fire extinguisher ensuring it's: <ul style="list-style-type: none"> • not actuated or tampered with • shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation • pressure gauge reading or indicator is in operable range • safety seal or pin in place; • product id/WHMIS label in place • located in appropriate location, and • document self-inspections <input checked="" type="checkbox"/> Maintain a spill kit of suitable size (See Table #7)



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Table #6 Definition of Terms

Additional Spill Control Prevention	<ul style="list-style-type: none"> • Re-assess the environmental risk and implement additional control measures • Review the BCTS Fuel Handling Environmental Field Procedure 06 to ensure procedures address the risk factors • Review Spill Response awareness and preparedness, conduct a spill drill and increase monitoring of dispensing area locations • Enhance minimum Spill Kit requirements as outlined in Table #7 • Move the fuel storage to a lower risk location • Add secondary containment or double-walled containers • Breakaway valves on hoses • Collision Protection e.g. guard logs • Tanks located more than 6 meters from a building • Tarps for containment • Materials to block culverts when needed • Sandbags and PVC pipe for underflow containment • Sandbags for diversions and upstream eddy containment
B:C Fire Extinguisher	<p>The number represents the size of fire the extinguisher will put out under normal use (non-expert)</p> <ul style="list-style-type: none"> • An 80 rated fire extinguisher will cover 15.25 square meters • A 40 rated fire extinguisher will cover 9.15 square meters. Therefore two 40 rated fire extinguishers will cover the same area as one 80 rated fire extinguisher • The B:C represents the type of fires: "B" fire is for flammable liquids, while a "C" fire is for electrical
Bioremediation Product	Any form of nutrients, bacteria or enzymes that when added and mixed with the soil, will enhance the biological breakdown of petroleum hydrocarbon contaminated soil.
Breakaway valve	This product is intended for small leaks, drips and spills that are below the reportable quantities and not impacting surface water or groundwater.
Collision Protection	An in-line device containing a flutter valve that, upon accidental separation of the hose, will automatically close and prevent fuel from being discharged
Enclosed space	A barrier sufficient to alert the operator and prevent accidental damage to the container and release of the product.
Equivalent Spill Response Equipment	<p>Any structure enclosed by three sides</p> <p>In an attempt to provide some flexibility in the minimum requirements of a spill kit, the following equivalent standards are listed. The intention of this equivalent list is to provide alternatives where conditions might be warranted:</p> <ul style="list-style-type: none"> ○ 5 Absorbent pads (for petroleum hydrocarbons) = 2L of Sphag Sorb (peat moss) ○ 5 Absorbent pads (for antifreeze) = 2L of Sphag Sorb (peat moss) ○ 5 Absorbent pads (for solvents) = 2L of Sphag Sorb (peat moss) ○ Plug-N-Dike = Bentonite clay or "drillers clay" ○ One large heavy duty plastic bag = One five (5) gallon pail ○ Containment boom = log boom with tarp "skirt"



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Table #6 Definition of Terms

<p>Equivalent Level of Safety (Permit) issued by Transport Canada</p>	<p>Permit No.: SH7544 (Ren 5) Permit Holder: The valid members of The Forest Products Association of Canada Mode of Transport: Road Issue Date: Expiry Date:</p> <p style="text-align: center;">CONDITIONS</p> <p>This Permit for Equivalent Level of Safety authorizes the valid members of The Forest Products Association of Canada to handle, offer for transport and transport and authorizes any person to handle or transport on behalf of the permit holder, by road vehicle, dangerous goods that are Class 3, Packing Group II or Packing Group III in means of containment that do not comply with Part 5 of the Transportation of Dangerous Goods (TDG) Regulations if:</p> <p>(a) The means of containment:</p> <p>(i) is not intended for the transportation of dangerous goods and the presence of dangerous goods is due only to the use of the means of containment for the processing, storage, or use of the dangerous goods at fixed locations;</p> <p>(ii) prior to moving, is emptied to the maximum extent possible, and the residual amount of the dangerous goods never exceeds the lesser of the following volume in content when in transport:</p> <p>(A) 500 liters or (B) 5% of the capacity of the means of containment.</p> <p>(iii) is designed, constructed, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of dangerous goods that could endanger public safety; and,</p> <p>(iv) when inverted, will not release dangerous goods;</p> <p>(b) The means of containment is loaded and secured on the means of transport in such a way as to prevent, under normal conditions of transport, damage to the means of containment or to the means of transport that could lead to an accidental release of the dangerous goods;</p> <p>(c) The permanent shipping document that accompanies the dangerous goods includes the following information legibly and indelibly printed: "Dangerous Goods Permit No. _____ by road vehicle or its French equivalent;</p> <p>(d) Equipment used to heat and circulate production fluids such as petroleum crude oil, in oilfield applications are excluded from the application of this permit.</p> <p><i>Note:</i> The issuance of this Permit for Equivalent Level of Safety in no way reduces the permit holder's responsibility to comply with any other requirements of the <i>Transportation of Dangerous Goods Regulations</i> not specifically addressed in this Permit.</p>
<p>Fuel Storage Facility</p>	<p>Any location where fuel in excess of 500 litres is stored on a BCTS tenure</p>
<p>Large Means of Containment</p>	<p>A means of containment with a capacity greater than 450 litres. For example, a highway cargo tank, large slip tank etc.</p>



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Table #6 Definition of Terms

Material Safety Data Sheets (MSDS)	MSDS--are summary documents that provide information about the hazards of a product and advice about safety precautions under the Workplace Hazardous Materials Information System (WHMIS).
Plug-N-Dike	Commercial product name for bentonite clay also known as "drillers clay". It is not the intention for BCTS to endorse a single product name over other products of a similar and equal nature.
Small Means of Containment	A means of containment with a capacity less than or equal to <230 litres. For example, a drum, jerry cans, or intermediate bulk container.
Spec Tank	A "Spec Tank" or "Specification Tank" is a means of containment that complies with one of the specifications set out in one of the Safety Standards referred to in Part 5 of the TDG regulations. An example of a "spec tank" would be a TC406 highway tank meeting all of the TC406 specification requirements described in CSA Standard B620-03 <i>Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods</i> .
TC	Transport Canada: Federal Agency that oversees the transportation of dangerous goods on land, sea and air
TDG	Transportation of Dangerous Goods Regulation
ULC	Underwriters Laboratory of Canada (Engineering Standards) Mobile tanks built to ULC Standards (142.13) have been replaced by the Canadian General Standards Board (CGSB) Standard (43.146)
UN Number	United Nations Number: Used to identify a specific dangerous good. Diesel: UN 1202; Gasoline UN 1203
Workplace Hazardous Materials Information System (WHMIS) Labelling & product identification	Hazardous products in the workplace must be identified through one of the following means: <ul style="list-style-type: none"> • Supplier label • Workplace Label (attached when no supplier label was provided or the supplier label is lost or removed) <ul style="list-style-type: none"> ○ Name of the product ○ Safety precautions ○ Reference to SDS • Product Identifier (name of the product, color coding, etc.)

TRANSPORT_CANADA CONTACT INFORMATION

Transport Canada welcomes your questions, comments and suggestions. You can contact them by e-mail, mail or telephone and they will address your concerns as quickly as possible. See website link below for details!
<http://www.tc.gc.ca/eng/contact-us.htm>

Leak Test and Inspection Facilities for Highway and TC Portable Tanks, (Registered per Standard CSA B620) can be found at the Transport Canada website link below!
<http://wwwapps.tc.gc.ca/saf-sec-sur/3/fdr-rici/highway/tanks.aspx>

Table #7

**SPILL KIT
(Minimum Requirements)**

<p>In Equipment / Machinery (excavators, skidders) Spill kits must be present on equipment, (appropriate for type and potential size of spill).</p> <ul style="list-style-type: none"> • Spill kits must include: <ul style="list-style-type: none"> ○ One large heavy duty plastic bag or other suitable container ○ Absorbent pads (or equivalent absorbent material), appropriate for the type of spill, ○ Personal protective safety gear as required for the type of spill 	<p>Vehicles carrying auxiliary fuel (e.g. pick-up truck box tanks or multiple small containers) Spill kits must be present in vehicles transporting and dispensing fuels</p> <ul style="list-style-type: none"> • Spill kits must include a minimum of: <ul style="list-style-type: none"> ○ 3 - Heavy duty plastic bags or suitable container(s), ○ 10 - absorbent pads (or equivalent absorbent material) appropriate for the type of spill, ○ 3 – 3”x 48” absorbent booms/ socks, ○ bioremediation product, ○ One shovel ○ A container of emergency tank sealant (i.e. Plug-N-Dike, Seal-it or equivalent) • Personal protective safety gear as required for the type of spill 	<p>Stationary or Mobile Fuel Storage & dispensing (tanks or multiple-drum caches) Spill kits must be present at points where fuel is dispensed.</p> <ul style="list-style-type: none"> • Spill kits must include a minimum of: <ul style="list-style-type: none"> ○ Five large heavy duty plastic bags, or one open topped containment drum (or equivalent), ○ 20 absorbent pads (or equivalent absorbent material) appropriate for the type of spill, ○ 6 – 3”x 48” absorbent booms/ socks, ○ Two 10’ linkable marine booms (if near marine operations), ○ bioremediation product, ○ One container of emergency tank sealant (i.e. Plug-N-Dike or equivalent), ○ One shovel • Personal protective safety gear as required for the type of spill
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STOP WORK

and contact your project supervisor and the BCTS representative if:

- You are uncertain of the project plan, your responsibilities, or the location of hazardous/sensitive areas.
- A previously unidentified resource feature, resource value (e.g. cultural) or sensitive area is found.
- You experience unfavorable weather or site conditions that could cause environmental damage.
- You observe conditions that have the potential for immediate environmental damage.
- You believe the project plan will not work.

BC Timber Sales Fuel Handling

**A pictorial of key requirements of
the BCTS FUEL HANDLING
ENVIRONMENTAL FIELD
PROCEDURE 06**

BCTS
BC Timber Sales

Fuel Handling

Purpose

- The purpose of this pictorial is to support the BCTS EMS Fuel Handling Environmental Field Procedure #06, (EFP 06) by displaying requirements of commonly utilized tanks by BCTS Licensees, Permittees and Contractors (LPC's) to help prevent and minimize impacts of fuel on the environment.
- EFP 06 brings together legislative requirements, forest industry standards and best management practices as it relates to fuel handling, storage and transportation.
- EFP 06 applies to all BCTS LPC's and their workers involved in fuel handling within the scope of the EMS Program.

Key Sections of EFP-06

- **Truck Box (Slip Tanks) and other large portable tanks--230 to 3000 liters (EFP-06 Table #2 and #3)**
 - non-specification tanks can only be used for diesel in the 230L to 450L volume range and;
 - tanks for diesel and gasoline in the >450L to 3000L volume range must be specification containers and tested by a Transport Canada Registered Facility every 5 years;
- **Large (double walled) Stationary Skid Tanks**
 - EFP-06 Table #5
- **Spill Kits**
 - EFP-06 Table #7

Truck Box Slip Tanks



Large Double Walled Stationary Skid Tanks



Positive Containment Check



Vacuum Gauge



Dip Stick Port

TDG, WHMIS and Safety Labels



Drip Containment Options



**Spill Kit
Fire Extinguisher(s)**

Guard Log

ULC-S601 Spec Plate

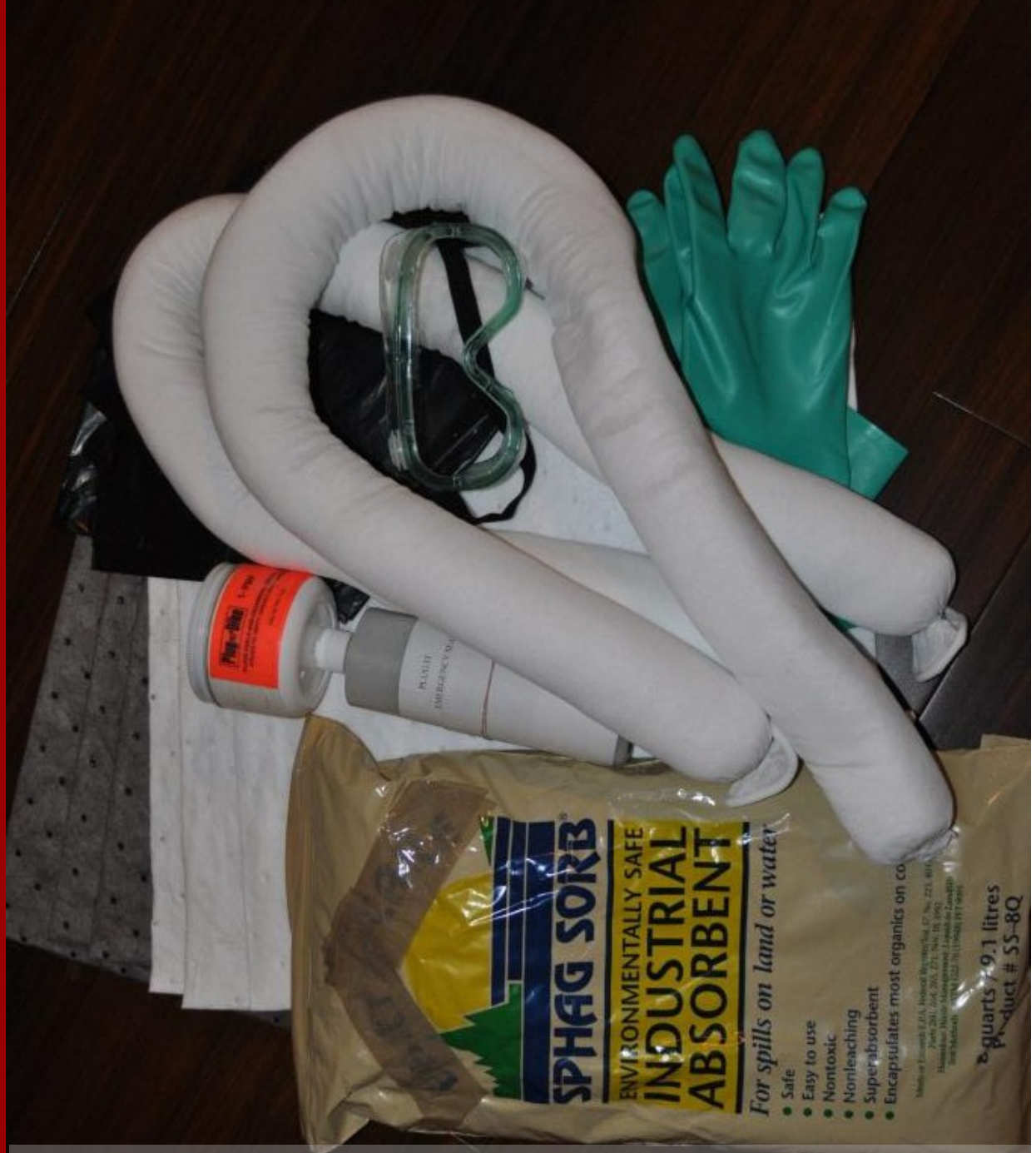


Spill Kits

Spill kits must be present in all equipment, vehicles transporting and dispensing fuel, near stationary tanks and mobile fuel storage and dispensing areas.

- Spill kits must include a minimum of:
 - heavy duty plastic bags or suitable container(s),
 - absorbent pads (or equivalent absorbent material) appropriate for the type of spill,
 - absorbent booms/ socks,
 - bioremediation product,
 - a shovel
 - a container of emergency tank sealant (i.e. Plug-N-Dike, Seal-it or equivalent)
- personal protective safety gear as required for the type of spill

See Fuel Handling Environmental Field Procedure 06, (Table #7) for details regarding spill kit requirements.



Fuel Handling

Conclusion

- Conformance to this EFP pictorial will assist LPC's to achieve a balance between their operational needs and requirements of the BCTS EMS-EFP 06 to help reduce significant risk to the environment.
- For a copy of this fuel management pictorial please contact your local BCTS Certification Standards Officer.



FUEL HANDLING SUPPLEMENT “Risk assessment and additional measures”

FOR INFORMATION ONLY

Purpose

This Fuel Handling Supplement is a guide used in conjunction with Fuel Handling EFP-06 to promote appropriate fuel handling within the scope of BCTS EMS Program. The supplement includes a risk assessment method that identifies associated risks to various fuel management situations and provides additional preventative and control measures for BCTS clients to consider in reducing risks.

TABLE A. RISK ASSESSMENT

Risk Identification Numerical Value	HIGH 3	MEDIUM 2	LOW 1	Assigned Numerical Value
Environmental Factors				
Distance to nearest watercourse or water body	< 50m	50m-100m	> 100m	
Soil characteristics at or around the Fuel Facility	Porous or unknown	Semi-porous	Non-porous (i.e. clay/bedrock)	
Terrain slope at or around the Fuel Facility	> 6% slope	2%-6% slope	< 2% slope	
Operational Factors				
Site designation or description	High traffic logging road (Main Line)	Low traffic logging road (Side Spur)	No through traffic logging road	
Duration of operation of the Fuel Facility	> 6 days	2-6 days	< 2 days	
Volume of fuel stored at the Fuel Facility	>4500L	500L-4500L	< 500L	
Number of times the Fuel Facility is accessed	> 12x per day	6-12x per day	< 6x per day	
Amount of traffic around the Fuel Facility	> 15 personnel on site	5-15 personnel on site	< 5 personnel on site	
Prevention & Preparedness Factors				
Distance to additional spill response cache or equipment	> 60 minutes	15-60 minutes	< 15 minutes	
Additional Spill Control measures	Tank with no secondary containment	Tank with secondary containment	Tank with secondary containment and additional spill controls (i.e. berms, sloped to a sump)	
Risk Value	(Add the Assigned Numerical Values)			

TABLE B. RISK RANKING: LOW

Numerical Value	Risk Ranking	Preventative Measures	Control Measures
<12	LOW	<ul style="list-style-type: none"> ▪ To extend the life of a mobile tank: Use a rubber mat or a piece of plywood between the mobile tank and the truck box or support system ▪ To minimize spillage and leakage from the fill cap: Use a stem pipe to extend the filling bung of the mobile tank 	<ul style="list-style-type: none"> ▪ Must meet minimum Spill Kit Requirements ▪ Locating containers or caches where potential spills would not reach waterways or watercourses



FUEL HANDLING SUPPLEMENT “Risk assessment and additional measures” FOR INFORMATION ONLY

TABLE C. RISK RANKING: MEDIUM

Numerical Value	Risk Ranking	Preventative Measures	Control Measures
12-23	MEDIUM	<p><u>TAKE IMMEDIATE PREVENTATIVE MEASURES:</u></p> <ul style="list-style-type: none"> ▪ Re-assess all the risk factors to determine if one or more ratings can be reduced ▪ Re-assess the environmental impact that a spill may have on the environment ▪ Review additional spill response equipment that may be required for containment and recovery ▪ Review the BCTS Fuel Handling Environmental Field Procedure #6 to ensure procedures address the risk factors. 	<p><u>TAKE IMMEDIATE CONTROL MEASURES:</u></p> <ul style="list-style-type: none"> ▪ Moving fuel storage to a lower risk location ▪ Add secondary containment or double walled containers <p><u>STORE ADDITIONAL SPILL CONTROL EQUIPMENT</u></p> <ul style="list-style-type: none"> ▪ Tarps for tarp containment ▪ Plywood for culvert blocks <p><u>ENSURE COLLISION PROTECTION:</u></p> <ul style="list-style-type: none"> ▪ A barrier sufficient to alert the operator and prevent accidental damage to the container and release of the product or, ▪ Placement of the container in a location where the potential of collision has been minimized or eliminated <p><u>SPILL PREPAREDNESS:</u></p> <ul style="list-style-type: none"> ▪ Complete an Environmental Emergency Response Plan (ERP) at the start of every operation ▪ Conduct an Emergency Response Drill with the crew, (see BCTS guide) and record on Checklist CHK- 010.

TABLE D. RISK RANKING: HIGH

Numerical Value	Risk Ranking	Preventative Measures	Control Measures
>23	HIGH	<p><u>TAKE IMMEDIATE PREVENTION MEASURES:</u></p> <ul style="list-style-type: none"> ▪ Re-assess all the risk factors to determine if one or more ratings can be reduced ▪ Re-assess the environmental impact that a spill may have on the environment and implement preventative measures ▪ Review the BCTS Fuel Handling Environmental Field Procedure 06 to ensure procedures address the risk factors. ▪ Be Prepared! Store additional spill response equipment on-site for containment and recovery ▪ Complete an Environmental Emergency Response Plan (ERP) at the start of every operation ▪ Conduct an Emergency Response Drill with the crew, (see BCTS guide) and record on Checklist CHK- 010. 	<p><u>TAKE IMMEDIATE CONTROL MEASURES:</u></p> <ul style="list-style-type: none"> ▪ Move the fuel storage to a lower risk location ▪ Add secondary containment or double-walled containers ▪ Review Spill Response awareness and preparedness <p><u>STORE ADDITIONAL SPILL CONTROL EQUIPMENT</u></p> <ul style="list-style-type: none"> ▪ Tarps for tarp containment ▪ Plywood for culvert blocks ▪ Sandbags and PVC pipe for underflow containment ▪ Sandbags for diversions and upstream eddy containment <p><u>ENSURE COLLISION PROTECTION:</u></p> <ul style="list-style-type: none"> ▪ A barrier sufficient to alert the operator and prevent accidental damage to the container and release of the product or, ▪ Placement of the container in a location where the potential of collision has been minimized or eliminated

BCTS Supplement Guide to Minimizing Soil Disturbance

This supplement has been developed in support of the BCTS Kootenay Business Area Environmental Management System. It is to be used solely as a reference guide and is not intended to replace BCTS Site Plans. BCTS staff, Employees, Contractors and Licensees is asked to ensure that a Prewrite has been completed prior to the commencement of work and to ensure that they are familiar with both the Site Plans and the applicable Environmental Field Procedures.

What is Soil Disturbance?

- Includes compaction, rutting, gouging, scalping and the construction of trails, roads, landings, pits and quarries.
- It is caused mainly by moving machinery and logs
- Excessive soil disturbance is that which is beyond what is necessary under the right combination of equipment and site conditions. This is caused by excessive random (unplanned) traffic over sensitive terrain or under wet conditions, commencing or continuing to work in poor (wet) soil conditions, or by heavily concentrated activity outside of road side work areas. This is to be avoided through proper planning, familiarity with Site Plans and recognizing these situations before they become problems.

Compaction	Rutting
<p>Keys to identification:</p> <p>Caused by felling, skidding, and forwarding routes with repeat traffic. Compacted mineral soil, puddled mineral soil (soil that has liquefied then hardens), and compacted deposits of slash and organic debris.</p> <p><i>Compacted soils reduce drainage, aeration and reduce root growth and forest productivity. Also reduces water infiltration which can lead to off-site drainage problems.</i></p>	<p>Keys to identification:</p> <p>Ruts or impressions into the soil from wheels and tracks</p> <p>On sensitive soils these are of concern when only 5 cm deep</p> <p>On all sites be concerned about ruts that are, 2 m long and over 15 cm deep.</p> <p><i>Rutting can occur from just one pass and cause compaction which decreases drainage, aeration and damage shallow feeder roots</i></p>
Gouging, Scalping and Scraping	Trails (Bladed or Excavated)
<p>Keys to identification:</p> <p>Forest floor (surface organic layer) has been removed, exposing the mineral soil, or where organics are absent, top soil has been excavated 5 cm or more. Mainly a concern if over 30 cm deep or to bedrock, or wider than 1m.</p> <p><i>Gouging and Scalping displaces nutrients and increases erosion potential as the topsoil contains large reserves of nutrients and contains the majority of roots.</i></p>	<p>Keys to identification:</p> <p>Trails excavated into side slopes, either along the contour of the slope or at an angle to the slope.</p> <p><i>Excavation exposes subsurface seepage and creates drainage paths during runoff events (thunderstorms). Soils under trails become very compacted. Excavated cuts and fills expose subsoils with few nutrients and steep, exposed surfaces that can erode .and deliver sediments to streams.</i></p>

General Soil Disturbance Guidelines

- **PREWORKS:** Review Site Plan soil disturbance limits. Identify sensitive or difficult harvesting areas during Prewrite. And areas identified with sensitive soils, low lying drainage and receiving areas
- **PLAN:** Identify and plan felling and skidding routes ahead of time. Designating main trails, a herring bone pattern may reduce overall trafficked area. Consider manual treatments such as hand felling, especially in ecologically sensitive areas.
- **WEIGHT:** Reduce loads carried by logging equipment
- **DEPRESSIONS:** and wetter more sensitive areas, Avoid traveling through these areas, if unavoidable, designate and design a crossing to reduce impacts.
- **ORGANIC SOILS:** Avoid disturbing predominantly organic wet soils. Utilize slash for traction and padding (puncheon). Maintain soil organic matter, litter, and slash in place when harvesting.
- **TURNING:** Creates the most disturbance off main trails. Avoid sharp turns with loaded equipment, especially at the base of hills. Use trails and road surfaces to turn where possible.
- **SOIL MOISTURE:** Monitor soil moisture and frost. Dry or frozen soils do not compact as easily. Soils lose strength as the moisture level increases
- **GROUND PRESSURE:** Use low ground pressure equipment
- **SLASH PLACEMENT:** Avoid piling slash on good high spots and other good growing sites
- **MONITOR WEATHER:** Shift harvest operations to upland areas of a timber sale if weather conditions deteriorate. Shut down when soil disturbance objectives are threatened.

Contact your Supervisor Should you feel excessive Soil Disturbance has occurred

Operating Techniques

Excavated or Bladed Trails

Where bladed or excavated trails are planned:

- Keep the excavated area as small as necessary
- Avoid excavating the cut slope into the subsoil layers. Maintain organic debris and productive soil for re-contouring and rehabilitation later. Scatter slash and organic debris onto exposed mineral soil.
- Use excavators to build trails, where possible
- Maintain the natural drainage pattern for all identifiable watercourses
- Where conditions change over the length of the trail, be prepared to modify techniques
- Control drainage and erosion on excavated trails to reduce the likelihood of landslides, mass wasting events or stream sedimentation
- Where the forest floor is sufficiently thick, remove it separately from the topsoil and stockpile in mounds. Avoid mixing this material with unproductive soils
- Where forest floors are too thin to be easily separated, keep these materials with salvaged topsoil
- When building trail sections with deeper cuts and fills, place the excavated material down in the fill bank in the following order: topsoil, intermediate soils, then subsoils on top. The outer track of the running surface will run on the excavated subsoil, preserving the topsoil at the bottom of the fill.
- To minimize the amount of side cast required and for rehabilitation, use stumps and logs to create a crib to fill.
- Long machine trails on steep slopes should be placed so there are grade breaks and run-offs to prevent water channeling.

Winter Harvesting

When harvesting in Winter:

- Use compacted snow trails from harvesting equipment to skid or forward. Skid one or two turns in sensitive areas and then allow frost to penetrate compacted snow. Soil frozen to a depth of 15 cm offers maximum strength and protection.
- Soil frost begins to disappear after snowfall covers the soil and/or night temperatures stay above freezing for three or four days.
- When building excavated trails in the snow, avoid piling topsoil on top of snow or mixing the two.
- When building excavated trails in snow, excavate the snow on the inside, compact it on top of the snow on the fill side, cut out the soil on the inside and lay it on top of the snow and compact it. Cover this with snow and compact it to form the running surface. Operators rehabilitating the trail will recognize the bottom of the stockpile is at the lower layer of snow.

Rehabilitation (Debuilding)

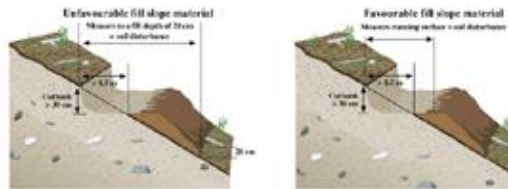
When building and rehabilitating bladed trails along a hill slope:

- Rehabilitation and mitigation should be conducted under the best soil and weather conditions possible.
- Outslope the trail surfaces to avoid collecting water. Decompact the running surface to a greater depth on the outer portion of the trail to avoid creating a subsurface water trap next to the cut.
- Decompact all compacted soils on running surfaces.
- Restore slopes to natural contours. Place slash on exposed soils.
- Deconstruct all corduroyed trails (puncheon) and scatter slash material away from drainage courses
- Ruts may be rehabilitated by restoring natural drainage, loosening the soil at the bottom of the rut and gently distributing berm material into the depression. Create an even soil layer for rooting while not exposing poor soils.
- Avoid mixing woody debris with top soil. Avoid handling top soil under wet conditions. When stockpiling top soil, develop standard methods to aid in finding and re-using the material. Avoid burying top soil with slash and protect it from water runoff and traffic. Avoid stockpiling top soil in wet areas.
- Cover exposed subsoils as well as organic matter with scattered slash to provide protection from erosion.

Contact your Supervisor Should you feel excessive Soil Disturbance has occurred

BCTS Supplement Soil Disturbance Definitions

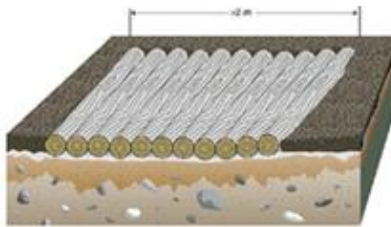
Excavated or bladed trails



Excavated or bladed trails are constructed trails that have:

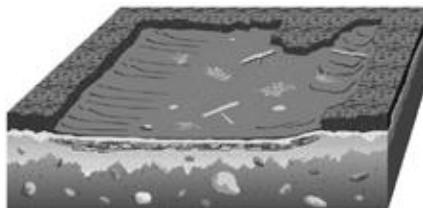
- a mineral soil cutbank height greater than 30 cm, and
- an excavated width greater than 1.5 m.

Corduoyed trails



Corduoyed trails are constructed using logs and woody debris placed side by side to form a surface greater than 2 m in length and capable of supporting equipment traffic.

Compacted areas

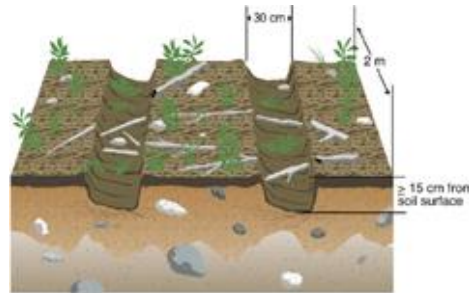


Compacted areas are areas on which there is evidence of compaction at the survey point and on 100% of a portion that is both greater than 100 m² in area and greater than 5 m wide.

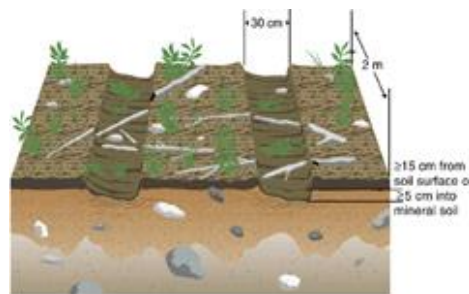
Can also be compacted mineral soil, puddle mineral soil, and compacted slash and organic debris. Mineral soil compaction compare to condition of adjacent undisturbed soil.

Contact your Supervisor Should you feel excessive Soil Disturbance has occurred

Dispersed trail: wheel or track ruts



Wheel or track ruts 15cm deep X 30cm wide and 2m long are counted as soil disturbance on all sites.



Wheel or track ruts 5cm deep X 30cm wide X 2m long are counted as soil disturbance on sites with high or very high soil compaction hazard or where compaction hazard has not been assessed.

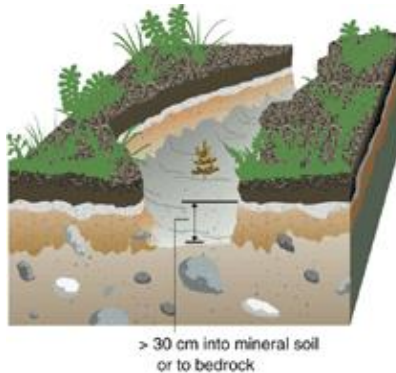
Dispersed trail: repeated machine traffic



Repeated machine traffic must be counted as soil disturbance where there is 100% evidence of compaction in a 1m X 2m area on all sites, except those with low compaction hazard. Where the compaction hazard has not been assessed, repeated machine traffic must be counted as soil disturbance.

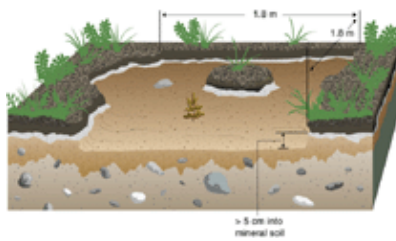
Contact your Supervisor Should you feel excessive Soil Disturbance has occurred

Deep gouges



Deep gouges are excavations into mineral soil that are deeper than 30 cm or to bedrock at the survey point.

Wide gouges



Wide gouges are excavations into mineral soil that are a) deeper than 5 cm at the survey point and b) deeper than 5 cm or to bedrock, on at least 80% of an area 1.8 x 1.8 m.

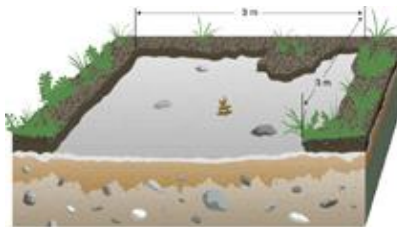
Long gouges



Long gouges are excavations into mineral soil that are a) deeper than 5 cm at the survey point and b) deeper than 5 cm or to bedrock on 100% of an area 1 x 3 m.

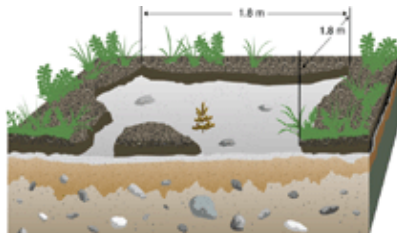
Contact your Supervisor Should you feel excessive Soil Disturbance has occurred

Very wide scalps



Very wide scalps are areas where the forest floor has been removed at the survey point and from over 80% of an area 3 x 3 m.

Wide scalps



Wide scalps are areas where the forest floor has been removed at the survey point and from over 80% of an area 1.8 x 1.8 m.

Contact your Supervisor Should you feel excessive Soil Disturbance has occurred

Purpose: This guide is intended to assist BCTS clients and staff in recognizing wet weather and ground conditions that may impact worker safety, operations, environment and damage to road systems. The guide also provides suggested best practices and recommends operational shut down conditions.

The primary control mechanism to protect water quality is through the operational controls such as Environmental Field Procedures (EFPs) of the Environmental Management System (EMS). The EMS plays a significant role in maintaining water quality as it requires the licensees and contractors to manage erosion and sediment delivery into water features appropriately.

The following are related operational requirements identified in BCTS's EFPs #04 & #05 that apply to BCTS harvesting and road management activities:

- Operate during favourable weather and site conditions
- Implement strategies to minimize impacts to soil productivity and water quality
- Avoid excessive soil disturbance
- Utilize sediment control measures i.e. (silt fences, hay bales, rock armouring, swales, water bars or sediment ponds as appropriate)
- Clean introduced debris from ditches, streams and culverts on an on-going basis.



STOP WORK and contact your project supervisor and the BCTS representative if:

- You experience unfavourable weather or site conditions that could cause environmental damage.
- You observe conditions that have the potential for immediate environmental damage.



Environmental indicators for work shutdown & evacuation of the worksite for safety purposes include:

1. Sudden muddy water in creeks (especially in gullies)
2. Sudden lack of flow in creeks during wet weather
3. Cracks appearing in the soil
4. Sloughs $\geq 1\text{ m} \times 1\text{ m}$ occurring in the soil
5. Anchor stumps pulling out of wet soil
6. Landslides occurring in the general area, or sounds of landslides occurring
7. Sloughs in road cuts, especially during road construction or deactivation



Harvesting and Road Activities <i>Also refer to related requirements outlined in BCTS EFP #04 Roads, Bridges and Major Culverts & EFP #05 Harvesting</i>	
Activity	Recommended Practices
<p>Trail Construction (this includes pilot trails for during road construction)</p>	<ul style="list-style-type: none"> ➤ Locate skid and pilot trails in areas that minimize excavation where possible (avoid steep cuts, seeps, and wet areas). ➤ Maintain drainage concurrently with skid trail or pilot trail construction by utilizing cross-ditches/swale, skid culverts/log bundles including wood puncheon at all seeps and water courses (NCDs and classified water courses). Highly erodible materials may require temporary rock armouring. Water bars may be necessary on steeper grades especially when rutting occurs. ➤ Install cross-ditches/swales and water bars during periods of inactivity. ➤ Utilize sediment control measures where necessary at key control points. ➤ Locate pilot trails in areas that minimize excavation and optimizes material use, where possible (avoid steep cuts, seeps, and wet areas). Where possible, do not deviate from pre-located road locations. ➤ In areas of significant wet ground, pre-construct this section with excavator (i.e. install geotextile, rock ballast etc.) may be necessary. ➤ Prior to any excavations on wet ground, consider utilizing techniques to minimize excessive disturbance such as using geotextile matting, puncheon, or rock ballast etc.) Have a plan prior to starting. ➤ Ensure that ruts are cross ditched to allow drainage; ➤ Maintain natural drainage concurrent with trail construction ➤ If surfaces become rutted to the extent that water begins to pool or road surfaces become saturated from a lack of drainage, install drainage control such as cross-ditches, swales and/or water bars. ➤ Back blade to remove ruts and hasten dry material when conditions allow
	<p>Recommended Shut Down Conditions</p> <ol style="list-style-type: none"> 1. Ground based operations should cease if the following conditions develop: <ul style="list-style-type: none"> • Water is transporting visible siltation or sediment towards streams, • Excessive rutting of 15cm or greater depth is occurring. 2. Operations should be modified or suspended where there is abundant hill slope runoff i.e. during spring freshet or periods of high runoff from prolonged heavy precipitation. 3. Suspend operations if wet weather causes excessive erosion and rutting particularly to the extent where sediment flow is noticeable or when construction material (soils/parent material) loses its ability to hold its shape.





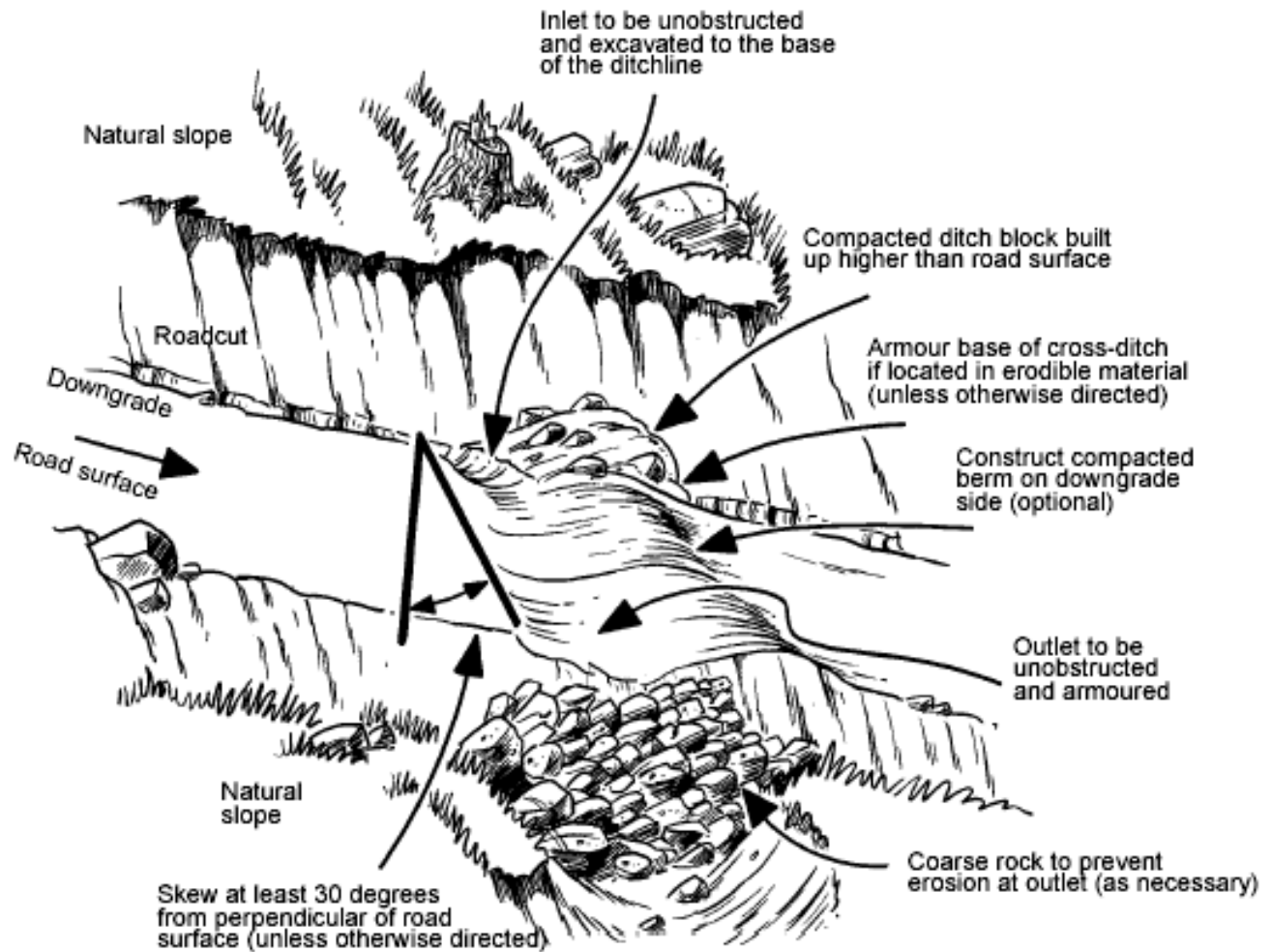
Activity	Recommended Practices	Recommended Shut Down Conditions
Ground Skidding	<ul style="list-style-type: none"> ➤ Machine use should be limited to areas where excessive scour, rutting, or compaction is avoidable. This would generally restrict machine use from areas of moderately steep slopes as well as any localized areas of wet, soft, or very loose soils. This is intended to reduce the likelihood of concentrated or redirected drainage, as well as shallow subsurface water interception. ➤ Maintain drainage features clean out introduce debris concurrent with operations. ➤ Utilize sediment control measures where necessary at key control points. 	<ol style="list-style-type: none"> 1. Ground based operations should cease if the following conditions develop: <ul style="list-style-type: none"> • Water is transporting visible siltation or sediment towards streams, • Excessive rutting of 15cm or greater depth is occurring.
Cable Skidding	<ul style="list-style-type: none"> ➤ Fall, skid, and yard away from all streams and NCDs where practicable. ➤ Avoid cross-stream yarding and keep all riparian features clear of debris. ➤ Where possible, avoid excessive repetitive scouring. ➤ Maintain drainage features clean out introduce debris concurrent with operations. ➤ Utilize sediment control measures at key control points. 	<ol style="list-style-type: none"> 2. Operations should be modified or suspended where there is abundant hill slope runoff i.e. during spring freshet or periods of high runoff from prolonged heavy precipitation. 3. Suspend operations if wet weather causes excessive erosion and rutting particularly to the extent where sediment flow is noticeable or when construction material (soils/parent material) loses its ability to hold its shape.
Hauling and Road Use	<ul style="list-style-type: none"> ➤ Operate during favourable weather and site conditions ➤ If hauling during marginal conditions prolong haul window and minimize road damage by daily tending of the road surface. ➤ Utilize sediment control measures at key control points ➤ Minimize accumulation of moisture to road surface, install temporary waterbars (well skewed) and spot surfacing of short sections ➤ Operate during favourable weather and site conditions 	<ol style="list-style-type: none"> 1. Road use should be suspended if: <ul style="list-style-type: none"> • Road surface runoff is transporting visible siltation or sediment into streams, • Road surface becomes soupy • Ruts become sloppy and deformed <p>Acceptable depth of ruts is subject to discretion depending on site conditions. In general, pick-up truck access should be un-impaired,</p>
Road Maintenance, Deactivation	<p>Schedule road works required in fine textured soils during dry weather condition i.e.: summer/fall dry.</p>	<p>Material does not hold intended shape or achieve desired compaction when handled Proceed with grading only under dry or slightly damp conditions.</p>

Kootenay Business Area Road Deactivation Guidance Document

The intent of deactivation is to place the road in a self-maintaining state that will indefinitely protect adjacent resources at risk.

The purpose of a cross-ditch is to intercept road surface and ditchline water and convey it across the road onto stable, non-erodible slopes below the road.

Diagram of cross-ditch installation across an intact road.



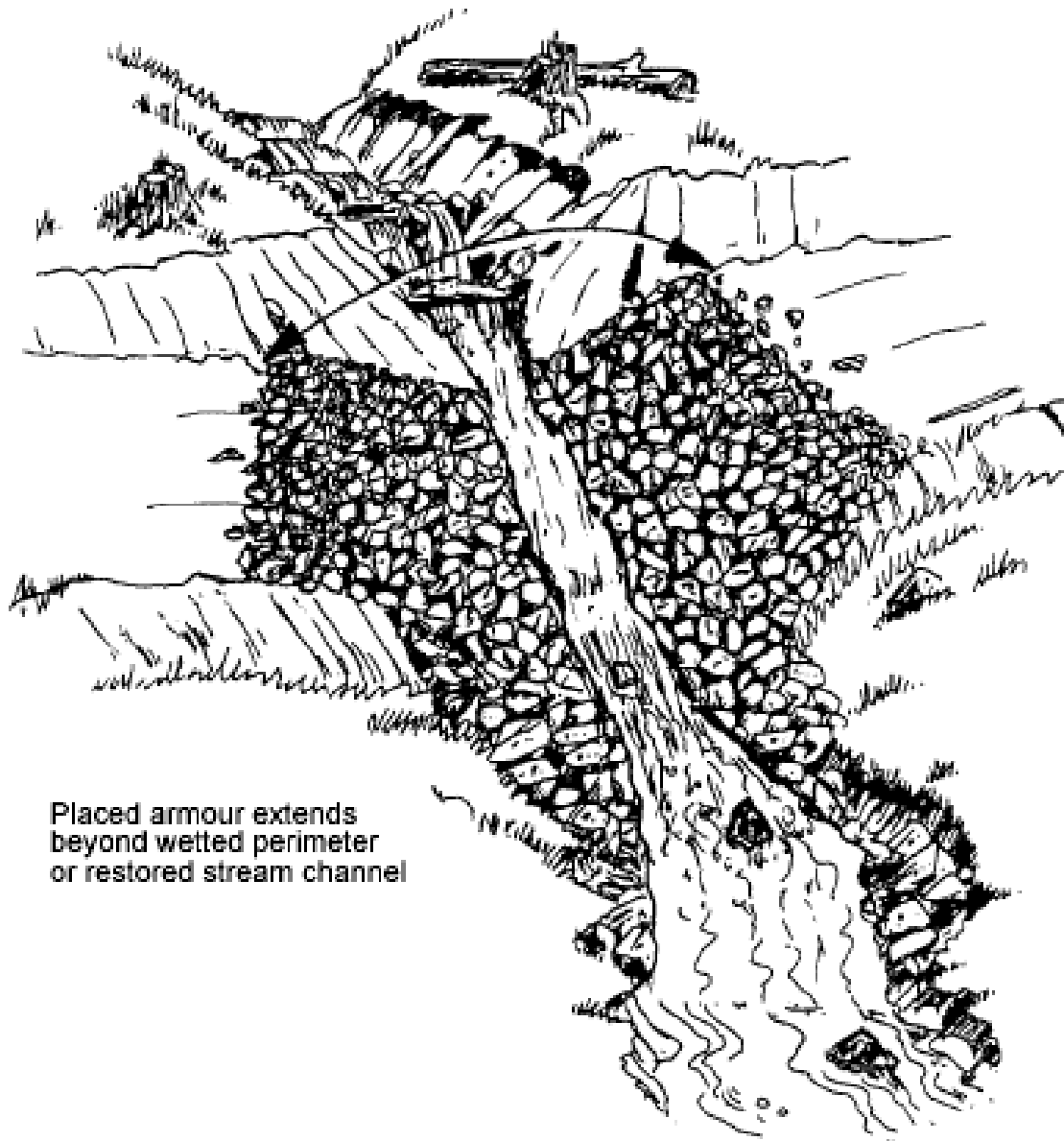
A well-compacted ditch block will be installed immediately downgrade of the cross-ditch inlet. The ditch block is usually higher than the road surface. The ditch block should be non-erodible, relatively impermeable, and large enough to divert all expected flows into the cross-ditch. Where ditchwater converges at low points in the road, no ditch block or berm is required, as the cross-ditch should be constructed as a broad gentle swale.

- Armour the base of the cross-ditch if erosion or rutting of the subgrade is expected to cause a problem for future road access. Armour the outlet of the cross-ditch, unless noted in the prescriptions. Size and placement of the armour will depend on the anticipated flows and downstream consequences.

- Use angular rock large enough to protect exposed soil, but small enough so as not to divert or obstruct flows. Where coarse rock is unavailable, other methods of protecting the outlet area may include revegetation, erosion control mats, sandbags, soil bioengineering, or appropriately sized and placed woody debris.
- The resulting cross ditch or ford will allow for easy 4 wheel drive, pickup truck access.

A ford is a dip in a road constructed to cross a perennial or ephemeral stream. It is usually designed and built as a permanent feature during original road construction, or road deactivation

Example of a ford installed on a non-fish-bearing stream.



FPIinnovations prepared this guide in order to provide forest workers with information on purpose built skid trails on steep slopes. FPIinnovations worked in close cooperation with BC Timber Sales, Kootenay Business Area during the development of this guide. Reference material for this guide included The Construction and Rehabilitation of Purpose-Built Skid Trails on Steep Slopes: Discussion Paper; FPIinnovations Technical Report No. 3 (March 2015) by C. Gillies.

Photo's courtesy of BCTS

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The construction and rehabilitation of purpose built skid trails on steep slopes

A PRACTICAL GUIDE FOR FOREST WORKERS

fpinnovations.ca

REDUCING SITE IMPACTS

Constructing purpose-built skid trails to extract timber from steep slope harvest areas needs to be done with careful construction practices and with rehabilitation in mind. This guide will help forest workers choose appropriate construction and rehabilitation methods which aim to address soil protection and water management in an environmentally sensitive manner.

Best Practices and Sustainability

The goal is to minimize soil disturbance, rehabilitate disturbed areas, and maintain / restore subsurface and surface drainage.

Forest workers need to choose harvesting strategies that minimize soil disturbance and maintain the biological and physical function of forest soils. Long-term soil productivity, hydrologic function, sediment generation, and the stability of current and rehabilitated trails are all key aspects to focus efforts towards, in order to sustain a healthy and productive forest ecosystem / productive forest land base.

Plan your work

Purpose-built skid trails have historically been used to aid ground-based harvesting on steep side slopes, specifically to accommodate the extraction of timber. The following should be considered during construction:

- Use appropriate type and size of equipment.
- The amount of newly constructed trails should be minimized.
- Use existing / historic trails when appropriate.
- Utilize professional reports when available (terrain stability assessment, hydrology, soil, etc.)
- Constructed trails should not result in any concentration or redirection of runoff. As well, avoid locating trails where there is a risk of damaging any existing drainage structures.
- Trails should be constructed with a plan for rehabilitation; trails should be fully rehabilitated upon completion of harvesting and prior to spring runoff (not left to overwinter).
- As a best management practice, plan to rehabilitate trails concurrent with harvesting such as when a logical unit / area is complete.

Trail Construction



Use small excavators

- Narrow trails will minimize disturbance
- Sort and place woody materials using the excavator's bucket and live thumb; the placement of woody material along the toe of the fill slope helps to reduce disturbances and provides a visual cue of the disturbance limits during rehabilitation.
- Use of an excavator during construction allows for the exposure and sorting of the forest floor and soil horizons. The aim of trail construction should include the separation of nutrient-rich productive surface soil and organic material from less productive subsoil, so that during trail rehabilitation, both layers can be retrieved and deposited in the original undisturbed order. This placement of soil back to the location it was removed from helps to maintain site productivity.
- Light weight machines help to reduce compaction.

Construct with deactivation in mind

- Planning ahead for rehabilitation by minimizing soil disturbance will reduce the rehabilitation efforts required.
- Stumps along the low side of a skid trail can be used to support fill and reduce the quantity of cut and fill required by holding the material at a steeper angle.
- The use of snow during winter construction helps to reduce the amount of cutbank excavation required to build the trail to the desired width, resulting in less disturbance. Use of the trail during frozen conditions will reduce soil disturbance due to reduced compaction and the reduced depth of decompaction required.
- Use of log bundles placed in a temporary stream crossings or seepage during trail construction:
 - Will deactivate more easily than excavating through solid frozen ground.
 - Will result in less soil disturbance resulting in a reduced erosion of the crossing site.
 - Provide a high level of protection to the channel and banks.

TRAIL REHABILITATION

GOAL

The goal is to improve site nutrient and soil moisture holding capacity (which provides a good substrate for seedling establishment and growth), restore soil structure, improve aeration porosity, control erosion, restore drainage patterns, and leave hummocky surface with variable micro-relief which incorporates large woody material.

Timing: Rehabilitate trail before spring runoff

A summer-built trail, which will not be rehabilitated before operations end and winter begins, will require seasonal deactivation to manage water. Waterbars and / or swales need to be constructed to shed water from the trail and prevent erosion.

A winter-built trail, which has a snow layer as part of the fill, will require careful planning in order to have all rehabilitation completed before snow melts. If the snow fill melts, the stability of the trail will be compromised.

PHASES OF REHABILITATION

1 Site Preparation: Remove long branches and stems before decompaction. No long branches or stems should be left in place during decompaction or recontouring (do not mix branches in with the soil). The stems could intercept and direct subsurface seepage resulting in concentrated flows causing erosion or instability.

2 Decompaction: Rip with teeth of excavator bucket to loosen soil below compacted surface. Rip deeper in the middle of the trail than the inside (uphill) track. This will provide an outsloping profile for the loosened soil. The outer (downhill) track will be decompacted during sidecast retrieval as part of recontouring.

3 Recontouring: Placement of soil material in reverse order – manage nutrient rich top soil to promote soil productivity. Place soil material to top of the cut bank.

4 Water Management:

Construct waterbars to help ensure slope hydrology has been restored. Waterbars can be regularly spaced as well as positioned at obvious swale locations. Waterbars are constructed to collect flows and disperse water down slope. Waterbar spacing will prevent concentrated flows from forming.

Outsloped swales or rolling grades constructed along the rehabilitated trail will provide water management benefits similar to those of waterbars.

6 Planting: Tree seedlings provide the growing stock of timber for future forest management.

The phases of decompaction and the retrieval of soil during recontouring help with seedling establishment and growth. Large woody debris should not be spread too thick otherwise it would interfere with the planting areas for tree seedlings.

5 Surface Roughness: The placement of large woody debris over the recontoured surface will help provide microsites more suitable for tree seedling growth; woody debris provides both shade and associated moisture retention.

Keep the surface rough and irregular to prevent erosion. The use of large woody debris will aid in preventing rainfall from eroding bare soils.



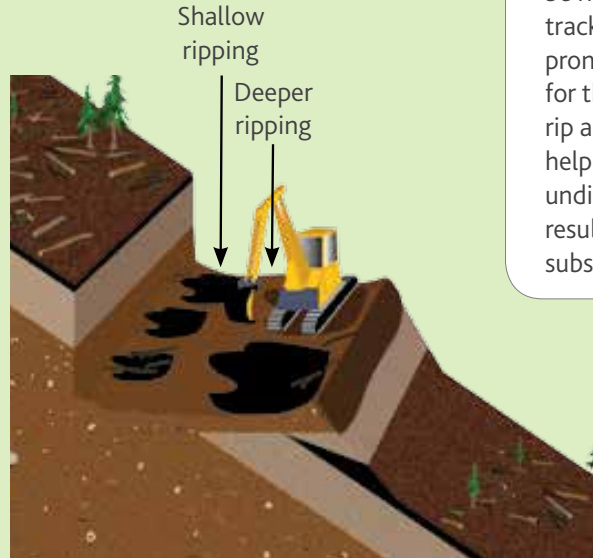
TRAIL DECOMPACTION

1

Decompaction should be done by ripping the trail surface with the teeth of an excavator-mounted bucket. A ripping depth of 10 to 30 cm is easily achieved.

4

Further spreading of the ripped material can be done with the bucket of the excavator which also will loosen the newly ripped surface material



2

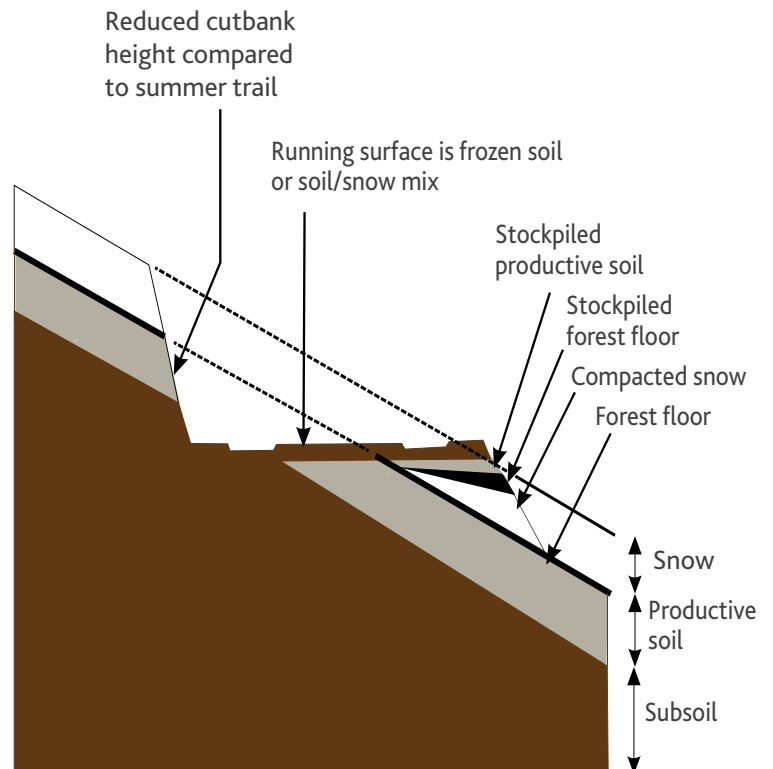
The mid track position should be ripped deeper than the inner track (upslope) position. This will promote an outsloping profile for the loosened soil. The shallow rip along the inner track will also help to prevent ripping into the undisturbed subsoil which could result in intercepting any functioning subsurface drainage.

3

The outer track location will be decompacted during sidecast retrieval and the placement of this material during recontouring.

SEASONAL CONSIDERATIONS

- When full rehabilitation of a summer-built trail needs to be suspended due to the onset of winter and frozen conditions, partial deactivation is required to control the water and prevent erosion along the trail network. Waterbars must be constructed along the trail before abandoning the trail network for the winter. Full deactivation can start again once the weather permits, allowing decompaction and recontouring to be completed. Rehabilitating trails concurrent with the completion of a logical unit / area will help to reduce the need to suspend activities.
- Deactivation of a winter constructed trail needs to be completed during the winter and before the snow melts. The snow placed as fill is providing support to the trail. If the snow melts the width of the trail will be reduced and the sorted soil layers will be compromised. A reduced trail width would not provide the needed trail width or stability for an excavator to rehabilitate the trail.
- During winter recontouring, retrieved material placed along the trail will settle as the snow melts, therefore material should be placed higher to compensate for this settlement.



Roadside Residue Handling

GRINDING



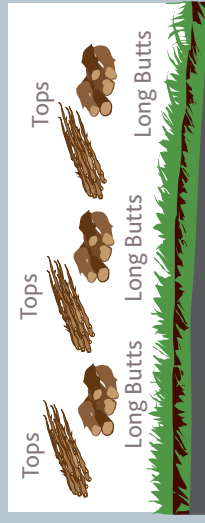
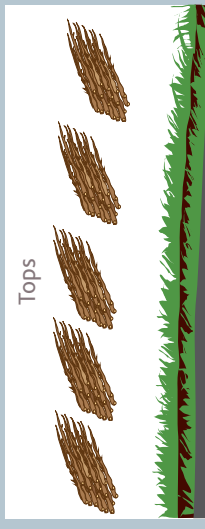
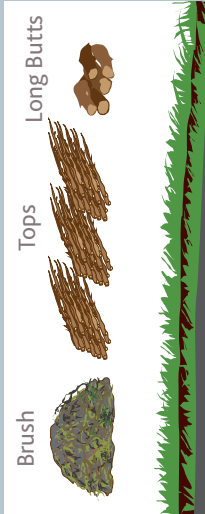
IN-WOODS CHIPPING



UNPROCESSED COLLECTION



PILE FORMATION



ROAD GRADE

ROAD GRADE	PILING INSTRUCTIONS
<10%	Pile for grinding (above)
10-15%	Pile with secondary harvester agreement only.
>15%	Pile for burning if 15% pitches are longer than 50 metres

ROAD GRADE	PILING INSTRUCTIONS
<10%	Pile for in-woods chipping (above)
10-15%	Pile with secondary harvester agreement only.
>15%	Pile for burning if 15% pitches are longer than 50 metres

ROAD GRADE	PILING INSTRUCTIONS
<10%	Pile for unprocessed collection (above)
10-15%	Pile with secondary harvester agreement only.
>15%	Pile for burning if 15% pitches are longer than 50 metres



CUTSLOPE HEIGHT

CUTSLOPE HEIGHT	PILING INSTRUCTIONS
<3 metres	Pile for grinding (above)
3 to 5 metres	Pile with secondary harvester agreement only.
>5 metres	Pile for burning

CUTSLOPE HEIGHT	PILING INSTRUCTIONS
<3 metres	Pile for in-woods chipping (above)
3 to 5 metres	Pile with secondary harvester agreement only.
>5 metres	Pile for burning

CUTSLOPE HEIGHT	PILING INSTRUCTIONS
<5 metres	Pile for unprocessed collection (above)
>5 metres	Pile for burning

Best Piling Practises



TOPS

LONG BUTTS

BRUSH

AVOID CREATING PILE CONTAMINATION

PILE RESIDUES HIGHER IF SECONDARY HARVEST TO OCCUR IN WINTER



Dirt and sand



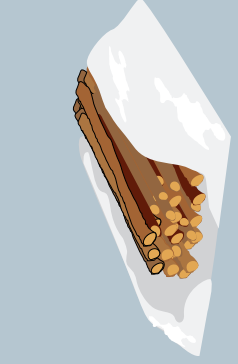
Rock



Metal



Snow





Introduction

Through the Timber sale license (TSL), a Licensee is granted rights to harvest Crown timber. The TSL also obligates the Licensee to comply with various legislation, regulations and with any obligation contained within the TSL agreement. BC Timber Sales (BCTS) provides copies of legally required plans. BCTS may provide other informational plans and guidance to the Licensee, intended to provide a reasonable expectation of meeting the results and strategies of the Forest Stewardship Plan (FSP).

The TSL document was revised to include the following clauses with respect to having a Plan:

- 0.10 The Licensee must have a plan that covers primary forest activities on the cutting authority area prior to commencement of primary forest activities.
- 0.11 The Licensee must amend the plan referred to in paragraph 4.10 before the Licensee intends to conduct primary forest activities in a way that is different from what is described in the plan.
- 0.12 The Licensee must submit the plan or amendment referred to in paragraphs 4.10 or 4.11 if requested by the Timber Sales Manager.

Any plan prepared or proposed to be amended must be consistent with the results and strategies in the approved FSP, and consistent with the various acts and obligations of the TSL or Road Permit (RP).

Definitions

Informational Plans - are any non-legally required plan, set of documents or amendment that provides information or guidance to on the ground forest management activities on the area. It includes any combination of: maps, text, reports or drawings. Some examples of informational plans are, but not limited to: harvest plans, road layout and design, deactivation plans, terrain stability field assessments, or road maintenance plans.

Legal Plans are any legal document that is required to be prepared to set conditions as described in various acts and regulations. The TSL document and the legal content of a site plan, per section 34 of the *Forest Planning and Practices Regulation* (FPPR), are examples of legal plans. Assessments for cutblocks carried forward under section 196(2) of the *Forest and Range Practices Act* are also considered legal plans.

Forest Professional - A person admitted under Section 14 of the *Foresters Act* as a Registered Professional Forester, Registered Forest Technologist, or a holder of a special permit entitled to practice professional forestry as defined in the *Foresters Act*, SBC 2003 c. 19, as amended.

Primary Forest Activity – As defined in section 1 of the FPPR.

1. Changes to the TSL Agreement

The TSL Agreement will only be amended to respond to a court ordered modification of harvesting rights due to infringement on rights or title of a First Nation, or an unidentified resource value.

2. Changes to the Site Plan

A site plan is a legally required plan that identifies describes how the results and strategies in specified in the FSP apply to a TSL. Only the holder of the FSP may prepare a site plan, therefore the Timber Sales Manager is the legal owner of the site plan and is the only person who may amend it. There are no foreseeable circumstances where a site plan may be required to be amended in the harvesting of a TSL: plan changes required in the course of operations are described in “Informational Plan Changes” below.

Changes to the amount of permanent road must be submitted to the TSM so that the Net Area to be Reforested in the site plan can be amended by BCTS staff. This can be submitted after harvesting is complete.

3. Informational Plan Changes

The TSL holder may replace or amend Informational Plans, however, the new plan must still comply with the BCTS FSP, Environmental Management System (EMS) requirements and all other applicable legislation. As per Part 4 of the TSL, the agreement holder must amend the plan prior to conducting primary forest activities that differ from those outlined in the original Informational Plan.

As a best practice, all changes to the plan need to be clear and communicated to workers on site prior to implementing the change. Proper documentation must be retained to support the change. The attached template could be used to properly document the change and the rationale for the change.

In accordance with Part 4 of the licence document, the licensee must submit the amended plan to the TSM upon request. BCTS uses the updated Plans to ensure EMS requirements are measured against the amended plan. Although BCTS receives the amended Informational Plan, they do not approve it.

Changing the Informational Plan falls within the scope of professional Forestry as governed by the *Forester’s Act*. When carrying out forest activities on Crown land, a Forest Professional must prepare a plan for that activity.

Examples

- Change in harvest method
- Changes to road design and road location
- Changes to WTRA location

Suggested Process to Change an Informational Plan

1. Prior to completing forest activities contrary to an existing plan the Licensee must amend the existing plan.
2. It is recommended that the Licensee inform the BCTS harvesting technician of the proposed change so that BCTS can provide the Licensee with relevant information for consideration by the licensee's forest professional when making the proposed change.
3. If informed, the technician discusses with their supervisor and the practices forester and provides the licensee with relevant information.
4. It is recommended that the Licensee use Forest Professionals as legally required by the *Foresters Act* to create the amended plan. The Forest Professionals may use other qualified professionals (PGeo, Peng. Hydrologists, Biologists) to provide assessments or advice in amending the plan.
5. Licensee documents the amendment and retains a copy with their records.
6. Licensee provides the BCTS Harvest Technician with a copy of the amended Plan.
7. Licensee continues work under amended plan.

3. Minor changes not requiring documentation to be submitted:

Licensees must ensure that any change to the Informational Plan does not impact other resource values. Minor changes are not normally required to be submitted to the TSM, but must be submitted upon request by the TSMs representative. The amended Plan must always be clearly documented and communicated to workers on site.

Examples

- Moving a landing in situations not affecting other resource values
- Moving a temporary in-block road where there are no TSA recommendations
- Moving a temporary skid trail where there are no TSA recommendations
- Moving a permanent road within the right of way
- Moving a temporary stream crossing where riparian values are not impacted

Template for Changing the Project Plan

Appendix A may be used by the licensee and provides general considerations (checklist) and suggested content (template) when making a change to the Project Plan. If applicable, the map accompanying the content below should **clearly** identify the change.

When considering changing a BCTS plan, a registered professional must comply with all current legislation and consider the eleven FRPA values (Biodiversity, Cultural Heritage, Fish/Riparian, Forage and Associated Plant Communities, Recreation, Resource Features, Soils, Timber, Visual Quality, Water and Wildlife). In addition the change in plan document must ensure that the Results and Strategies contained in the FSP will still be met. Specifically, any changes to the existing plan must consider the above values and the FSP and address them in the document which is considered the Project Plan.

Appendix A Changing the Plan Notification Form

License #	Block #
Licensee	Location
Date	

Description of Change

Rationale

Checklist of Potential Considerations and Documentation

Assessment	Yes / No
Terrain Stability	<input type="checkbox"/> <input type="checkbox"/>
Avalanche Assessment	<input type="checkbox"/> <input type="checkbox"/>
Visual Impact Assessment	<input type="checkbox"/> <input type="checkbox"/>
Hydrological Assessment	<input type="checkbox"/> <input type="checkbox"/>
Ungulate Winter Range Implications	<input type="checkbox"/> <input type="checkbox"/>
Wildlife Tree Retention Area % and does the Change impact the FSP %	<input type="checkbox"/> <input type="checkbox"/>
Biodiversity OGMAs + or Mature requirements	<input type="checkbox"/> <input type="checkbox"/>
Cultural Heritage Assessments	<input type="checkbox"/> <input type="checkbox"/>
Archeological Assessments:	<input type="checkbox"/> <input type="checkbox"/>
Natural Drainage Maintained	<input type="checkbox"/> <input type="checkbox"/>
Range Management Measures	<input type="checkbox"/> <input type="checkbox"/>
Other?	<input type="checkbox"/> <input type="checkbox"/>
Other resource values that may be impacted?	<input type="checkbox"/> <input type="checkbox"/>
	Yes / No
Changes Consistent with FSP Results and Strategies?	<input type="checkbox"/> <input type="checkbox"/>
Map and GPS Shape File Required and Included	<input type="checkbox"/> <input type="checkbox"/>
Amendment to Original Harvest Plan Map +/- or Road Overview Map	<input type="checkbox"/> <input type="checkbox"/>
Changes communicated to necessary workers ?	<input type="checkbox"/> <input type="checkbox"/>

Signing and Sealing Registered Professional:	Date:
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As per TSL and contract document(s) and environmental Emergency Response Plan (eERP), a licensee / contractor must conduct tests and periodic drills for emergency preparedness, including documenting the results, action taken and follow-up of such tests or drills.

Note: Tests are to be documented on the BCTS “Environmental Emergency Response Test/Drill Report Form CHK-010”, records maintained on site and copies of results forwarded to a BCTS representative. Results of drills may be documented on the CHK-010 and maintained on site.

Ensure a copy of the eERP is on hand and reviewed for effectiveness during tests or drill exercises.

Test – a comprehensive testing of the environmental emergency response procedures to ensure that they are adequate to address emergency events. This includes full, hands on scenario testing of equipment, communications, and procedures as outlined in the eERP.

Drill – a due diligence exercise to ensure that onsite personal have adequate levels of comprehension and awareness of environmental emergency preparedness and response procedures. This involves a demonstration of workers level of knowledge and training, this may include:

- Review of eERP procedures,
- Employee interview,
- Equipment testing,
- Review of onsite ER equipment.

Spill Emergency Response Test Example

Record Steps and Sequence on CHK-010

Example Scenario: For Diesel, Hydraulic Material

Scenario: a piece of heavy equipment parked on the side of the road has leaked oil into a nearby ditch. Arriving on the scene, workers see the oil heading toward a nearby stream.

How to set up for a test: explain the scene to the participants and let them give feedback on what response steps should be taken to avoid further contamination. Use a pail of water and popcorn - create the spill and let the workers respond accordingly.

Suggested steps & sequence

1	Recognize the problem, & evaluate hazards	<ul style="list-style-type: none"> • Identify type of material spilled & volume • Identify & Evaluate potential problems that may be encountered in control, containment & cleanup • Refer to the MSDS for the material spilled • Have fire extinguishers available if there is a risk of fire
2	Take Control	<ul style="list-style-type: none"> • Stop Operations & shut off equipment • If safe, remove any sources of spark or flame • Ensure supervisor & fellow workers are notified • Stop the source of the spill where possible
3	Contain the spill	<ul style="list-style-type: none"> ▪ Blocking flow (use spill pads, buckets, booms, absorbents, snow, or soil to make a berm) ▪ Use resources at hand to minimize spread and impact of the spill until additional resources & expertise arrive • Use available equipment to create a barrier or berm
4	Commence recovery of the spilled material	<ul style="list-style-type: none"> • Soak up all free product with available materials • Mix stained soil with loose absorbents or commercial bioremediation agents • < 25 liters – low risk: Mop up excess fluids with spill pads/ booms and place in container/plastic bag for disposal • > 25 liters – high-risk: Do initial mop up with available materials. Contact Spill specialist for further instructions
5	Report the Spill to appropriate personnel	<ul style="list-style-type: none"> • Low risk spill (< 25L & not in water): report to your immediate supervisor • High risk spill (> 25L or in water): report to supervisor, PEP, (only if greater than 100 liters), Spill Response Specialist, BCTS rep, Gov't agency or other
6	Complete an Incident Report	<ul style="list-style-type: none"> • For the purposes of the exercise review required incident reporting requirements only and copy to your files and BCTS rep.

Fire Emergency Response Test Example *Record Steps and Sequence on CHK-010*

Example Scenario

Scenario: a worker discovers a small fire (lightning strike) at the edge of cut block that has almost spread into the standing timber.

How to set up for a test: explain the scene to the participants and let them give feedback on what response steps should be taken to combat this fire. Mark the area that is on "fire" with highly visible flagging tape. Instruct the participants as to the nature of the fire and allow them to respond.

Suggested steps & sequence

1	STOP operations	<ul style="list-style-type: none"> Notify supervisor & all personnel in the immediate area
2	Report the fire to appropriate authorities	<ul style="list-style-type: none"> BC Wildfire Reporting 1-800-663-5555 as per ERP Immediate Supervisor BCTS Rep
3	Assess the hazard and the safety risk,	<ul style="list-style-type: none"> Consider; fire size, behavior, crew experience, training, available equipment, site and weather conditions
4	Develop a plan for initial attack	<ul style="list-style-type: none"> The supervisor should determine the method of initial response, equipment, and personnel required
5	Provide direction/instruction to the fire fighting crew	<ul style="list-style-type: none"> Dispatch personnel to mobilize the equipment Alert the crew to the potential hazards, and provide any immediate instruction necessary to ensure their safety
6	Commence initial response on the fire	<ul style="list-style-type: none"> Response level based on: fire size, behavior, crew experience, training and available equipment The supervisor holder will monitor the fire fighting efforts until relieved by a higher authority or another trained suppression worker
7	Complete mop up with appropriate personnel	<ul style="list-style-type: none"> Mop up will be performed under the direction of a qualified supervisor or fire official.
8	Complete an Incident Report	<ul style="list-style-type: none"> For the purposes of the exercise review required incident reporting requirements only and copy to your files and BCTS rep.

Landslide/Erosion Emergency Response Test Example *Record Steps and Sequence on CHK-010*

Example Scenario

Scenario: a landslide has closed the mainline leading to the worksite. It is late afternoon when the road closure is discovered and the crew is stranded.

How to set up for a test: explain the scene to the participants and let them give feedback on what response steps should be taken to evacuate the crew and ensure safety.

Suggested steps & sequence

1	Assess the hazard and the safety risk	<ul style="list-style-type: none"> Evaluate the size and impact of the erosion event Warn others in the immediate area of any safety hazards and secure the zone from further entry if possible
2	Develop a plan of evacuation	<ul style="list-style-type: none"> If required the Supervisor will devise a plan to evacuate the crew in a safe manner If require; workers to be mustered into a safe zone while awaiting evacuation
3	Report the event to appropriate authorities	<ul style="list-style-type: none"> Notify your immediate supervisor Notify your BCTS representative for further instruction
4	Take remedial action	<ul style="list-style-type: none"> Take steps to control further environmental impacts Use heavy equipment to remove the slide or to make an emergency access
5	Complete an Incident Report	<ul style="list-style-type: none"> .For the purposes of the exercise review required incident reporting requirements only and copy to your files and BCTS rep.

REFERENCE GUIDE FOR WHMIS

The 3-step snapshot to understanding WHMIS

➤ Understand the symbols

- The symbol is a visual reminder of what type of substance you will be handling
- Symbols are found on Labels and MSDS.
- Some examples of the classes you might encounter in the forest industry are:
 - Oxygen and Acetylene (Compressed Gas)
 - Gasoline and Diesel (Flammable/Combustible)
 - H2S gas from Sour Gas wells (Poisonous material)
 - Battery Acid (corrosive materials)



Class A: Compressed Gas



Class B: Flammable and Combustible material



Class C: Oxidizing Material



Class D: Poisonous and Infectious Materials



Class E: Corrosive Material



Class F: Dangerously Reactive Material

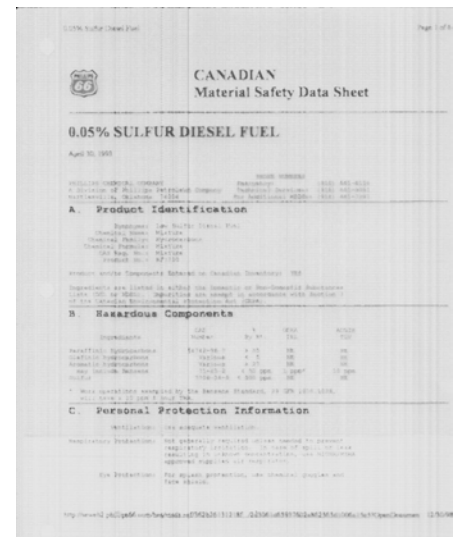
➤ Recognizing Labels

- Labeling (by Suppliers or Employers) is required on hazardous substances
- Labels are the **first indicator** to the worker that they are dealing with a hazardous substance
- Labels must contain the following information:
 - Identification of the substance (eg. Diesel Fuel)
 - Hazard symbol of the substance
 - Precautionary and First Aid measures
 - Reference to Material Safety Data Sheets (MSDS)
- Types of Labels
 - Supplier – generally an adhesive label attached before shipment
 - Workplace – often a plastic tag attached by a wire or plastic tie to the container by the employer
 - Hand written – writing of the product name by the worker when the substance is dispensed for their individual use.



➤ Knowing how to use **Material Safety Data Sheets (MSDS)**

- An MSDS is a written bulletin issued by the supplier providing specific information about the hazardous substance
- MSDS will contain the following information
 - Product Name
 - Hazardous ingredients
 - Physical data
 - Fire and Explosion hazard
 - Reactivity data
 - Toxicological properties
 - Preventative measures
 - First Aid measures
 - Preparation information
- An employer must make the Material Safety Data sheets available to the workers, and provide time for them to read the information before commencing work

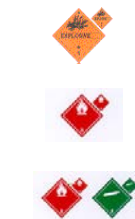


REFERENCE GUIDE FOR TDG (Transportation of Dangerous Goods)

The 4-step snapshot to understanding TDG

➤ Symbols

- The symbol is a visual reminder of what type of substance is being transported
- Symbols are found on Labels & Placards
- Some examples of the classes you might encounter in the forest industry are:
 - Class 1 – Blasting materials (Explosives)
 - Class 2 – Oxygen, Acetylene, Propane (Gases)
 - Class 3 – Diesel, Gasoline, Solvents (Flammable & Combustible liquids)
 - Class 6 – Solvent compounds, paint removers (Poisonous substances)
 - Class 8 – Battery acids (Corrosive substances)



Class 1: Explosives

Class 2: Gases

Class 3: Flammable & combustible liquids



Class 4: Flammable solids



Class 5: Oxidizing substances



Class 6: Poisonous & Infectious substances



Class 7: Radioactive materials



Class 8: Corrosive substances



Class 9: Miscellaneous products

➤ Safety Marks

- Safety Marks are the **first indicator** to the worker that they are dealing with a dangerous good when approaching a container or vehicle load
- Types of Safety Marks
 - Labels – small diamond shaped marks generally found on smaller containers (i.e. oxygen bottles)
 - Placards – large diamond shaped marks generally found on larger containers or on loaded vehicles transporting dangerous goods
- Safety Marks will contain the following information:
 - Symbol of the dangerous good (i.e. a flame)
 - Class of the substance (i.e. Class 3)
 - Shipping Name (i.e. Gasoline)
 - PIN (product identification) number (i.e. UN 1203)
- Use of Safety Marks
 - Whenever a dangerous good is transported
 - When used on larger loads, placards are generally attached at 4 corners of the load vehicle
 - Placards are even required when containers or tanks are empty



➤ Documentation

- Class 3 substances (Diesel, Gasoline) generally do not require a shipping document unless the container size is 2000 liters or larger
- Used oils (generated by the contractor) are not classified under TDG regulation
- If a shipping document is used, it must contain the following information:
 - Document number
 - Date of shipment
 - Signature of the shipper
 - Shippers name and address and 24 hour contact number
 - Receivers name and address
 - Carriers name
 - Name, Class, PIN, Packing group, and volume of product being shipped
 - Type and number of placards used

➤ Emergency Response

- When spills or leaks exceed the quantities listed, it must be reported to:
 - The Police
 - The Employer
 - The Vehicle owner
- The owner of the goods

Rules to remember for TDG

1. Use the right container
2. Keep the container capped
3. Label the container
4. Secure the container in an upright position when in transport
5. When unloaded, protect from collision

OIL RECYCLING
BCUOMA (BC Used Oil Management Association) Used Oil, Oil Containers,
Oil Filters Drop Off Facilities – January 2008

Nelson

Midas Auto Services 618 Lake St. Nelson, BC V1L 4C8 Tel.: (250) 354-4866 Hours: Call for Hours	Nelson Ford 623 Nelson Street Nelson, BC V1L 1H5 Tel.: (250) 352-7202 Hours: Call for hours	Wilf's Auto Repair 2757 Highway 3A Nelson, BC V1L 6L2 Tel.: 250-825-2220 Hours: Mon - Fri 8AM to 5PM	Bills' Motor-Inn Ltd. 213 Baker Street Nelson, BC V1L 4E3 Tel.: 250-352-5304 Hours: Tues - Sat 8AM to 5PM	Lakeside Lube and Exhaust 206 Lakeside Drive Nelson, BC V1L 6B9 Tel.: 250-352-1758 Hours: Mon - Sat 8AM to 5PM
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Cranbrook

Canadian Tire (Cranbrook) 1100 Victoria Avenue N. Cranbrook, BC V1C 6G7 Tel.: 250-489-3300 Hours: M-F 9am-9pm, Sat 9am-6pm, Sun/Holidays 10am-5pm	Millennium Ford Sales Ltd. 1126 Cranbrook St. Cranbrook, BC V1C 2S5 Tel.: 250-426-6645 Hours: Call for hours	Newalta Cranbrook Service Centre 2101 Theatre Rd. Cranbrook, BC V1C 7G6 Tel.: (250) 426-2073 Hours: Mon - Fri 7:30am - 4:30pm	Petro Canada Bulk Oil 814 Theatre Road Cranbrook, BC V1C 7C1 Tel.: 250-426-6669 Hours: Mon - Fri, 7am - 5pm
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Nakusp

Grand Forks

Radium

Slocan

Nakusp Shell Service 301 Broadway St. Nakusp, BC V0G 1R0 Tel.: 250-265-3355	Pinegrove Auto and Small Engine Repair 2091 Central Ave Grand Forks, BC V0H 1H2 Tel.: 250-442-8204 Hours: Call for hours	Radium Hot Springs Esso 7507 Main Street West Radium Hot Springs, BC V0A 1M0 Tel.: 250-347-9726 Hours: 7 days/week, 7am - 11pm	Slocan Park Service 2976 Highway 6 Slocan Park, BC V0G 2E0 Tel.: (250) 226-7266 Hours: Tues - Sat 8AM - 5PM
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Castlegar

Canadian Tire 2000 Columbia Avenue Castlegar, BC V1N 2W7 Tel.: 250-365-7737 Hours: Call for hours	Ernie's Used Auto Parts 4801 Minto Road Castlegar, BC V1N 4C1 Tel.: 250-365-6225 Hours: Call for hours	Glacier Honda 1602 Columbia Ave. Castlegar, BC V1N 1H9 Tel.: 250-365-4845 Hours: Mon - Sat 8AM to 5PM	Kalawsky Pontiac Buick GMC 1989 Ltd. 1700 Columbia Avenue Castlegar, BC V1N 2W4 Tel.: 250-365-2155 Hours: Mon - Sat 8AM to 4:30PM	OK Tire and Auto Service 2141 Columbia Avenue Castlegar, BC V1N 2W9 Tel.: 250-365-5111 Hours: Mon - Fri 8AM to 5PM
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Invermere

OK Tire and Auto Service Lot 150 Industrial Road #2 Invermere, BC V0A 1K5 Tel.: 250-342-0800 Hours: Mon - Sat	Petro Canada Bulk Oil 410 Panorama Drive Invermere, BC V0A 1K0 Tel.: 250-342-9915 Hours: Mon - Fri, 8am - 5pm	Walker's Repair Centre Ltd. 141 Industrial No. 2 Avenue Invermere, BC V0A 1K0 Tel.: 250-342-9424 Hours: Mon - Sat, 8:30am - 5:30pm
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Trail

Canadian Tire 8238 Highway 3B Trail, BC V1R 4W4 Tel.: (250) 364-3333 Hours: Call for Hours	J. Mota Truck and Auto Repair 8023B Old Waneta Road Trail, BC V1R 2Y8 Tel.: (250) 364-1720 Hours: Call for hours	Stormes Auto Repair and Petro-Can Gas Bar 705 Victoria Street Trail, BC V1R 3T1 Tel.: (250) 364-3297 Hours: Mon - Fri 7AM to 6PM	Waneta Auto Recyclers 9310 Crown Road Trail, BC V3V 4W6 Tel.: (250) 367-9443 Hours: Mon to Fri 8:30AM - 5:00PM	Warfield Shell 800 Schofield Highway Trail, BC V1R 2G9 Tel.: 250-364-2500 Hours: Mon - Fri 8:30AM to 4PM
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Greenwood

Kaslo

Greenwood Auto Centre Ltd. 494 Silver Street Greenwood, BC V0H 1J0 Tel.: 250-445-9911 Hours: 9AM to 5PM; Open 7 Days A Week	Greenwood Saw Two Truck Repairs 893 North Government Street Greenwood, BC V0H 1J0 Tel.: 250-445-9909 Hours: Call for hours	Hartech Industries Inc. 8845 Highway 31 Kaslo, BC V0G 1M0 Tel.: 250-353-2800 Hours: Call for hours	The Kaslo Pump 4116 Highway 31 Kaslo, BC V0G 1M0 Tel.: 250-353-2533 Hours: Call for hours
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Creston (oil only)

Rock Creek

Creston Brake and Muffler 132 Northwest Blvd Creston, BC V0B 1G6 Tel.: 250-428-7403 Hours: Call for hours	ESSO (Imperial Oil) 120 Collis Street Creston, BC V0B 1G6 Tel.: (250) 428-7464 Hours: Call for hours	Granton Motors 3335 Highway 3 Rock Creek, BC V0H 1Y0 Tel.: 250-446-2311 Hours: Call for hours
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Pick Up Services

Enviro West Inc. Kelowna, Phone: 250-766-1124

Will pick up oil, containers and rags throughout BA in all quantities for a fee and certain amounts of various wastes for no fee. Work on a travel schedule.

Newalta - Cranbrook Centre, Cranbrook, Phone: 250-426-2073

Will travel as far as Kootenay lake for >45Gallon drums of oil, containers and filters, and pay a return incentive.

KOOTENAY BUSINESS AREA LANDFILL SITES

REGIONAL DISTRICT OF EAST KOOTENAY

Accepts: Contaminated soil (needs to be analysed by Environmental Consultant). **Cost:** \$100/tonne

Central Subregion Landfill 12 km North of Cranbrook on Highway 93/95 Phone: 250-421-1590 Hours of Operation: 9am-6pm seven days a week (closed Christmas and New Years Day)	Columbia Valley Landfill Windermere Loop Road Phone: 250-342-0381 Hours of Operation: 9am-6pm seven days a week (closed Christmas and New Years Day)
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REGIONAL DISTRICT OF CENTRAL KOOTENAYS

Accepts: Contaminated soil (needs to be analysed by Environmental Consultant). **Cost:** \$50-\$90/tonne

Creston Landfill 2206 Highway 21 Hours: Tues- Sat, 9am-4pm	Castlegar Landfill Ootischenia Hours: Mon-Sat, 8:30am-4pm	Nakusp Landfill 1420 Hot Springs Road Hours: Mon. 9-12:30, Wed. & Sat. 9am-4pm	Central Landfill 550 Emerald Mine Road 10km East of Salmo Hours: Wed & Sat 10-2
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REGIONAL DISTRICT OF KOOTENAY BOUNDARY

Accepts: Needs to be analysed by Environmental Consultant.

McKelvey Creek Regional Landfill 1900 Highway 3B, Trail Hours: Mon. – Thurs. 10:00am – 5:00pm	Grand Forks Regional Landfill 8798 Granby Road Hours: Tue. – Sat. 8:30 – 4:00; Sun. 12:00 – 4:00	West Boundary (Greenwood) Deadwood Road, 3km from Hwy 3 Hours: Tuesday – Friday 9:00am – 4:00pm
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HAZCO ENVIRONMENTAL & DECOMMISSIONING SERVICES

201 – 2307 Enterprise Way, Kelowna B.C. Phone: 250-762-5380, Gord Allan, Manager

Provides Bioremediation facilities accepting various hazardous waste (requiring analysis by Environmental Consultant) at the following Regional District Landfill Sites as noted above:

Castlegar Landfill; Creston Landfill; Grand Forks Landfill; Greenwood Landfill; Nakusp Landfill; Salmo Landfill. Additional facility located at the Regional District of Central Okanagan Landfill site in Westbank.

ENVIRONMENTAL CONSULTANTS – SPILL RESPONSE SPECIALISTS

The following Companies are available to respond to hazardous spills and have the expertise to assess, contain analyse and advise on disposition of spills:

SNC-LAVALIN (Morrow Environmental)

Cranbrook Office – 901 B Industrial Road #2 Cranbrook, B.C. V1C 4C9, Phone: 250-426-9070 (cell - 250-489-9733), Contact – Michelle Unger (B.Sc.)

Nelson Office – Suite D, 385 Baker St. Nelson, B.C. V1L 4H6, Phone: 250-354-1664 (cell - 250-354-3797), Contact – Mark Tinholt (P.Eng.)

Kelowna Office – Suite 100 - 1358 St. Paul St. Kelowna, B.C. V1Y 2E1, Phone: 250-861-9070 (cell - 205-870-3493), Contact – Tony Gillett (P.Eng.)

GOLDER ASSOCIATES

Castlegar Office – 201 Columbia Ave. Castlegar, B.C., Phone 250-365-0344



SCOPE/PURPOSE: The scope of this environmental operating procedure (EOP) applies to significant environmental events associated with activities/operations within the scope of BCTS Environmental Management System (EMS) including harvesting, silviculture, access, and planning. The purpose of this EOP is to outline BCTS staff procedures and responsibilities for EMS incident reporting and investigation.

EMS INCIDENT REPORTING REQUIREMENTS:

1. Emergency Response Incidents:

- *Fire:* Any uncontrolled fire related to BCTS activities.
- *Spills:* Any spill exceeding BCTS reportable levels, or any amount spilled into or immediately adjacent to a stream, lake or running water.
- *Erosion/Landslide Events:* Any emergency or potential emergency, including abnormal soil movement or sedimentation creating a significant risk to the environment or public safety, movement, or an imminent risk of movement of a volume of material greater than 250 m3, or disturbance through erosion processes of a land area greater than 0.25 ha.
- Disruption to domestic/community water supply.
- Previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified tree).

2. Potential Non-compliance:

- In the opinion of the person reporting, legislation and regulation has been violated and there may be an agency investigation to determine fact and possible enforcement action.

3. Significant Non-conformance:

- An occurrence or event that has or will likely result in a negative environmental impact and cannot be immediately rectified.
- When the EMS program has been severely compromised and or a "Notice to Comply" has been issued at the discretion of local management. This includes repeated non-conformances that may become significant.

Reportable Levels		
Substances	BCTS	EMBC
Antifreeze	25 litres	25 litres
Diesel fuel	25 litres	100 litres
Gasoline (auto & saw)	25 litres	100 litres
Greases	25 litres	100 litres
Hydraulic Oil	25 litres	100 litres
Lubricating Oils	25 litres	100 litres
Methyl Hydrate	5 litres	5 litres
Paints & Paint Thinners	25 litres	100 litres
Solvents	25 litres	100 litres
Pesticides	1 kg or 1 litre	1 kg or 1 litre
Explosives	Any	Any

	PROCEDURE:	RESPONSIBILITY
CHK-009 PART A - Initial Incident Report	<p>Initial Incident Identification</p> <ul style="list-style-type: none"> • For BCTS clients, notify any incidents (as defined above) to project supervisors and BCTS representatives within 48 hrs. • BCTS staff, notify any incidents to BCTS woodland supervisor (WS), certification standards officer (CSO) and woodland manager (WM) within 48hrs. • Take immediate corrective action to mitigate impacts to the environment. <p>Complete CHK-009 Part A Initial Incident Report within 48 hrs of occurrence being reported. Submit report to BCTS representative or WS, WM and CSO.</p>	<p>Clients/Staff</p>
	<p>For an emergency response incident, ensure appropriate agencies (e.g., C&E, EMBC, BCWS, DFO, ABCFP) have been notified and ensure the reporting licensee / permittee / contractor or BCTS staff member has followed the requirements of the business area Environmental Emergency Response Plan.</p>	<p>Clients / Staff</p>
	<p>Complete CHK-009 Part B Preliminary Investigation for all reported incidents within 7 days of initial report. Purpose of preliminary investigation is to determine if full investigation under Part C CHK-009 is required. This section is to be discussed jointly and completed by BCTS WS, WM, CSO or designate, where possible.</p> <p>Determine if further investigation is necessary from reported information. CHK-009-Part C-Full Incident Investigation is required if the following apply:</p> <ul style="list-style-type: none"> ✓ Any reported emergency response events associated to BCTS activities, i.e., Fires/Spills, Erosion/Landslide as identified above and outlined in CHK #09. ✓ Potential non-compliances or significant non-conformances associated in any way to BCTS activities (Roads, Harvesting, Planning/Development, Silviculture). ✓ There's a potential opportunity for continuous improvement to BCTS/BA standards or systems. <p>Assign investigation (Team) including investigation responsibilities and target date for completion based on complexity and severity of occurrence/event and include risk and consequence. Investigation roles include lead and support.</p> <p>Ensure appropriate regulatory agencies (e.g., C&E, EMBC, BCWS, DFO, ABCFP) have been notified.</p> <p>If a full investigation is not required, provide a rationale for not conducting full investigation and complete CHK-009 -Part B. Incidents that don't have a significant impact on the environment, (i.e., Timber Transport and Marking) or incidents that can be immediately rectified (i.e., industrial waste left on site or a blocked cross drain culvert) don't require root cause investigation, but one may be initiated if it is a repeat or chronic issue.</p> <p>Record Management / Data Base</p> <ul style="list-style-type: none"> ✓ Follow BA record management protocols accordingly. ✓ Timely update certification data base. ✓ Obtain LRM Issue ID#. 	<p>BCTS Staff only WS, WM & CSO</p>

	PROCEDURE:	RESPONSIBILITY
CHK-009 Part C – Full Incident Investigation	<p>Complete CHK-009-Part C Full Incident Investigation report. Best practice is to complete report within 45 days, rationalize if extended timeline is needed.</p> <p>Conduct Full Incident Investigation to determine root cause and assess:</p> <ul style="list-style-type: none"> • Immediate actions undertaken and proposed to be undertaken to address impacts. • Details of the incident including a timeline, contributing factors and root cause(s). • Utilize root cause analysis techniques. • Adequacy of response measures including training, equipment capabilities, procedures, etc. • Licensee, permittee, contractor and company conformance to procedures or instructions. • Control of impact including timeliness of response. <p>Develop recommendations for appropriate corrective and preventative actions identifying:</p> <ul style="list-style-type: none"> • Immediate actions to address impacts. • Measures to prevent re-occurrence • Actions to address root cause(s). • Present investigation report and recommendations to manager or designate. 	Assigned Investigation Team
	<p>BCTS Manager or designate approves investigation report</p> <ul style="list-style-type: none"> • Approves report findings, and recommendations, • Assigns & communicates roles and responsibilities including target dates for implementation and completion of actions. • Responsibilities, timelines, and verification of completion of actions. • Signs off final report, update CHK-009 Part C 	Assigned Manager or designate
	<p>Record Management / Certification Data Base</p> <ul style="list-style-type: none"> • Follow BA record management protocols accordingly update records • Timely update certification data base (details of investigations including status of corrective and preventative actions) 	Assigned Investigation Team
	<p>Implementation of Corrective and Preventative Action and Follow-up</p> <ul style="list-style-type: none"> • Updates records as per record management protocols, including required entry into LRM tracking system <ul style="list-style-type: none"> ○ LRM User Guide https://intranet.gov.bc.ca/for/bcts/information/business-applications/lrm-reference-materials • At BA's discretion, document completion of all actions under CHK-009 Part C, corrective & preventative action tables. • Completes actions as per established target dates. • Compiles necessary documentation/records to demonstrate completion. • Communicates completion of actions to others. 	Assigned Personnel
	<p>Monitoring Incident, action plan for closure</p> <ul style="list-style-type: none"> • Actions and incident records are tracked to completion. Update LRM action plans accordingly. • Action plan completion dates can be documented on CHK-009 Part C. • If necessary, communicate out summary report to staff (best practice is to run regular ITS and action plan reports). 	WS, WM, CSO

Purpose:

BC Timber Sales environmental management system (EMS) and sustainable forest management program identifies requirements to protect threatened or endangered species and ecological important plant and animal communities. BCTS Timber Sale Licensees, Permittees and Contractors (LPCs) are required to meet various federal and provincial legislative such as the Canadian Species at Risk Act, BC Wildlife Act and Forest and Range Practices Act, requirements and government WHF order, which relate to the management of wildlife and ecosystems.

This document outlines LPC expectations of species of management concern (SOMC) roles and responsibilities when conducting operations within the Kootenay Business Area (KBA).

Procedures:

Project Pre-work (LPC supervisor – staff)

- Review any SOMC, or Wildlife Habitat feature operational requirements/constraints specific to the activity/location as identified in the Site Plan.
- All staff, be familiar with key SOMC applicable to your operating area – refer to KBA SOMC field guide.
- Be familiar with:
 - **KBA Wildlife Habitat Feature Order**
[tko_wildlife_habitat_features_kootenay_boundary_region_order.pdf\(gov.bc.ca\)](http://tko_wildlife_habitat_features_kootenay_boundary_region_order.pdf(gov.bc.ca)) and
 - **KBA Bird Nest Encounter SOP** [tko_sop_lpc_bird_nest_encounters.pdf\(gov.bc.ca\)](http://tko_sop_lpc_bird_nest_encounters.pdf(gov.bc.ca)).
Copies available in field supervisor field book.
 - BCTS EMS stop work requirements.
- Review SOMC, WHF and Bird Nest field sightings and reporting expectations.

Project Monitoring (LPC supervisor-staff)

- Monitoring staff awareness to any operational requirements/constraints specific to activity/project.
- Ensure any field sightings are reported to BCTS staff including situations of stop work.

Field Sightings and Reporting: any field sightings of wildlife species of concern, wildlife habitat features or stick nest encounters.

1. Notify BCTS Project Supervisor ASAP via email or phone
2. For observations, note (at the minimum) the following:
 - Location (gps coordinates or sufficient information to locate on a map), Date of observation, Species. #s observed (seen/heard), health of species. name and contact (phone/email) of observer
 - Habitat (plant or special features of observation location), Land status of observation (e.g. crown, federal, private), Adjacent landscape (e.g. disturbance, roads)
 - Condition of habitat (quality of habitat) Take photo, make field notes.
3. To document identified wildlife habitat features use [WHF Observation Form \(gov.bc.ca\)](http://WHF_Observation_Form(gov.bc.ca)) .
4. Forwarded observations/information to BCTS Project Supervisor who will report information to [Submit Wildlife / Plant Data and Information - Province of British Columbia \(gov.bc.ca\)](http://Submit_Wildlife_Plant_Data_and_Information_-_Province_of_British_Columbia(gov.bc.ca))
5. BCTS staff will recommend appropriate site level measures to be implemented and or if an assessment by qualified professional is required.

Revised May 15, 2023



BCTS

BC Timber Sales
Kootenay Business Area

Standard Operating Procedure Bird Nest Encounters

July 7, 2017

APPLICATION:

This SOP applies to all BCTS Licensees, Permittees and Contractors, including their employees, agents and subcontractors, involved in timber harvesting, road construction, road maintenance and silviculture projects.

BACKGROUND:

The Federal Migratory Birds Convention Act protects migratory birds and prohibits the disturbance or destruction of migratory bird nests and eggs. Section 34 of the BC Wildlife Act prohibits the injuring, molesting or destruction of a bird, its egg or a nest occupied or the nests (active or vacant) of an eagle, peregrine falcon, gyrfalcon, osprey, heron or burrowing owl. Large stick nests may be re-used by birds from year to year and are to be protected, even if they are not currently occupied. An active bird nest is one with eggs or live young in it. Signs you may be near an active nest include birds swooping at you or machinery, birds flying in to tree cavities, or cheeping coming from tree cavities, trees or shrubs.

PROCEDURE:

If you encounter an active bird nest or a large stick nest, **STOP WORK** in the vicinity and immediately report the nest to the Project Supervisor and BCTS. BCTS staff will provide additional guidance or direction consistent with applicable licence, permit or contract provisions.



Establish a **NO WORK ZONE** that will ensure no further disturbance to the nest. Recommended best practices are to cease disturbances in the nesting area until the young have permanently left the nest (which could range from a few days to a few weeks, depending on the species and stage of development). The nest should be protected with a buffer zone (NO WORK ZONE) appropriate to the species, the level of disturbance and the landscape context. Example buffer distances that may be considered range from:

- 10 - 50 meters or more for songbirds and other small bird nests, exception is when brushing-leave a 5-m no-cut zone in the direction you have not cut yet, and if others need to work in the area, flag a 10m no-work zone around the nest
- 25-50 meters or more for swallow colonies
- 100 to 200 meters for a pileated woodpecker,

Additional information is available from Environment Canada or qualified professionals.

Operations can continue outside of the NO WORK ZONE



Kootenay Business Area Wildlife Habitat Features

On May 29, 2018 the Minister of Environment & Climate Change Strategy signed an Order identifying **fourteen** wildlife habitat features in the Kootenay Boundary region, as listed in the table below.

LIST OF WILDLIFE HABITAT FEATURES – KOOTENAY BOUNDARY REGION	
1. a nest of a Bald Eagle	8. an American Badger burrow
2. a nest of an Osprey	9. a Grizzly Bear den
3. a nest of a Flammulated Owl	10. a significant mineral lick
4. a nest of a Western Screech-Owl <i>macfarlanei</i> subspecies	11. a significant wallow
5. a nest of a Great Blue Heron	12. a bat hibernaculum
6. a nest of a Lewis’s Woodpecker	13. a bat nursery roost
7. a nest of a Williamson’s Sapsucker	14. a hot spring or thermal spring

The order defines a “wildlife habitat feature” as a feature used by one or more wildlife species to meet their life history requirements where special management is necessary to ensure that these features are protected and remain functional.

It is important that Licensees, Permittees, and Contractors (LPC) carrying out forest or range activities not damage or render ineffective a *wildlife habitat feature*.

- ***Where measures to protect a wildlife habitat feature have been specified within a project plan, the holder of an agreement or contract will conduct primary forest activities and other related activities in accordance with the measures specified in the project plan.***
- ***Where an LPC encounters a wildlife habitat feature, not previously identified and accommodated for in an existing project plan, the LPC must...***



AND CONTACT YOUR PROJECT SUPERVISOR & BCTS REPRESENTATIVE

Upon reporting of an unidentified wildlife habitat feature, an LPC shall discuss a course of action with a BCTS representative to prevent damaging or rendering the feature ineffective.

Clear definitions and descriptions, as well as suggested management strategies for consideration when carrying out primary forest or range activities can be found in the field guide, at the following link:

[https://www2.gov.bc.ca/assets/gov/environment/natural-resource-policy-legislation/legislation-regulation/frpa-pac/wildlife-habitat-features/whf field guide kootenay boundary.pdf](https://www2.gov.bc.ca/assets/gov/environment/natural-resource-policy-legislation/legislation-regulation/frpa-pac/wildlife-habitat-features/whf_field_guide_kootenay_boundary.pdf)

Please note the list of wildlife features in the table above may be expanded from time to time to reflect new information that indicates potential threats from forest or range activities on localized features. Updates will be included in the link above and/or discussed at operational pre-works.

Purpose and Scope

This EFP applies to BCTS Kootenay Business Area Staff, Licensee, Permittee and Contractor workers involved in forest practices within the scope of the BCTS EMS. It describes specific requirements to prevent the introduction or spread of invasive plants. This EFP does not replace the requirements of legislation, licences, permits and contracts.

Identification and Reporting:

Be familiar with the INVASIVE PLANT INFORMATION PACKAGE provided, this includes;

- ✓ Understanding how to use Kootenay BCTS Invasive Plant Field Book and the identification of what to report in your operating area
- ✓ Location of applicable known infestation areas and any specified measures that apply.

Reportable invasive plants are those listed in the *Kootenay BCTS Field Book*.

Invasive plants in the Kootenay BCTS Field Book are to be reported within 30 days of discovery by any of the following options:


- ✓ Use a Smartphone Report-A-Weed BC applications (download either the [iPhone app](#) or the [Android app](#)), or
- ✓ Go to BC Government invasive plant online reporting website <https://www.for.gov.bc.ca/HRA/invasive-species/reportInvasives.htm>

Inspecting and Cleaning:

- ✓ In areas of infestation, inspect vehicles, mechanized equipment, culverts, bridges and cattle-guards for presence of soil or plant material prior to being transported to or from work sites and, if present, plant and soil materials are to be removed.
- ✓ Inspections are to be documented.

Grass Seeding:

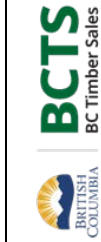
- ✓ Application of grass seeding is required to exposed soils in areas that include; cut and fill slopes of newly constructed roads, constructed or used landings, deactivated roads and any rehabilitated areas. Rehabilitated areas maybe exempt if the rehabilitated areas are to be re-vegetated through the planting of trees.
- ✓ Grass seeding is to occur during the first available spring or fall and not more than 12 months following the time of mineral soil exposure.
- ✓ Seed used is to be Canada Common#1 Forage Mix or better or a mix recommended by MFLNRORD range specialist.
- ✓ If utilizing a dry grass seeding method, seed shall be applied at a rate of 30 to 50 kilograms per hectare.

	<p align="center">BC Timber Sales Table 008-1 LPC Training Matrix</p> <p align="center"><i>The purpose of this matrix is to identify BCTS EMS and SFM program training requirements for BCTS Licensee's, Permittee's, and Contractors (LPCs) Supervisors and Workers. LPC's must achieve and maintain training for required employees, agents, and or contractors working on the cutting authority, associated permit areas or working on the Place of work as specified in this matrix and linked to conditions of BCTS TSL and contract agreements. Training to be completed prior to commencement of activities and documentation of completed training must be maintained on BCTS training summary (table 008-1A). Completion of training to be verified during BCTS pre-work.</i></p>		
Training Description	Target Audience and Frequency	Training Source	Training/Awareness Content

<p>BCTS LPC Supervisor EMS/SFM Awareness Training</p>	<p>Target Audience: Supervisors or designated alternate</p> <p>Frequency: every 2 years</p>	<p>Training material available at BCTS EMS and SFM Program at https://www2.gov.bc.ca/gov/content/industry/forestry/bc-timber-sales/forest-certification/ems-sfm and includes awareness to <u>Kootenay BA Supervisors Field Handbook</u></p>	<ul style="list-style-type: none"> • Training includes BCTS EMS program overview (EFPs, ERP, reporting and stop work protocols), Supervisor roles and responsibilities (EFP02), worker expectations, BCTS SFM program overview and overview of BCTS Migratory Birds, Species of Management Concern (SMOC) and invasive species program. • Supervisors are responsible for ensuring they are knowledgeable in the BCTS EMS and SFM programs • Trained supervisors are responsible for delivering worker EMS/SFM training. • Certificate will be provided upon completion of online training. A copy must be provided to BCTS upon request. • Supervisors or designates must be familiar with contents of the Kootenay BA "S supervisors Field Handbook" https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko-fieldbook-supervisor_2020.pdf
<p>SFI Client General Awareness</p>	<p>Target Audience: Supervisors and Workers</p> <p>Frequency: every 2 years</p>	<p>Training material available at BCTS EMS and SFM Program at https://www2.gov.bc.ca/gov/content/industry/forestry/bc-timber-sales/forest-certification/ems-sfm</p> <p>This training can also be integrated into the supervisor's delivery of BCTS EMS "Worker Tailgate" training.</p>	<ul style="list-style-type: none"> • Awareness document provides a summary of SFI principles under the SFI forest management standard. • Supervisors are responsible to ensure they are knowledgeable of the SFI principles and can provide necessary awareness to workers. • Workers need to have a general awareness to principles of Sustainable Forest Initiative (SFI). • Supervisors can integrate training into their delivery of worker tailgate training.

BC Timber Sales Table 008-1 LPC Training Matrix

The purpose of this matrix is to identify BCTS EMS and SFM program training requirements for BCTS Licensee's, Permittee's, and Contractors (LPCs) Supervisors and Workers. LPC's must achieve and maintain training for required employees, agents, and or contractors working on the cutting authority, associated permit areas or working on the Place of work as specified in this matrix and linked to conditions of BCTS TSL and contract agreements. Training to be completed prior to commencement of activities and documentation of completed training must be maintained on BCTS training summary (table 008-1A). Completion of training to be verified during BCTS pre-work.



Training Description	Target Audience and Frequency	Training Source	Training/Awareness Content
<p>Working with Indigenous Peoples</p>	<p>Target Audience: Supervisors and Workers</p> <p>Frequency: every 2 years</p>	<p>Training material available at BCTS EMS and SFM Program at https://www2.gov.bc.ca/gov/content/industry/forestry/bc-timber-sales/forest-certification/ems-sfm</p> <p>Training material includes two documents types;</p> <ol style="list-style-type: none"> 1. <u>Introductory Information Document</u> "Working with Indigenous Peoples" for supervisors' awareness. 2. Summary Document "Working with Indigenous Peoples" for worker awareness 	<ul style="list-style-type: none"> • Training material provides an overview of ongoing impacts of colonialism, Indigenous Peoples' connection to the land whose rights may be impacted by BCTS forest management activities, and some advice on relationship building. • Supervisors are responsible to ensure they are knowledgeable of Indigenous Peoples rights and can provide necessary awareness to workers. • Supervisors can use the summary document that can be integrated into delivery of worker tailgate training.
<p>SFM Program Continued Education</p>	<p>Target Audience: Supervisors or designated alternate personnel involved in harvesting and road building activities.</p> <p>Frequency: at least one continued education topic every 2 years</p>	<p>Sources include:</p> <p>BCTS continuing education at https://www2.gov.bc.ca/gov/content/industry/forestry/bc-timber-sales/forest-certification/ems-sfm</p> <p>Business Area provided continuing education material and or other forestry sector sources</p>	<p>The purpose of this requirement is to support continuing education and improvement of forest management practices. This is additional training not otherwise listed in BCTS training matrix. Continual education topic(s) may include but is not limited to:</p> <ul style="list-style-type: none"> • Best management practice water management and sediment control, road construction, maintenance, and deactivation. • Reforestation, invasive species management, forest resource conservation, aesthetics, and special sites • Species of management concern or species at risk • Awareness of emerging forest technologies and Forest operations safety
<p>BCTS EMS Worker Tailgate Training</p>	<p>Target Audience: Workers</p> <p>Frequency: every 2 years</p>	<p>Training material available at BCTS EMS and SFM Program at https://www2.gov.bc.ca/gov/content/industry/forestry/bc-timber-sales/forest-certification/ems-sfm or other Business Area approved training (where available).</p> <p>Delivered by supervisor or alternate with BCTS LPC Supervisor EMS/SFM Awareness Training certificate.</p>	<p>Supervisors to utilize BCTS EMS Tailgate training document and Kootenay BA "Worker Field Handbook" to guide delivery of worker training.</p> <p>General awareness to BCTS EMS program that includes:</p> <ul style="list-style-type: none"> • BCTS Environmental Field Procedures, • BCTS EMS Emergency Response and Stop Work Procedures • EMS Reporting requirements • Sustainable Forest Management (SFI principles) • Indigenous Peoples Rights Awareness • Migratory birds, SOMC and invasive species • Other Business Area specific program elements <p>Kootenay BA "Worker Field Handbook" is available at https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko-fieldbook-worker_2020.pdf</p>



BC Timber Sales Table 008-1 LPC Training Matrix

The purpose of this matrix is to identify BCTS EMS and SFM program training requirements for BCTS Licensees, Permittees, and Contractors (LPCs) Supervisors and Workers. LPC's must achieve and maintain training for required employees, agents, and or contractors working on the cutting authority, associated permit areas or working on the Place of work as specified in this matrix and linked to conditions of BCTS TSL and contract agreements. Training to be completed prior to commencement of activities and documentation of completed training must be maintained on BCTS training summary (table 008-1A). Completion of training to be verified during BCTS pre-work.


Training Description	Target Audience and Frequency	Training Source	Training/Awareness Content
<p>Species of Management Concern (SOMC)</p>	<p>Target Audience: BCTS LPC forestry operations personnel involved in harvest, road, and silviculture activities.</p> <p>Frequency: per BCTS project</p>	<p>Refer to Kootenay BA Species of Management Concern Identification Handbook. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko-species-of-management-concern-training.pdf</p> <p>Be familiar with Kootenay BA Species of Management Concern Guide https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko-lpc-sar-guidance.pdf</p>	<p>Specific Business Area SOMC awareness information relevant to species managed at the stand level and most likely to be identified by forestry operations personnel conducting work within the BA. Information and materials may include.</p> <ul style="list-style-type: none"> SOMC awareness material Applicable management objectives/strategies and practices relevant to the project. BCTS stop work procedures and knowledge of procedures to be followed in the event the operational plan is not clear or does not address a new species or feature or other material as provided by BA.
<p>Migratory Birds</p>	<p>Target Audience: BCTS forest management planning and development (multi-phase) contract personnel, forest professionals.</p> <p>Frequency: every 5 years or as per BA</p>	<p>Kootenay BA training material available at: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko-species-of-management-concern-training.pdf</p> <p>Refer to Kootenay BA Species of Management Concern Identification Handbook. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko-species-of-management-concern-training.pdf</p>	<p>Specific training that supports the roles and responsibilities associated to contractor personnel involved in forest management planning and development e.g., multi-phase and development contractors who identify species and develop management prescriptions for plants and/or animals under these programs. This should include.</p> <ul style="list-style-type: none"> Knowledge of basic legal requirement Knowledge of SOMC relevant (or potentially relevant) to the project area. Knowledge of applicable management objectives and appropriate measures and practices relevant to the project. <p>Local BAs may have other programs or objectives that may require awareness.</p>
	<p>Target Audience: Supervisor and Workers</p> <p>Frequency: per BCTS project</p>	<p>Be familiar with Kootenay BA Bird Nest Encounter SOP. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko_ipc_bird_nest_encounters.pdf</p>	<p>Knowledge of applicable migratory birds relevant or potentially relevant to the project area.</p>



BC Timber Sales Table 008-1 LPC Training Matrix

The purpose of this matrix is to identify BCTS EMS and SFM program training requirements for BCTS Licensee's, Permittee's, and Contractors (LPCs) Supervisors and Workers. LPC's must achieve and maintain training for required employees, agents, and or contractors working on the cutting authority, associated permit areas or working on the Place of work as specified in this matrix and linked to conditions of BCTS TSL and contract agreements. Training to be completed prior to commencement of activities and documentation of completed training must be maintained on BCTS training summary (table 008-1A). Completion of training to be verified during BCTS pre-work.

Training Description	Target Audience and Frequency	Training Source	Training/Awareness Content
Invasive Species	<p>Target Audience: BCTS LPC forestry operations personnel involved in harvest, road, and silviculture activities.</p> <p>Frequency: per BCTS project</p>	<p>Kootenay BCTS Invasive Plant Field Book https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko_invasive-plant-guide-book_april2019.pdf</p> <p>TKO Invasive Plant Environmental Field Procedure (EFP) #09 https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko_efp_09_invasive_plants.pdf</p>	<p>Be familiar with INVASIVE SPECIES INFORMATION provided by Business Areas, this includes.</p> <ul style="list-style-type: none"> • Understanding of BA specific common invasive plants in your operating area. • Location of known infestation areas and any FSP specified measures that apply and, • Any applicable local BA operating procedures. Be familiar with Kootenay BA EFP #09
	<p>Target Audience: BCTS forest management planning and development (multi-phase) contract personnel, forest professionals.</p> <p>Frequency: every 5 years or as per BA</p>	<p>Kootenay BA Invasive Plant Awareness Training Module available at https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko_invasive-plant-management-awareness.pptx</p> <p>Kootenay BCTS Invasive Plant Field Book https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko_invasive-plant-guide-book_april2019.pdf</p> <p>TKO Invasive Plant Environmental Field Procedure (EFP) #09 https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kootenay/tko_efp_09_invasive_plants.pdf</p>	<p>Supervisors to review with information package material with workers</p> <p>Specific training that supports the roles and responsibilities associated to contractor personnel involved in forest management planning and development e.g., multi-phase and development contractors who identify species and develop management prescriptions under these programs. This should include.</p> <p>Knowledge of basic legal requirement</p> <p>Knowledge of invasive species relevant (or potentially relevant) to the project area.</p> <p>Knowledge of applicable management objectives and appropriate measures and practices relevant to the project.</p> <p>Local BAs may have other programs or objectives that may require awareness.</p>

	BC Timber Sales Table 008-1 LPC Training Matrix <i>The purpose of this matrix is to identify BCTS EMS and SFM program training requirements for BCTS Licensee's, Permittee's, and Contractors (LPCs) Supervisors and Workers. LPC's must achieve and maintain training for required employees, agents, and or contractors working on the cutting authority, associated permit areas or working on the Place of work as specified in this matrix and linked to conditions of BCTS TSL and contract agreements Training to be completed prior to commencement of activities and documentation of completed training must be maintained on BCTS training summary (table 008-1A). Completion of training to be verified during BCTS pre-work.</i>		
Training Description	Target Audience and Frequency	Training Source	Training/Awareness Content

S100 and S100A	Target Audience: <ul style="list-style-type: none"> All workers carrying out an industrial activity, when there is a risk of a fire starting, must have current S-100 certification (See BCTS LPC eERP Part C for Forest Fire Preparedness and Response procedures) For Planting, when there is a risk of fire starting, at a minimum all supervisors must have current S-100 certification, and for every 10 workers an additional S-100 certified person (may be a supervisor) is required. Note: All workers required to carry out fire control must have current S-100 certification. Consulting services work is generally considered to be a low-risk activity. Only supervisors or workers who conduct fire control activities must have current S-100 certification. Frequency: Annually	BC Wildfire Service approved trainers Recognized S-100 Basic Fire Suppression and Safety Instructors	Fire Safety Training and Suppression NOTE: To conduct fire control activities you must have current S-100 certification
Road Construction Initiated Slides	Target Audience: <ul style="list-style-type: none"> All road construction supervisors and equipment operators constructing a road in a forestry operation where a risk of landslide has been identified. 	BC Forest Safety Council Operator Awareness video: https://www.youtube.com/watch?v=TYbnMZLqamU	As per BC Forest Safety Councils Construction Initiated Slide Task Team (worker safety, site conditions, construction techniques, operating plans, indicators)

- Truck Drivers and suppliers are required to have general emergency response awareness (review of the onsite Environmental Emergency Response Plan). No documentation is required.



Introductory Information on Working with Indigenous Peoples

**BC Timber Sales
Ministry of Forests**

September 2022

Last Updated: September 19, 2022

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Introduction

BC Timber Sales (BCTS) works with Indigenous communities to generate economic prosperity in British Columbia (BC) through safe and sustainable forest management and the auction of public timber. Reconciliation with Indigenous Peoples is integral to BCTS' mandate and long-term success, and the program will continue to engage with Indigenous Peoples on how to best collaborate and continue our collective journey towards reconciliation. Part of this journey is improving cultural awareness, and the understanding of Indigenous Peoples' history, relationship with the land and legal framework. This journey also includes opportunities to build effective and ongoing relationships with Indigenous Peoples. To do this, BCTS can be successful by engaging meaningfully and building partnerships with Indigenous Peoples in all parts of our business. This guide provides information about BC's reconciliation mandate and describes ways that BCTS can build successful working relationships with the Indigenous people and Nations we work with.

Each Indigenous Nation in BC is distinct, and it is important to learn about the specific cultures, rights, interests, and concerns of each community we work with. Indigenous Peoples' inherent, treaty and constitutionally protected rights and title to their lands and resources must be upheld in relation to natural resource operations within their territories. This means that Indigenous people need to be involved in decision-making processes about their land and resources. When we include Indigenous Peoples in decision-making, we can better provide certainty for the natural resource economy and promote collaborative stewardship of land and resources for future generations.

To begin building respectful relationships with Indigenous Peoples, we must reconcile our shared history by understanding how colonialism has profoundly impacted Indigenous social, political, economic, cultural, and spiritual life, and caused extensive intergenerational trauma to Indigenous Peoples that continues today.

As an important step towards meaningful reconciliation, the provincial government and the First Nations Leadership Council developed the [Declaration on the Rights of Indigenous Peoples Act](#) (UN Declaration) creating a framework of goals, outcomes, and tangible actions needed for the progression of reconciliation. The UN Declaration Act came into law in November 2019 adopting the [United Nations Declaration on the Rights of Indigenous Peoples](#) (UN Declaration) to ensure basic human rights and well-being of Indigenous Peoples while creating a pathway to work together for a better future.

Even if you do not work directly with Indigenous people, it is important to learn more about:

- How we can work to right past and ongoing wrongs.
- Why and how the BC Government is moving towards reconciliation.
- Indigenous Peoples' culture, rights, traditional governance, connection to the land, and local knowledge.
- Changing the colonial way of thinking to build better relationships with Indigenous Peoples.

Purpose

This document provides introductory information about Indigenous Peoples' rights to and connection with the land, briefly describes how experiences of colonization have resulted in ongoing trauma, and highlights why it is important for BCTS to reconcile with Indigenous Peoples. This includes a description of how the province is working towards reconciliation and includes ideas for how we all can work together for a better future. BCTS recognizes that Indigenous Peoples are the primary guardians and interpreters of their culture. Since the information provided in this document is just a beginning, everyone is encouraged to reflect and learn beyond this material because we all need to understand how we come to our work, including our roles and responsibilities to the land and how we can move forward.

Please note that the information included in this document was compiled through referencing resources created by or in collaboration with Indigenous Peoples or organizations, which are hyperlinked into the text and references. Readers are encouraged to explore the referenced materials as the primary sources of information on the topics and as an opportunity to increase knowledge.

Indigenous Peoples

Indigenous Peoples in Canada include First Nations, Métis, and Inuit people. Over 270,500 people in BC, approximately 5.9% of the province's population, identify as Indigenous. Amongst that population, approximately 65% identify as First Nations, 34% as Métis, and 1% as Inuit. In BC, there are over 200 distinct First Nations and BCTS works with many of these communities throughout the province.

Aboriginal Peoples includes First Nations, Métis, and Inuit as defined in [Section 35.\(2\) of Canada's Constitution Act, 1982](#).

First Nations is a term used to describe Indigenous peoples in Canada who are not Métis or Inuit.

Inuit (Inuk singular) are Indigenous people in northern Canada, living mainly in Nunavut, Northwest Territories, northern Quebec, and Labrador.

Métis Peoples are people of mixed Indigenous and European ancestry.

Please note: Using the term "Indian" may be offensive for some and using "Native" may be considered derogatory.

For more information on Indigenous communities, territories, languages, and treaties please visit the [Native Land](#) or [Whose Land](#) website. BCTS' business areas can also provide additional information regarding local First Nations. For guidance on terminology: [Indigenous Peoples: A Guide to Terminology](#)

Aboriginal Rights, Treaty Rights and Aboriginal Title

In 1982, existing Aboriginal and treaty rights, including title, were recognized and affirmed in [Section 35.\(1\) of Canada's Constitution Act, 1982](#), which includes BC. Land and Indigenous rights are linked and, in the Canadian context, can be understood through the examination of Aboriginal rights and title.

Aboriginal rights are those activities, practices and customs that are integral to the distinctive culture of an Aboriginal group and were practiced well before European contact.

Aboriginal title is an Aboriginal right arising from Indigenous peoples' historic occupation of the landscape; it is a right to the exclusive use and control of the land, as well as the right to economic benefits of the land.

Treaty rights in BC are Aboriginal rights set out in either historic or modern treaty agreements. Treaty agreements are one way to provide certainty and to clarify Aboriginal rights and title, thereby resolving ownership of BC's land and resources.

The Importance of the Land for Indigenous Peoples

When we build relationships with Indigenous Peoples, it is essential for us to understand the importance of land for Indigenous Peoples including the following:

- Indigenous governance structure and legal traditions.
- Indigenous Peoples' rights to and connection with the land.
- The importance of considering and implementing Indigenous knowledge into decision making on the land base.
- How to minimize impacts that may occur on the land.

Please note: The following information is provided as an introduction. The best source of such information is directly from Indigenous peoples and their websites. However, here are two suggested internet sites [First Nations Relationship to the Land](#) and [Meaning of Land to Aboriginal People](#) for additional information.

Indigenous Peoples' Governance and Law

Before contact with Europeans, Indigenous peoples of North America were self-sustaining and self-governing societies with complex social, economic, and political structures. Despite the destructive impacts of colonization, these complex systems continue today. Indigenous governance is connected to family, the land, and spirituality. For many Indigenous people, the concept of government is a way of life and is grounded in natural law or law of the Creator. This law gives direction to individuals in fulfilling their responsibilities as stewards of the land and guides their relationships with other people. Since most traditional laws are customary and unwritten, these laws are often misunderstood by non-Indigenous peoples who might be accustomed to thinking of laws as rules laid down by legislatures. This misunderstanding has led some to deny that Indigenous legal systems constitute law.

Indigenous Peoples have had non-traditional laws imposed upon them without consent. A goal of reconciliation is to advance the Indigenous right of self-determination and to transition away from the [Indian Act](#) and toward self-governance. Doing so will enable Indigenous communities to reduce their dependency on external governments and will empower communities to deal with the challenges they face at a more local level.

Note on **Indigenous Leadership**

Elected chiefs are a form of leadership that is defined by and functions under the control of the *Indian Act*, the legislation that defines “status” Indians.

Hereditary Chiefs are individuals with inherited title, rights, and responsibilities who hold a traditional leadership position. They are the caretakers of their people and culture. In addition to governance responsibilities, they may carry or share the responsibility of ensuring the traditions, protocols, songs, and dances of the community are respected and kept alive.

Elders are respected leaders, wisdom, and knowledge keepers. Becoming an Elder is less about age and more about bestowed community respect. Elders play a significant role in communities as a living connection to the past.

Indigenous Peoples’ Connection to the Land

Indigenous Peoples have a deep connection to the land, water, and its resources, and they have maintained this connection since time immemorial. Many Indigenous Peoples share beliefs and principles that govern their relationship with and responsibility to the land. Indigenous cultures in BC are very diverse and not monolithic, but generally it is believed that all living beings belong to the land, and it provides for humans. There is a responsibility to respect and care for it and to practice a mutual relationship with the land. Languages, cultural practices, Indigenous knowledge, and oral traditions are also deeply related to Indigenous Peoples’ connection to the land. Recognizing this, the UN Declaration states that Indigenous Peoples have the right to maintain and strengthen their distinctive spiritual relationship with traditional lands and waters ([Article 25 UN Declaration](#)). It is necessary to learn about how the Indigenous people and communities you work with connect to their land and to be respectful of this connection. This can be accomplished through communications with local Indigenous communities, Indigenous Nations’ websites, and/or the local government office.

Indigenous Knowledge

Indigenous Knowledge (IK) can be very diverse as Indigenous Peoples have thousands of years of history interacting with their lands, resources, and territories. This knowledge may include ecological knowledge, community practices and teachings, relationships and laws, and the significance of impacts to important values, including cultural and spiritual values. While it is important to recognize that there is no universally accepted definition of IK, there are some consistencies in the way IK is described. As a starting point, the United Nations Educational, Scientific, and Cultural Organization defines it as, “the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings,” in a way that, “informs decision-making about fundamental aspects of day-to-day life.”

(Link for quotes: [Indigenous Knowledge](#))

In our work, we often engage with IK that is intergenerational, adaptive, cumulative, broad, holistic, and place based. It is being recognized that incorporating IK into sustainable natural resource operations is very important and marrying western science and IK can foster a greatly improved standard of sustainable natural resource management. IK is a unique and important way of determining how a proposed project may interact with the environment and local communities. This knowledge needs to be incorporated into non-Indigenous decision-making processes, informing how projects should be delivered and confirming their interaction with the land. When the incorporation of IK is led by Indigenous people and communities in alignment with [Article 31 of the UN Declaration](#), we can together preserve, protect, and guard against appropriation or unlicensed usage.

Colonialism and Our Shared History

Prior to European settlement, Indigenous Peoples in what is now called Canada, managed vast territories and resources according to their own governance systems and laws. Today, that vast management of land has been significantly impacted by a history of colonization.

This massive land dispossession and accompanying dependency and impoverishment has had devastating impacts on the social, political, economic, cultural, and spiritual well-being of Indigenous Peoples. When coupled with a history of oppressive colonial policies, Legislation (e.g., [Indian Act of 1876](#)), and systems (e.g., Residential schools and child welfare), Indigenous children and families are still suffering from the ongoing impacts of colonialism. These devastating impacts on Indigenous Peoples were an intentional and systematic component of Canada's colonial agenda. European settlers targeted and forced Indigenous Peoples to become disconnected from their land, culture, and community. As part of our learning, it is important to understand why there is ongoing trauma resulting from colonialism.

The following information is a summary of our history that resulted in the intergenerational trauma:
(Note: For additional information please refer to links available in Appendices 1 and 2)

European Contact in British Columbia in the late 1700s

- ◆ By the late 1800s, Indigenous populations in BC were significantly reduced by European introduced disease. This allowed settlers to claim lands without having to compensate Indigenous Peoples.
- ◆ Indigenous Peoples were forced to adapt to a new way of life with the loss of traditional lands and food and began to lose control of their culture and their important connection to the land.
- ◆ Europeans thought of Indigenous Peoples as “savages”/ “non-humans”.
- ◆ Indigenous Peoples were physically attacked and subject to racism from settlers and government.

The *Indian Act* (1876 to today), Racism and Cultural Assimilation

- ◆ John A MacDonalD’s goal of legislation, such as the *Indian Act*, was to do away with the tribal system and assimilate “Indian People” in all respects.
- ◆ The government intended to destroy political and social institutions by seizing land, persecuting spiritual leaders, banning languages, outlawing cultural practices, restricting movement, and disrupting families/communities so cultural values would not be passed on to future generations.
- ◆ Indigenous Peoples lost their rights, and their life was controlled by European law.
- ◆ Canada created reserves to separate Indigenous Peoples from settler activity on their land. The *Indian Act* organized people into Indian Act Bands and restricted First Nations from leaving these small areas within their territories unless they received a Canadian government pass.
- ◆ Women's status and Indigenous Peoples’ right to vote were denied.
- ◆ Indigenous Peoples no longer had the freedom to practice their traditional political system.
- ◆ Individuals were renamed with European names.

Systematic Cultural Assimilation

Residential Schools were mandatory for Indigenous children who were forcefully taken away from their families with the intent to educate, convert, and assimilate them to European ways. They were designed to remove the “savage” from the child. The children’s traditional clothes were taken, and their hair was cut. Many children were subject to several forms of abuse, malnourishment and did not receive a proper education. It is estimated that 150 000 children attended these schools across Canada, and many did not return home. There were 23 schools in BC and the last two closed in 1984.

Indian Day Schools were mandatory for Indigenous children and were run by the same groups as the residential schools. The children stayed with their parents, but the goal was to assimilate Indigenous children and they suffered physical, verbal, and sexual abuse. There were 112 schools in British Columbia and the last three closed in 1994.

Indian Hospitals were federally funded and part of a racially segregated health-care system. These hospitals were overcrowded, and patients received poor quality care compared to non-Indigenous people. Indigenous people were forcefully detained (often some distance from their communities) and some were subjects of experimental treatments. If patients succumbed to their illness, they were only returned to their communities if their families could pay for their return. Like the children from residential schools, many were buried in unmarked graves.

The Sixties Scoop refers to rapid acceleration of the federal government’s forceful removal of Indigenous children from their families and communities during the 1960s. This approach was the fastest and easiest way of addressing welfare issues. “Scooped” children were put in foster care or put up for adoption, and while some children had good homes, others were subjected to abuse. They were placed in predominantly non-Indigenous homes, resulting in a loss of cultural identity. Most children did not learn about their culture and identity until later in life, resulting in long lasting effects.

The Millennium Scoop refers to the continued overrepresentation of Indigenous children in the Canadian foster care system. Like the Sixties Scoop, Indigenous children who go through government systems are often cut off from their families and culture. This continued pattern indicates the need for a change in how governments in Canada address and resolve Indigenous child welfare issues.

Violence against Indigenous Women, Girls, and Two-Spirit People

Missing and Murdered Indigenous Women, Girls, and Two Spirit People: Ongoing and deliberate rights violations and abuses are the root cause behind the high rate of violence against Indigenous women, girls and two spirit people. There is intergenerational trauma and marginalization, and specific colonial and patriarchal policies that displaced women and two-spirit people from their traditional roles and diminished their status in society, leaving them vulnerable to violence. As an example, violence inflicted upon Indigenous women, girls and two-spirit people can be a result of domestic situations, homelessness, involvement in the sex trade, and bias in the community including from law enforcement.

There is a need to transform the systemic and societal values that maintain colonial violence, poverty, insecure housing or homelessness, and barriers to education, employment, health care and cultural support.

The Province’s (Ministry of Forests) Commitment to Reconciliation with Indigenous Peoples

A reconciliation approach to building and sustaining respectful and equitable relationships between non-Indigenous and Indigenous peoples can address how non-Indigenous historical settlement have had very serious consequences for Indigenous cultures, languages, lands, families, and communities. To help right historical and ongoing wrongs committed against Indigenous Peoples in BC, the Province is deeply committed to moving forward towards true and lasting reconciliation with Indigenous Peoples. The following paragraphs provide an overview of what reconciliation can mean and specific actions that are being taken to work towards this goal.

Reconciliation is an ongoing process to shift the status quo with the goal of renewed government-to-government relationships with Indigenous Peoples based on respect, recognition of rights, co-operation, and partnership to help address the consequences of colonial policies and practices that continue to have lasting effects on Indigenous Peoples. Success will be when Indigenous Peoples are self-governing, self-reliant, and self-determining.



United Nations Declaration on the Rights of Indigenous Peoples is being fully adopted and implemented by the province. The [\(UN Declaration\)](#) defines human rights of Indigenous Peoples such as culture, identity, religion, language, health, education, and community. The Declaration protects the rights that “constitute the minimum standards of survival, dignity and well-being of the Indigenous Peoples of the world” [\(Article 43 of UN Declaration\)](#).



Truth and Reconciliation Commission of Canada’s Calls to Action are being adopted and implemented by the province. The [\(TRC\)](#) was a component of the Indian Residential Schools Settlement Agreement. In 2015, the final report was published detailing the experiences and impacts of the residential school system. The document detailed 94 calls to action to address the ongoing impacts of residential schools on the survivors and their families.



The Declaration on the Rights of Indigenous Peoples Act was passed on November 19, 2019, and recognizes Indigenous Peoples’ human rights in BC law. The Declaration Act is a foundation for the path forward that respects reconciliation in BC. It brings Indigenous Peoples to the table for decisions that affect them, and it creates more opportunities for Indigenous Peoples to be partners in the economy. For more information, please refer to [the Declaration Act](#), the [Declaration Act Action Plan 2022](#) and [BC Declaration Act Forestry Factsheet](#).



The Honourable Katrine Conroy’s Mandate Letter and Reconciliation includes the provincial government’s commitment to reconciliation in their platform [Working for You](#). This letter outlines the government’s foundational principles for: putting people first; lasting and meaningful reconciliation with Indigenous Peoples; equity and anti-racism; a better future through fighting climate change; and a strong, sustainable economy that works for everyone.

For more information, please refer to [Honourable Katrine Conroy’s Mandate Letter](#)



Principles that Guide the Province’s Relationship with Indigenous Peoples is a tool for building positive (renewed) relationships with Indigenous Peoples based on respect and reconciliation. This document has information on how to better understand the province’s commitment to building better relationships with Indigenous Peoples and furthering reconciliation. For more information, please refer to the

[10 Draft Principles](#) and the [Q and A - 10 Principles](#).



Modernizing Forest Policy in British Columbia is an initiative to help meet current challenges and opportunities in BC’s Forest Sector. Part of this initiative is to work government-to-government with Indigenous governing bodies to increase Indigenous peoples’ role in the forest sector and sustainable forest management. Current policy and legislation limit the province’s ability to support this and to provide further opportunities for shared decision-making agreements. For more information, refer to [Modernizing BC’s Forest Sector](#). The province has also increased **Shared Forestry Revenues** to provide meaningful benefits for forestry taking place in their territory and to enhance relationships in accordance with the UN Declaration. For more information: [Forest Revenue Sharing](#)



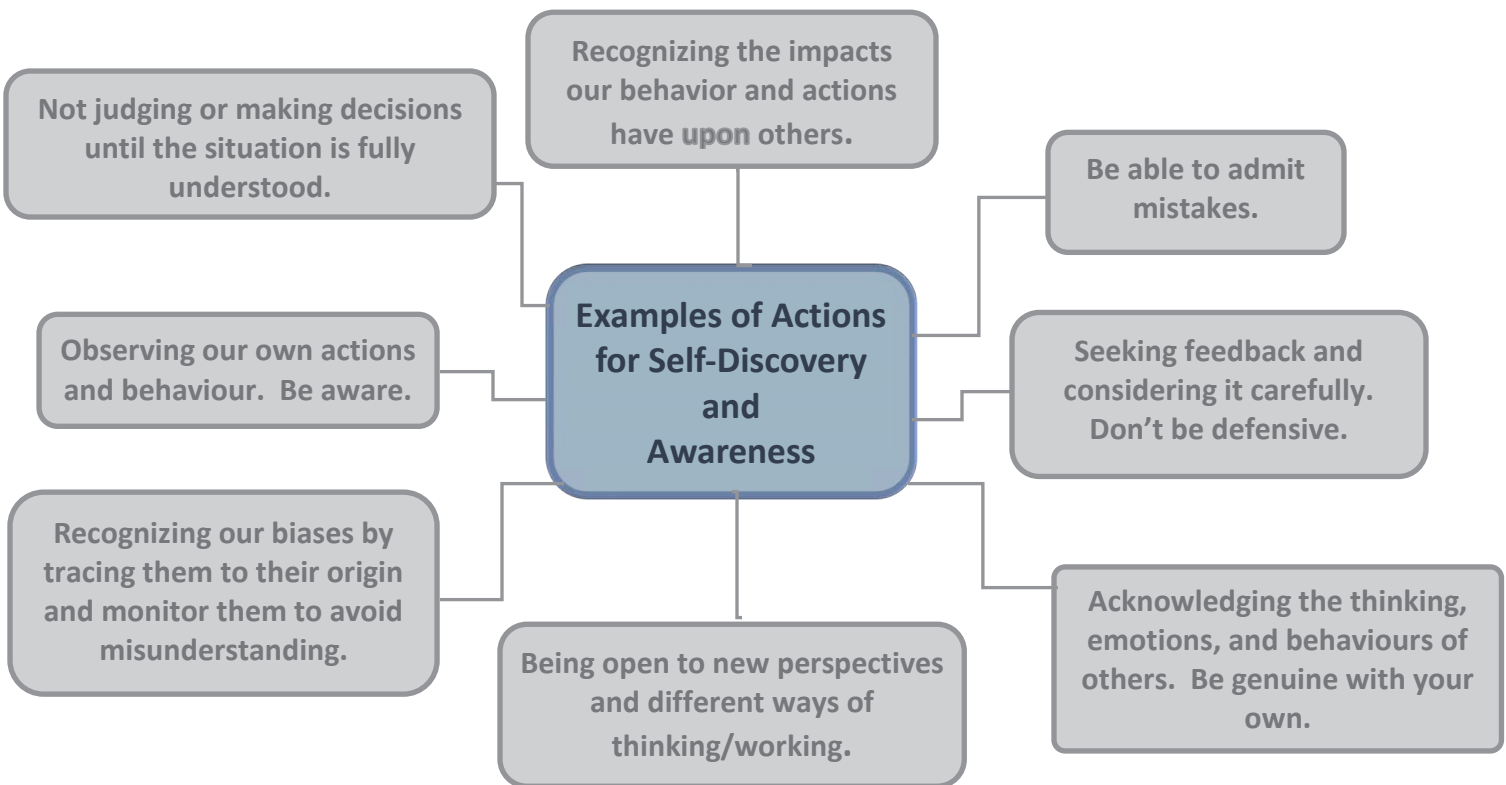
BC Timber Sales’ Commitment to Reconciliation with Indigenous Peoples is an integral part of BCTS’s mandate and a program goal (including forest sector safety and sustainable forest management). BCTS is actively entering partnerships with First Nations to increase their participation in the management of the natural resource sector. This commitment will continue to ensure the success of the BCTS program. For more information, please refer to the [BC Timber Sale Business Plan](#).



Building Respectful Relationships

To strengthen our relationships at work, in our communities and personal lives; self-discovery and awareness are two competencies that help us to understand our thoughts, feelings, values and lived experience, and how they impact the quality of our interactions, relationships, and/or our work. Active self-discovery and awareness enable us to recognize our biases (pre-judged for or against) so we can understand how we could think and act in ways that strengthen our relationships. The following are some actions we can take to improve our personal effectiveness through self-discovery and awareness:

How to Improve Communication - Self-discovery and Awareness



When we choose to embrace new ways of thinking and acting in situations that are difficult, uncertain, and/or urgent we can begin to build stronger and more resilient relationships with Indigenous Peoples. To do this, we can intentionally choose behaviours that positively impact our interactions and relationships. We need to ensure our personal perspectives are sensitive and responsive to the needs and interests of Indigenous Peoples. This process starts with cultural awareness which is the acknowledgement of differences and respecting cultural protocols and traditions.

Understanding Cultural Safety and Humility

One step towards healing relationships with Indigenous Peoples is creating an environment of cultural safety and humility.

Cultural humility is a process of self-reflection to understand personal and systemic biases, and to develop and maintain respectful processes and relationships based on mutual trust. Cultural humility involves acknowledging oneself as a learner and trying to understand another person’s experience.

Cultural safety within an Indigenous context is an outcome based on respectful engagement that recognizes and strives to address power imbalances and includes self-reflection on how our own culture (including colonial thinking) impacts Indigenous Peoples. The result of cultural safety is an environment free of racism and discrimination, where people feel safe when interacting with others.

An environment of cultural safety recognizes the unique experiences of Indigenous Peoples and ensures that no actions demean, diminish, or disempower the well-being and cultural identity of individuals. Cultural safety and humility are how we can understand our personal and systemic biases and learning together to develop and maintain respectful relationships based on mutual trust.

Cultural Agility is the ability to work respectfully, knowledgeably, and effectively with people of different cultures to create a sense of safety. In action it is being open to unfamiliar experience and transforming feelings of nervousness or anxiety into curiosity and appreciation. When working with Indigenous Peoples, for example, it is important to:



Building Respectful Relationships - Dealing with Conflict

Understanding how we can use self-awareness and discovery when interacting with people can aid in building respectful relationships. When working with Indigenous Peoples, creating an environment of cultural safety and humility will further a respectful relationship based on trust. Having the knowledge of cultural agility will also make it easier to build relationships with Indigenous Peoples. Further, there is a need for all parties to understand each other's interests but there will be times when this will not happen in the short term and will result in conflict. The following are some tips on how to deal with conflict:

Ask Questions – conflict can arise due to miscommunication. Asking questions increases understanding of what individuals are trying to say and what was intended from the conversation.

Understand Expectations – often conflict results from unmet expectations on one side and this may cause the conversation to be negative and closed. If the conversation seems to be going to a negative place, work together to understand why this is happening.

Recognize Differing Perspectives - during interactions individuals will see things differently. Different backgrounds, culture, or points of view can lead to differing opinions. It is easy to believe that we all see things the same way but if this is not the case, further conversations may be required.

Identify Mistakes – there is nothing wrong with admitting a mistake has been made as most mistakes are honest and unintended.

Watch Out for Emotional Triggers – be aware of emotions. Fear, real or perceived anger, and excitement can result in unintended conflict which may result in the interaction going down an unintended and unproductive path.

Focus on Preventing Escalation – conflict resolution always starts with one individual making an honest attempt to avoid further escalation.

Take Action to Control the Situation – to avoid escalation there may be a need to walk away and return to the conversation at a different time, change the location of the discussion, and/or show empathy for the other involved.

Commit to Working It Out - take charge of the situation by committing to reach a resolution. This tends to calm individuals down.

De-escalate the Conflict – this can be accomplished with a joint statement of the facts and eliminating personality conflicts, exaggerations, and embellishments.

Stay Calm – this is very important. Staying cool will prevent most escalating conflicts. If you stay calm, it will be easier for others to refocus on the conversation and task at hand.

In stressful situations, there is a higher probability of mistakes or distractions during work which may result in safety issues. If a conflict occurs because of an operational issue, please contact your BCTS contract coordinator or harvest monitor.

Conclusion - Building Relationships and Working Together with Indigenous People

Building respectful relationships create a foundation for collaboration. While this can take effort and commitment, our willingness to participate in open exchanges of experiences and cultures with a genuine, non-controlling approach can demonstrate our commitment to integrity and transparency.

The provincial government, including BCTS, are working towards true and lasting reconciliation with Indigenous Peoples. By working together with Indigenous Peoples, we can build respectful relationships that will benefit everyone.

Appendix 1 - Educational Videos

Subject	Description	Duration	Link (Ctrl + Left Click to Open)
<i>Impacts of Colonialism on Indigenous Peoples</i>	A short-animated film on how colonialism impacted Indigenous Peoples in Australia, but this also applies to BC and Canada	4 mins	<u>Intergenerational Trauma (Indigenous Australia)</u>
<i>Everything is Connected a Dialogue Between MMIWG and Sixties Scoop</i>	This documentary connects intergenerational trauma, cultural loss from government programs/policies, and missing and murdered women and children	55 mins	<u>Everything is Connected</u>
<i>Doctrine of Discovery</i>	This video provides education on Indigenous Peoples' way of life, colonialists and how colonialism impacted Indigenous Peoples and the ongoing effects that are still seen today	60 mins	<u>Doctrine of Discovery - Stolen Lands, Strong Hearts</u>
<i>Indigenous Guardians – Caring for the Land</i>	The Importance of the land for Indigenous people	3 mins	<u>Indigenous Guardians</u>

<p><i>The Royal Proclamation</i></p>	<p>Background On October 7, 1763, George III, King of England, signed the <i>Royal Proclamation</i> for the administration of British territories in North America. This proclamation is a foundational document in the relationship between Indigenous Peoples and the Crown and it gave ownership over North America to King George. The Royal Proclamation declared that Aboriginal title exists and that all land would be considered Indigenous land until ceded by treaty. The proclamation forbade colonialists from claiming land from the Indigenous occupants unless it has been first bought by the Crown and then sold to the settlers. However, the government used the proclamation to restrict Aboriginal rights. The TRC calls upon the federal government to further this proclamation as part of reconciliation and reaffirm the nation-to-nation relationship between Indigenous Peoples and the Crown.</p>		<p>See links below</p>
<p><i>The Royal Proclamation</i></p>	<p>This video provides information on the Royal Proclamation of 1763 and the “love-hate” relationship Indigenous Peoples have with the proclamation.</p>	<p>30 mins</p>	<p><u>Chief Justice Murray Sinclair and the Royal Proclamation of 1763</u></p>
<p><i>The Royal Proclamation</i></p>	<p>This video speaks to how the Royal Proclamation recognizes Aboriginal rights, Indigenous Peoples not conquered, and formed the foundation of modern government-to-government negotiations</p>	<p>5 mins</p>	<p><u>Bob Joseph on the Royal Proclamation of 1763</u></p>
<p><i>Misconceptions of Colonialism</i></p>	<p>This video speaks to the misconceptions regarding colonialism</p>	<p>11 mins</p>	<p><u>8th Fire Part 1 - What Went Wrong?</u></p>
<p><i>Canada's Shared History - Assimilation and Residential Schools</i></p>	<p>This video speaks to relationships with Indigenous Peoples, assimilation, and ongoing impacts of colonialism.</p>	<p>4 mins</p>	<p><u>Canada's Shared History - Assimilation of Indigenous Peoples</u></p>

<i>Residential Schools in Canada</i>	This video provides information on the history of residential schools.	5 mins	<u>Residential Schools in Canada: A Timeline</u>
<i>Misconceptions regarding Indigenous Peoples</i>	This video speaks to misconceptions and stereotypes regarding Indigenous Peoples.	43 mins	<u>8th Fire: Indigenous in the City</u>
<i>Land Claims</i>	This video speaks to views regarding land in Canada.	43 mins	<u>8th Fire - Whose Land Is It Anyway?</u>
<i>Cultural Safety</i>	This video provides information on what is cultural safety.	5 mins	<u>Northern Health Indigenous Health Cultural Safety: Respect and Dignity in Relationships Video</u>
<i>What Does Being Indigenous Mean?</i>	Indigenous people providing their thoughts on what it means to be Indigenous.	3 mins	<u>What does being Indigenous mean?</u>

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BC TIMBER SALES – Working with Indigenous Peoples

Last Updated: September 19, 2022

BC Timber Sales (BCTS) manages the harvesting and reforestation of approximately 20 per cent of the allowable annual cut for public land, generating economic prosperity in British Columbia through safe and sustainable forest management and the auction of timber. As part of our business planning, there are guiding principles for forest sector safety, sustainable forest management, and reconciliation with Indigenous Peoples.

Reconciliation with Indigenous Peoples is integral to BCTS' mandate and its long-term success, and the program will continue to engage with Indigenous Peoples on how to best collaborate and continue our collective journey towards reconciliation. Part of this journey is improving cultural awareness and the understanding of Indigenous Peoples' history, relationship with the land and legal framework. This includes opportunities to build effective and ongoing relationships with Indigenous Peoples.

Working together with Indigenous Peoples takes willingness to building relationships by participating in open exchanges regarding wants, experiences and culture. Each Indigenous Nation has unique cultures, community interests, and concerns regarding operations in their territories. Indigenous Peoples would like the land to be treated with respect, and the impacts to the land and its values minimized. As part of building relationships and informing operational decisions, it is important to understand Indigenous Peoples' connection to the land and how Indigenous knowledge can inform such decisions.

Understanding our shared history and why it has led to intergenerational trauma for Indigenous Peoples is an important step towards reconciliation, righting some wrongs from the past, and improving relationships with Indigenous Peoples.

The following information provides further insight into why we need to work with Indigenous Peoples but is only a fraction of available information. This document should be considered a starting point in educating all who work with BCTS.

Ongoing Learning is important to understand why colonialism has resulted in ongoing generational trauma for Indigenous Peoples. This includes educating ourselves on traditional governance, Indigenous Peoples' connection to the land, and the importance of traditional knowledge.

We need to build positive relationships through self-discovery and awareness, and understanding why cultural humility and cultural safety are important to healing relationships.

Education, listening to each other, and understanding everyone's points of view and culture are important to reduce potential conflict.

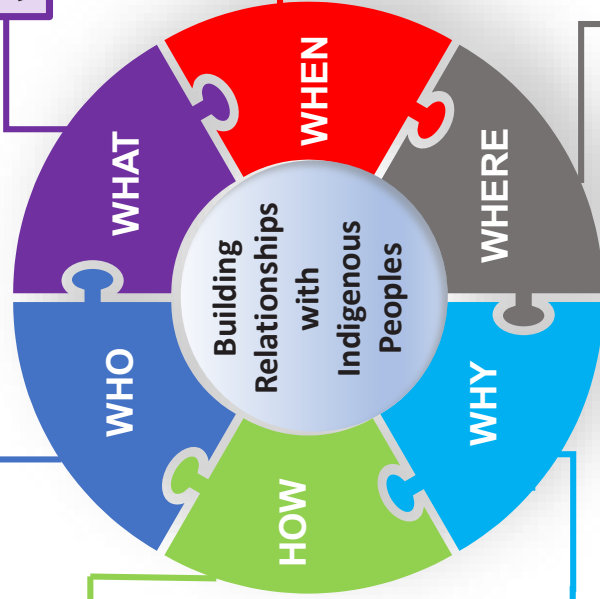
The ability to work respectfully, knowledgeably, and effectively will result in positive relationships.

Colonialism has greatly impacted Indigenous Peoples through racist and colonial policies, and the effects are still seen today. Some examples of this are: the continuing existence of the *Indian Act*; residential and day schools; Indian hospitals; the sixties and millennium scoops; the missing and murdered Indigenous women and girls, and past and current provincial and federal government systems.

By working together, we can shift the status quo and renew trust based relationships with Indigenous Peoples based on respect.

Success will be when Indigenous Peoples believe they are self-governing, self-reliant and self-determining.

Indigenous and Non-Indigenous Peoples need to work together to build a better British Columbia. This includes all who work directly for BCTS, TSL holders and contractors.



Colonialism forced Indigenous Peoples to disconnect from their lands, culture, and community. To attempt to right wrongs from the past, we must work together to move towards reconciliation and build positive relationships with Indigenous Peoples.

Since **European contact** in the late 1700s (for BC) colonialism has greatly impacted Indigenous Peoples through assimilation, systematic destruction of culture, and disease. The goal of the Province (including BCTS) is to reconcile with Indigenous Peoples. This includes providing opportunities for Indigenous communities to participate in BC's economy. This process is ongoing, and reconciliation will be achieved when everyone agrees. This may take time and will evolve over time.

As part of reconciliation, building respectful relationships, and forming positive partnerships with Indigenous Peoples will take place within and outside of government and on government worksites, and industry (including forestry) is also working to partner with Indigenous Peoples.



External Safety Bulletin

This bulletin is intended to highlight current and/or emerging safety issues and provide additional safety information to BC Timber Sales forest sector clients (agreement holders and contractors).

Resource Road Safety:

Resource roads are not built or maintained to the same standards as public highways. The best way to stay safe is drive to the conditions of the road and use your two-way radio control procedures. Videos and additional information on road safety and calling procedures can be found at

- [Resource road safety information](#)
- [Resource Road Orientation \(YouTube\)](#)
- [Radio Use and Road Calling Procedures \(YouTube\)](#).



Construction Initiated Slides and Erosion Events

Where a risk of landslide has been identified, operator training video is **required mandatory viewing** for all road construction supervisors and equipment operators constructing a road in a BCTS forestry operation:

- [Road Construction Initiated Slides - Operator Training \(YouTube\)](#)

Forest professionals involved in development and implementation of road construction activities are encouraged to review the following slides:

- [Road Construction Initiated Slides Awareness for Professionals \(PPTX\)](#)

For more information:

- [Construction Initiated Slides Working Group](#)



Caution on Our Flood Damaged Resource Roads

B.C. recently experienced a catastrophic flooding event causing significant impact to the province's public infrastructure and forcing thousands of people to evacuate their homes and communities. With the amount of work that needs to be done on highways, public infrastructure and in communities, many resource roads across B.C. have not yet been assessed for safe use. Industry workers may be planning to travel into areas where there is a high potential for washed-out roads, landslides, and flooding. Spring run-off will test already weakened structures and may cause additional damage. It is extremely important that our staff and contractors use extreme caution when using our resource roads and prepare emergency response plans with this in mind.



Building Safe Switchbacks

The BC Forest Safety Council released a new video on building resource road switchbacks. The video illustrates key messages for the correct planning, engineering and building of a switchbacks and the value the forest industry places on ensuring resource roads are safe for all users.

- [Switchback - Planning, Layout and Construction \(YouTube\)](#)



Field Card for use by LPC supervisors to support worker EMS and SFM training

BEFORE STARTING WORK KNOW ABOUT:

1. Environmental and Sustainable Forest Management Policies

- Complying with the law.
- Prevent & minimize impacts on the environment.
- Practice of sustainable forestry.
- Recognition and respect for indigenous rights
- Continuous Improvement

2. Emergency Response Plan

- Know your eERP roles and responsibilities.
- Be prepared for emergencies i.e. fire, spills and erosion events.
- Know location of applicable ER equipment (spill kit, hand tools, fire suppression).

3. Environmental Field Procedures

- EFP #1 “General” applies to all workers.
- EFP #2 “Supervisors” applies to project and/or onsite supervisors.
- EFP #3 “Developing & Planning” applies to planning & development activities.
- EFP #4 “Roads Bridges and Major Culverts” applies road construction, maintenance, inspections and deactivation activities.
- EFP #5 “Harvesting” applies to all phases of harvesting activities.
- EFP #6 “Fuel Handling” applies to fuel handling activities.
- EFP #7 “Dryland Sort” applies to dryland sort activities.
- EFP #8 “Marine Log Handling Facilities” applies to construction & operations of log dumps, helicopter water drop zones, and direct barge-loading facilities.

Ensure all workers are familiar with the EFPs that apply to their roles and responsibilities before starting work. Copies available from your supervisor or BCTS representative.

4. Stop Work Procedures (See EFPs)

If not sure, Stop Work and contact your project supervisor or BCTS representative.

5. What to report to Supervisor and BCTS

- Hazardous Material Spills, Uncontrolled Fires & Erosion / Landslide Events.
- Potential non-compliances and non-conformances.
- Unidentified resource features, values, or sensitive areas e.g. Karst, Bear dens, culturally modified trees
- Species of Management Concern sightings.
- Changes to project plan.
- Safety hazards, close calls/near misses, or accidents.
- STOP Work situations